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AN ANTHOLOGY OF 50 SHORT STORIES

Revised Edition

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INDUSTRIAL REVOLUTION
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Ever think how deadly a thing it is if a machine has amnesia-- or how easily it can be arranged....

"Well, yes," Amspaugh admitted, "it was a unique war in many ways, including its origin. However, there are so many analogies to other colonial revolutions--" His words trailed off as usual.

"I know. Earth's mercantile policies and so forth," said Lindgren. He fancies himself a student of interplanetary history. This has led to quite a few arguments since Amspaugh, who teaches in that field, joined the Club. Mostly they're good. I went to the bar and got myself another drink, listening as the mine owner's big voice went on:

"But what began it? When did the asterites first start realizing they weren't pseudopods of a dozen Terrestrial nations, but a single nation in their own right? There's the root of the revolution. And it can be pinned down, too."

"'Ware metaphor!" cried someone at my elbow. I turned and saw Missy Blades. She'd come quietly into the lounge and started mixing a gin and bitters.

The view window framed her white head in Orion as she moved toward the little cluster of seated men. She took a fat cigar from her pocket, struck it on her shoe sole, and added her special contribution to the blue cloud in the room after she sat down.

"Excuse me," she said. "I couldn't help that. Please go on." Which I hope relieves you of any fear that she's an Unforgettable Character. Oh, yes, she's old as Satan now; her toil and guts and conniving make up half the biography of the Sword; she manned a gun turret at Ceres, and was mate of the Tyrfung on some of the earliest Saturn runs when men took their lives between their teeth because they needed both hands free; her sons and grandsons fill the Belt with their brawling ventures; she can drink any ordinary man to the deck; she's one of the three women ever admitted to the Club. But she's also one of the few genuine ladies I've known in my life.

"Uh, well," Lindgren grinned at her. "I was saying, Missy, the germ of the revolution was when the Stations armed themselves. You see, that meant more than police powers. It implied a degree of sovereignty. Over the years, the implication grew."

"Correct." Orloff nodded his bald head. "I remember how the Governing Commission squallled when the Station managers first demanded the right. They foresaw trouble. But if the Stations belonging to one country put in space weapons, what else could the others do?"

"They should have stuck together and all been firm about refusing to allow it," Amspaugh said. "From the standpoint of their own best interests, I mean."

"They tried to," Orloff replied. "I hate to think how many communications we sent home from our own office, and the others must have done the same. But Earth was a long way off. The Station bosses were close. Inverse square law of political pressure."

"I grant you, arming each new little settlement proved important," Amspaugh said. "But really, it expressed nothing more than the first inchoate stirrings of asteroid nationalism. And the origins of that are much more subtle and complex. For instance ... er...."

"You've got to have a key event somewhere," Lindgren insisted. "I say that this was it."

A silence fell, as will happen in conversation. I came back from the bar and settled myself beside Missy. She looked for a while into her drink, and then out to the stars. The slow spin of our rock had now brought the Dippers into view. Her faded eyes sought the Pole Star--but it's Earth's, not our own any more--and I wondered what memories they were sharing. She shook herself the least bit and said:

"I don't know about the sociological ins and outs. All I know is, a lot of things happened, and there wasn't any pattern to them at the time. We just slogged through as best we were able, which wasn't really very good. But I can identify one of those wriggling roots for you, Sigurd. I was there when the question of arming the Stations first came up. Or, rather, when the incident occurred that led directly to the question being raised."

Our whole attention went to her. She didn't dwell on the past as often as we would have liked.

A slow, private smile crossed her lips. She looked beyond us again. "As a matter of fact," she murmured, "I got my husband out of it." Then quickly, as if to keep from remembering too much:

"Do you care to hear the story? It was when the Sword was just getting started. They'd established themselves
on SSC 45—oh, never mind the catalogue number. Sword Enterprises, because Mike Blades' name suggested it—what kind of name could you get out of Jimmy Chung, even if he was the senior partner? It'd sound too much like a collision with a meteorite—so naturally the asteroid also came to be called the Sword. They began on the borrowed shoestring that was usual in those days. Of course, in the Belt a shoestring has to be mighty long, and finances got stretched to the limit. The older men here will know how much had to be done by hand, in mortal danger, because machines were too expensive. But in spite of everything, they succeeded. The Station was functional and they were ready to start business when—"

* * * * *

It was no coincidence that the Jupiter craft were arriving steadily when the battleship came. Construction had been scheduled with this in mind, that the Sword should be approaching conjunction with the king planet, making direct shuttle service feasible, just as the chemical plant went into service. We need not consider how much struggle and heartbreak had gone into meeting that schedule. As for the battleship, she appeared because the fact that a Station in just this orbit was about to commence operations was news important enough to cross the Solar System and push through many strata of bureaucracy. The heads of the recently elected North American government became suddenly, fully aware of what had been going on.

Michael Blades was outside, overseeing the installation of a receptor, when his earplug buzzed. He thrust his chin against the tuning plate, switching from gang to interoffice band. "Mike?" said Avis Page's voice, "You're wanted up front."

"Now?" he objected. "Whatever for?"

"Courtesy visit from the NASS Altair. You've lost track of time, my boy."

"What the ... the jumping blue blazes are you talking about? We've had our courtesy visit. Jimmy and I both went over to pay our respects, and we had Rear Admiral Hulse here to dinner. What more do they expect, for Harry's sake?"

"Don't you remember? Since there wasn't room to entertain his officers, you promised to take them on a personal guided tour later. I made the appointment the very next watch. Now's the hour."

"Oh, yes, it comes back to me. Yeah. Hulse brought a magnum of champagne with him, and after so long a time drinking recycled water, my capacity was shot to pieces. I got a warm glow of good fellowship on, and offered—Let Jimmy handle it, I'm busy."

"The party's too large, he says. You'll have to take half of them. Their gig will dock in thirty minutes."

"Well, depute somebody else."

"That'd be rude, Mike. Have you forgotten how sensitive they are about rank at home?" Avis hesitated. "If what I believe about the mood back there is true, we can use the good will of high-level Navy personnel. And any other influential people in sight."

Blades drew a deep breath. "You're too blinking sensible. Remind me to fire you after I've made my first ten million bucks."

"What'll you do for your next ten million, then?" snipped his secretary-file clerk-confidante-adviser-et cetera.

"Nothing. I'll just squander the first."

"Goody! Can I help?"

"Uh ... I'll be right along." Blades switched off. His ears felt hot, as often of late when he tangled with Avis, and he unlimbered only a few choice oaths.

"Troubles?" asked Carlos Odonaju.

Blades stood a moment, looking around, before he answered. He was on the wide end of the Sword, which was shaped roughly like a truncated pyramid. Beyond him and his half dozen men stretched a vista of pitted rock, jutting crags, gulf-black shadows, under the glare of floodlamps. A few kilometers away, the farthest horizon ended, chopped off like a cliff. Beyond lay the stars, crowding that night which never ends. It grew very still while the gang waited for his word. He could listen to his own lungs and pulse, loud in the spacesuit; he could even notice its interior smell, blend of plastic and oxygen cycle chemicals, flesh and sweat. He was used to the sensation of hanging upside down on the surface, grip-soled boots holding him against that fractional gee by which the asteroid's rotation overcame its feeble gravity. But it came to him that this was an eerie bat-fashion way for an Oregon farm boy to stand.

Oregon was long behind him, though, not only the food factory where he grew up but the coasts where he had fished and the woods where he had tramped. No loss. There'd always been too many tourists. You couldn't escape from people on Earth. Cold and vacuum and raw rock and everything, the Belt was better. It annoyed him to be interrupted here.

Could Carlos take over as foreman? N-no, Blades decided, not yet. A gas receptor was an intricate piece of equipment. Carlos was a good man of his hands. Every one of the hundred-odd in the Station necessarily was. But
he hadn't done this kind of work often enough.

"I have to quit," Blades said. "Secure the stuff and report back to Buck Meyers over at the dock, the lot of you. His crew's putting in another recoil pier, as I suppose you know. They'll find jobs for you. I'll see you here again on your next watch."

* * * * *

He waved--being half the nominal ownership of this place didn't justify snobbery, when everyone must work together or die--and stepped off toward the nearest entry lock with that flowing spaceman's pace which always keeps one foot on the ground. Even so, he didn't unshackle his inward-reeling lifeline till he was inside the chamber.

On the way he topped a gaunt ridge and had a clear view of he balloons that were attached to the completed receptors. Those that were still full bulked enormous, like ghostly moons. The Jovian gases that strained their tough elastomer did not much blur the stars seen through them; but they swelled high enough to catch the light of the hidden sun and shimmer with it. The nearly discharged balloons hung thin, straining outward. Two full ones passed in slow orbit against the constellations. They were waiting to be hauled in and coupled fast, to release their loads into the Station's hungry chemical plant. But there were not yet enough facilities to handle them at once--and the Pallas Castle would soon be arriving with another--Blades found that he needed a few extra curses.

Having cycled through the air lock, he removed his suit and stowed it, also the heavy gloves which kept him from frostbite as he touched its space-cold exterior. Tastefully clad in a Navy surplus Long John, he started down the corridors.

Now that the first stage of burrowing within the asteroid had been completed, most passages went through its body, rather than being plastic tubes snaking across the surface. Nothing had been done thus far about facing them. They were merely shafts, two meters square, lined with doorways, ventilator grilles, and fluoropanels. They had no thermocoils. Once the nickel-iron mass had been sufficiently warmed up, the waste heat of man and his industry kept it that way. The dark, chipped-out tunnels throbbed with machine noises. Here and there a girlie picture or a sentimental landscape from Earth was posted. Men moved busily along them, bearing tools, instruments, supplies. They were from numerous countries, those men, though mostly North Americans, but they had acquired a likeness, a rangy leathery look and a free-swinging stride, that went beyond their colorful coveralls.

"Hi, Mike.... How's she spinning?... Hey, Mike, you heard the latest story about the Martian and the bishop?... Can you spare me a minute? We got troubles in the separator manifolds.... What's the hurry, Mike, your batteries overcharged?" Blades waved the hails aside. There was need for haste. You could move fast indoors, under the low weight which became lower as you approached the axis of rotation, with no fear of tumbling off. But it was several kilometers from the gas receptor end to the people end of the asteroid.

He rattled down a ladder and entered his cramped office out of breath. Avis Page looked up from her desk and wrinkled her freckled snub nose at him. "You ought to take a shower, but there isn't time," she said. "Here, use my antistinker." She threw him a spray cartridge with a deft motion. "I got your suit and beardex out of your cabin."

"Have I no privacy?" he grumbled, but grinned in her direction. She wasn't much to look at--not ugly, just small, brunette, and unspectacular--but she was a supernova of an assistant. Make somebody a good wife some day. He wondered why she hadn't taken advantage of the situation here to snaffle a husband. A dozen women, all but two of them married, and a hundred men, was a ratio even more lopsided than the norm in the Belt. Of course with so much work to do, and with everybody conscious of the need to maintain cordial relations, sex didn't get much chance to rear its lovely head. Still--

She smiled back with the gentleness that he found disturbing when he noticed it. "Shoo," she said. "Your guests will be here any minute. You're to meet them in Jimmy's office."

* * * * *

Blades ducked into the tiny washroom. He wasn't any 3V star himself, he decided as he smeared cream over his face: big, homely, red-haired. But not something you'd be scared to meet in a dark alley, either, he added smugly. In fact, there had been an alley in Aresopolis.... Things were expected to be going so smoothly by the time they approached conjunction with Mars that he could run over to that sinful ginful city for a vacation. Long overdue ... whooe! He wiped off his whiskers, shucked the zipskin, and climbed into the white pants and high-collared blue tunic that must serve as formal garb.

Emerging, he stopped again at Avis' desk. "Any message from the Pallas?" he asked.

"No," the girl said. "But she ought to be here in another two watches, right on sked. You worry too much, Mike."

"Somebody has to, and I haven't got Jimmy's Buddhist ride-with-the-punches attitude."

"You should cultivate it." She grew curious. The brown eyes lingered on him. "Worry's contagious. You make me fret about you."

"Nothing's going to give me an ulcer but the shortage of booze on this rock. Uh, if Bill Mbolo should call about
those catalysts while I'm gone, tell him--" He ran off a string of instructions and headed for the door.

Chung's hangout was halfway around the asteroid, so that one chief or the other could be a little nearer the scene of any emergency. Not that they spent much time at their desks. Shorthanded and undermechanized, they were forever having to help out in the actual construction. Once in a while Blades found himself harking wistfully back to his days as an engineer with Solar Metals: good pay, interesting if hazardous work on flying mountains where men had never trod before, and no further responsibilities. But most asterites had the dream of becoming their own bosses.

When he arrived, the Altair officers were already there, a score of correct young men in white dress uniforms. Short, squat, and placid looking, Jimmy Chung stood making polite conversation. "Ah, there," he said, "Lieutenant Ziska and gentlemen, my partner, Michael Blades, Mike, may I present--"

Blades' attention stopped at Lieutenant Ziska. He heard vaguely that she was the head quartermaster officer. But mainly she was tall and blond and blue-eyed, with a bewitching dimple when she smiled, and filled her gown the way a Cellini Venus doubtless filled its casting mold.

"Very pleased to meet you, Mr. Blades," she said as if she meant it. Maybe she did! He gulped for air.


"Oh. Sure. 'Scuse." Blades dropped Lieutenant Ziska's hand in reluctant haste. "Hardjado, C'mander Leibfraumilch."

Somehow the introductions were gotten through. "I'm sorry we have to be so inhospitable," Chung said, "but you'll see how crowded we are. About all we can do is show you around, if you're interested."

"Of course you're interested," said Blades to Lieutenant Ziska. "I'll show you some gimmicks I thought up myself."

Chung scowled at him. "We'd best divide the party and proceed along alternate routes," he said, "We'll meet again in the mess for coffee, Lieutenant Ziska, would you like to--"

"Come with me? Certainly," Blades said.

Chung's glance became downright murderous. "I thought--" he began.

"Sure." Blades nodded vigorously. "You being the senior partner, you'll take the highest ranking of these gentlemen, and I'll be in Scotland before you. C'mon, let's get started. May I?" He offered the quartermistress his arm. She smiled and took it. He supposed that eight or ten of her fellows trailed them.

* * * * *

The first disturbing note was sounded on the verandah.

They had glanced at the cavelike dormitories where most of the personnel lived; at the recreation dome topside which made the life tolerable; at kitchen, sick bay, and the other service facilities; at the hydroponic tanks and yeast vats which supplied much of the Station's food; at the tiny cabins scooped out for the top engineers and the married couples. Before leaving this end of the asteroid, Blades took his group to the verandah. It was a clear dome jutting from the surface, softly lighted, furnished as a primitive officers' lounge, open to a view of half the sky.

"Oh-h," murmured Ellen Ziska. Unconsciously she moved closer to Blades.

Young Lieutenant Commander Gilbertson gave her a somewhat jaundiced look. "You've seen deep space often enough before," he said.

"Through a port or a helmet." Her eyes glimmered enormous in the dusk. "Never like this."

The stars crowded close in their wintry myriads. The galactic belt glistened, diamond against infinite darkness. Vision toppled endlessly outward, toward the far mysterious shimmer of the Andromeda Nebula; silence was not a mere absence of noise, but a majestic presence, the seething of suns.

"What about the observation terrace at Leyburg?" Gilbertson challenged.

"That was different," Ellen Ziska said. "Everything was safe and civilized. This is like being on the edge of creation."

Blades could see why Goddard House had so long resisted the inclusion of female officers on ships of the line, despite political pressure at home and the Russian example abroad. He was glad they'd finally given in. Now if only he could build himself up as a dashing, romantic type ... But how long would the Altair stay? Her stopover seemed quite extended already, for a casual visit in the course of a routine patrol cruise. He'd have to work fast.

"Yes, we are pretty isolated," he said. "The Jupiter ships just unload their balloons, pick up the empties, and head right back for another cargo."

"I don't understand how you can found an industry here, when your raw materials only arrive at conjunction," Ellen said.

"Things will be different once we're in full operation," Blades assured her. "Then we'll be doing enough business to pay for a steady input, transhipped from whatever depot is nearest Jupiter at any given time."
"You've actually built this simply to process ... gas?" Gilbertson interposed. Blades didn't know whether he was being sarcastic or asking a genuine question. It was astonishing how ignorant Earthsiders, even space-traveling Earthsiders, often were about such matters.

"Jovian gas is rich stuff," he explained. "Chiefly hydrogen and helium, of course; but the scoopships separate out most of that during a pickup. The rest is ammonia, water, methane, a dozen important organics, including some of the damn ... doggonedest metallic complexes you ever heard of. We need them as the basis of a chemosynthetic industry, which we need for survival, which we need if we're to get the minerals that were the reason for colonizing the Belt in the first place." He waved his hand at the sky. "When we really get going, we'll attract settlement. This asteroid has companions, waiting for people to come and mine them. Homeships and orbital stations will be built. In ten years there'll be quite a little city clustered around the Sword."

"It's happened before," nodded tight-faced Commander Warburton of Gunnery Control.

"It's going to happen a lot oftener," Blades said enthusiastically. "The Belt's going to grow!" He aimed his words at Ellen. "This is the real frontier. The planets will never amount to much. It's actually harder to maintain human-type conditions on so big a mass, with a useless atmosphere around you, than on a lump in space like this. And the gravity wells are so deep. Even given nuclear power, the energy cost of really exploiting a planet is prohibitive. Besides which, the choice minerals are buried under kilometers of rock. On a metallic asteroid, you can find almost everything you want directly under your feet. No limit to what you can do."

"But your own energy expenditure--" Gilbertson objected.

"That's no problem." As if on cue, the worldlet's spin brought the sun into sight. Tiny but intolerably brilliant, it flooded the dome with harsh radiance. Blades lowered the blinds on that side. He pointed in the opposite direction, toward several sparks of equal brightness that had manifested themselves.

"Hundred-meter parabolic mirrors," he said. "Easy to make; you spray a thin metallic coat on a plastic backing. They're in orbit around us, each with a small geegee unit to control drift and keep it aimed directly at the sun. The focused radiation charges heavy-duty accumulators, which we then collect and use for our power source in all our mobile work."

"Do you mean you haven't any nuclear generator?" asked Warburton.

He seemed curiously intent about it. Blades wondered why, but nodded. "That's correct. We don't want one. Too dangerous for us. Nor is it necessary. Even at this distance from the sun, and allowing for assorted inefficiencies, a mirror supplies better than five hundred kilowatts, twenty-four hours a day, year after year, absolutely free."

"Hm-m-m. Yes." Warburton's lean head turned slowly about, to rake Blades with a look of calculation. "I understand that's the normal power system in Stations of this type. But we didn't know if it was used in your case, too."

Why should you care? Blades thought. He shoved aside his faint unease and urged Ellen toward the dome railing. "Maybe we can spot your ship, Lieutenant, uh, Miss Ziska. Here's a telescope. Let me see, her orbit ought to run about so...."

He hunted until the Altair swam into the viewfield. At this distance the spheroid looked like a tiny crescent moon, dully painted; but he could make out the sinister shapes of a rifle turret and a couple of missile launchers. "Have a look," he invited. Her hair tickled his nose, brushing past him. It had a delightful sunny odor.

"How small she seems," the girl said, with the same note of wonder as before. "And how huge when you're aboard."

Big, all right, Blades knew, and loaded to the hatches with nuclear hellfire. But not massive. A civilian spaceship carried meteor plating, but since that was about as useful as wet cardboard against modern weapons, warcraft sacrificed it for the sake of mobility. The self-sealing hull was thin magnesium, the outer shell periodically renewed as cosmic sand eroded it.

"I'm not surprised we orbited, instead of docking," Ellen remarked. "We'd have butted against your radar and bellied into your control tower."

"Well, actually, no," said Blades. "Even half finished, our dock's big enough to accommodate you, as you'll see today. Don't forget, we anticipate a lot of traffic in the future. I'm puzzled why you didn't accept our invitation to use it."

"Doctrine!" Warburton clipped.

The sun came past the blind and touched the officers' faces with incandescence. Did some look startled, one or two open their mouths as if to protest and then snap them shut again at a warning look? Blades' spine tingled. I never heard of any such doctrine, he thought, least of all when a North American ship drops in on a North American Station.
"Is ... er ... is there some international crisis brewing?" he inquired.
"Why, no." Ellen straightened from the telescope. "I'd say relations have seldom been as good as they are now. What makes you ask?"
"Well, the reason your captain didn't--"
"Never mind," Warburton said. "We'd better continue the tour, if you please."
Blades filed his misgivings for later reference. He might have fretted immediately, but Ellen Ziska's presence forbade that. A sort of Pauli exclusion principle. One can't have two spins simultaneously, can one? He gave her his arm again. "Let's go on to Central Control," he proposed. "That's right behind the people section."
"You know, I can't get over it," she told him softly. "This miracle you've wrought. I've never been more proud of being human."
"Is this your first long space trip?"
"Yes, I was stationed at Port Colorado before the new Administration reshuffled armed service assignments."
"They did? How come?"
"I don't know. Well, that is, during the election campaign the Social Justice Party did talk a lot about old-line officers who were too hidebound to carry out modern policies effectively. But it sounded rather silly to me."
Warburton compressed his lips. "I do not believe it is proper for service officers to discuss political issues publicly," he said like a machine gun.
Ellen flushed. "S-sorry, commander."
Blades felt a helpless anger on her account. He wasn't sure why. What was she to him? He'd probably never see her again. A hell of an attractive target, to be sure; and after so much celibacy he was highly vulnerable; but did she really matter?
He turned his back on Warburton and his eyes on her--a five thousand per cent improvement--and diverted her from her embarrassment by asking, "Are you from Colorado, then, Miss Ziska?"
"Oh, no. Toronto."
"How'd you happen to join the Navy, if I may make so bold?"
"Gosh, that's hard to say. But I guess mostly I felt so crowded at home. So, pigeonholed. The world seemed to be nothing but neat little pigeonholes."
"Uh-huh. Same here. I was also a square pigeon in a round hole." She laughed. "Luckily," he added, "Space is too big for compartments."
Her agreement lacked vigor. The Navy must have been a disappointment to her. But she couldn't very well say so in front of her shipmates.
Hm-m-m ... if she could be gotten away from them--"How long will you be here?" he inquired. His pulse thuttered.
"We haven't been told," she said.
"Some work must be done on the missile launchers," Warburton said. "That's best carried out here, where extra facilities are available if we need them. Not that I expect we will." He paused. "I hope we won't interfere with your own operations."
"Far from it." Blades beamed at Ellen. "Or, more accurately, this kind of interference I don't mind in the least."
She blushed and her eyelids fluttered. Not that she was a fluffhead, he realized. But to avoid incidents, Navy regulations enforced an inhuman correctness between personnel of opposite sexes. After weeks in the black, meeting a man who could pay a compliment without risking court-martial must be like a shot of adrenalin. Better and better!
"Are you sure?" Warburton persisted. "For instance, won't we be in the way when the next ship comes from Jupiter?"
"She'll approach the opposite end of the asteroid," Blades said. "Won't stay long, either."
"How long?"
"One watch, so the crew can relax a bit among those of us who're off duty. It'd be a trifle longer if we didn't happen to have an empty bag at the moment. But never very long. Even running under thrust the whole distance, Jupe's a good ways off. They've no time to waste."
"When is the next ship due?"
"The Pallas Castle is expected in the second watch from now."
"Second watch. I see." Warburton stalked on with a brooding expression on his Puritan face.

Blades might have speculated about that, but someone asked him why the Station depended on spin for weight. Why not put in an internal field generator, like a ship? Blades explained patiently that an Emett large enough to produce uniform pull through a volume as big as the Sword was rather expensive. "Eventually, when we're a few megabucks ahead of the game--"
"Do you really expect to become rich?" Ellen asked. Her tone was awed. No Earthsider had that chance any more, except for the great corporations. "Individually rich?"

"We can't fail to. I tell you, this is a frontier like nothing since the Conquistadores. We could very easily have been wiped out in the first couple of years--financially or physically--by any of a thousand accidents. But now we're too far along for that. We've got it made, Jimmy and I."

"What will you do with your wealth?"

"Live like an old-time sultan," Blades grinned. Then, because it was true as well as because he wanted to shine in her eyes: "Mostly, though, we'll go on to new things. There's so much that needs to be done. Not simply more asteroid mines. We need farms; timber; parks; passenger and cargo liners; every sort of machine. I'd like to try getting at some of that water frozen in the Saturnian System. Altogether, I see no end to the jobs. It's no good our depending on Earth for anything. Too expensive, too chancy. The Belt has to be made completely self-sufficient."

"With a nice rakeoff for Sword Enterprises," Gilbertson scoffed.

"Why, sure. Aren't we entitled to some return?"

"Yes. But not so out of proportion as the Belt companies seem to expect. They're only using natural resources that rightly belong to the people, and the accumulated skills and wealth of an entire society."

"Huh! The People didn't do anything with the Sword. Jimmy and I and our boys did. No Society was around here grubbing nickel-iron and riding out gravel storms; we were."

"Let's leave politics alone," Warburton snapped. But it was mostly Ellen's look of distress which shut Blades up.

To everybody's relief, they reached Central Control about then. It was a complex of domes and rooms, crammed with more equipment than Blades could put a name to. Computers were in Chung's line, not his. He wasn't able to answer all of Warburton's disconcertingly sharp questions.

But in a general way he could. Whirling through vacuum with a load of frail humans and intricate artifacts, the Sword must be at once machine, ecology, and unified organism. Everything had to mesh. A failure in the thermodynamic balance, a miscalculation in supply inventory, a few mirrors perturbed out of proper orbit, might spell Ragnarok. The chemical plant's purifications and syntheses were already a network too large for the human mind to grasp as a whole, and it was still growing. Even where men could have taken charge, automation was cheaper, more reliable, less risky of lives. The computer system housed in Central Control was not only the brain, but the nerves and heart of the Sword.

"Entirely cryotronic, eh?" Warburton commented. "That seems to be the usual practice at the Stations. Why?"

"The least expensive type for us," Blades answered. "There's no problem in maintaining liquid helium here."

Warburton's gaze was peculiarly intense. "Cryotronic systems are vulnerable to magnetic and radiation disturbances."

"Uh-huh. That's one reason we don't have a nuclear power plant. This far from the sun, we don't get enough emission to worry about. The asteroid's mass screens out what little may arrive. I know the TIMM system is used on ships; but if nothing else, the initial cost is more than we want to pay."

"What's TIMM?" inquired the Altair's chaplain.

"Thermally Integrated Micro-Miniaturized," Ellen said crisply. "Essentially, ultraminiaturized ceramic-to-metal-seal vacuum tubes running off thermionic generators. They're immune to gamma ray and magnetic pulses, easily shielded against particule radiation, and economical of power." She grinned. "Don't tell me there's nothing about them in Leviticus, Padre!"

"Very fine for a ship's autopilot," Blades agreed. "But as I said, we needn't worry about rad or mag units here, we don't mind sprawling a bit, and as for thermal efficiency, we want to waste some heat. It goes to maintain internal temperature."

"In other words, efficiency depends on what you need to effish," Ellen bantered. She grew grave once more and studied him for a while before she mused, "The same person who swung a pick, a couple of years ago, now deals with something as marvelous as this.... He forgot about worrying."

* * * * *

But he remembered later, when the gig had left and Chung called him to his office. Avis came too, by request. As she entered, she asked why.

"You were visiting your folks Earthside last year," Chung said. "Nobody else in the Station has been back as recently as that."

"What can I tell you?"

"I'm not sure. Background, perhaps. The feel of the place. We don't really know, out in the Belt, what's going on there. The beamcast news is hardly a trickle. Besides, you have more common sense in your left little toe than that big mick yonder has on his entire copperplated head."
They seated themselves in the cobwebby low-gee chairs around Chung's desk. Blades took out his pipe and filled the bowl with his tobacco ration for today. Wouldn't it be great, he thought dreamily, if this old briar turned out to be an Aladdin's lamp, and the smoke condensed into a blonde she-Canadian--?

"Wake up, will you?" Chung barked.

"Huh?" Blades started. "Oh. Sure. What's the matter? You look like a fish on Friday."

"Maybe with reason. Did you notice anything unusual with that party you were escorting?"

"Yes, indeed."

"What?"

"About one hundred seventy-five centimeters tall, yellow hair, blue eyes, and some of the smoothest fourth-order curves I ever--"

"Mike, stop that!" Avis sounded appalled. "This is serious."

"I agree. She'll be leaving in a few more watches."

The girl bit her lip. "You're too old for that mooncalf rot and you know it."

"Agreed again. I feel more like a bull." Blades made pawing motions on the desktop.

"There's a lady present," Chung said.

Blades saw that Avis had gone quite pale. "I'm sorry," he blurted. "I never thought ... I mean, you've always seemed like--"

"One of the boys," she finished for him in a brittle tone. "Sure. Forget it. What's the problem, Jimmy?"

Chung folded his hands and stared at them. "I can't quite define that," he answered, word by careful word. "Perhaps I've simply gone spacedizzy. But when we called on Admiral Hulse, and later when he called on us, didn't you get the impression of, well, wariness? Didn't he seem to be watching and probing, every minute we were together?"

"I wouldn't call him a cheerful sort," Blades nodded. "Stiff as molasses on Pluto. But I suppose ... supposed he's just naturally that way."

Chung shook his head. "It wasn't a normal standoffishness. You've heard me reminisce about the time I was on Vesta with the North American technical representative, when the Convention was negotiated."

"Yes, I've heard that story a few times," said Avis dryly.

"Remember, that was right after the Europa Incident. We'd come close to a space war--undeclared, but it would have been nasty. We were still close. Every delegate went to that conference cocked and primed."

"Hulse had the same manner."

A silence fell. Blades said at length, "Well, come to think of it, he did ask some rather odd questions. He seemed to twist the conversation now and then, so he could find things out like our exact layout, emergency doctrine, and so forth. It didn't strike me as significant, though."

"Nor me," Chung admitted. "Taken in isolation, it meant nothing. But these visitors today--Sure, most of them obviously didn't suspect anything untoward. But that Liebknecht, now. Why was he so interested in Central Control? Nothing new or secret there. Yet he kept asking for details like the shielding factor of the walls."

"So did Commander Warburton," Blades remembered. "Also, he wanted to know exactly when the Pallas is due, how long she'll stay ... hm-m-m, yes, whether we have any radio linkage with the outside, like to Ceres or even the nearest Commission base--"

"Did you tell him that we don't?" Avis asked sharply.

"Yes. Shouldn't I have?"

"It scarcely makes any difference," Chung said in a resigned voice. "As thoroughly as they went over the ground, they'd have seen what we do and do not have installed so far."

He leaned forward. "Why are they hanging around?" he asked. "I was handed some story about overhauling the missile system."

"Me, too," Blades said.

"But you don't consider a job complete till it's been tested. And you don't fire a test shot, even a dummy, this close to a Station. Besides, what could have gone wrong? I can't see a ship departing Earth orbit for a long cruise without everything being in order. And they didn't mention any meteorites, any kind of trouble, en route. Furthermore, why do the work here? The Navy yard's at Ceres. We can't spare them any decent amount of materials or tools or help."

Blades frowned. His own half-formulated doubts shouldered to the fore, which was doubly unpleasant after he'd been considering Ellen Ziska. "They tell me the international situation at home is O.K.," he offered.

Avis nodded. "What newsfaxes we get in the mail indicate as much," she said. "So why this hanky-panky?"

After a moment, in a changed voice: "Jimmy, you begin to scare me a little."
"I scare myself," Chung said.
"Every morning when you debeard," Blades said; but his heart wasn't in it. He shook himself and protested: "Damnation, they're our own countrymen. We're engaged in a lawful business. Why should they do anything to us?"
"Maybe Avis can throw some light on that," Chung suggested. The girl twisted her fingers together. "Not me," she said. "I'm no politician."
"But you were home not so long ago. You talked with people, read the news, watched the 3V. Can't you at least give an impression?"
"N-no--Well, of course the preliminary guns of the election campaign were already being fired. The Social Justice Party was talking a lot about ... oh, it seemed so ridiculous that I didn't pay much attention."
"They talked about how the government had been pouring billions and billions of dollars into space, while overpopulation produced crying needs in America's back yard," Chung said. "We know that much, even in the Belt. We know the appropriations are due to be cut, now the Essjays are in. So what?"
"We don't need a subsidy any longer," Blades remarked. "It'd help a lot, but we can get along without if we have to, and personally, I prefer that. Less government money means less government control."
"Sure," Avis said. "There was more than that involved, however. The Essjays were complaining about the small return on the investment. Not enough minerals coming back to Earth."
"Well, for Jupiter's sake," Blades exclaimed, "what do they expect? We have to build up our capabilities first."
"They even said, some of them, that enough reward never would be gotten. That under existing financial policies, the Belt would go in for its own expansion, use nearly everything it produced for itself and export only a trickle to America. I had to explain to several of my parents' friends that I wasn't really a socially irresponsible capitalist."
"Is that all the information you have?" Chung asked when she fell silent.
"I ... I suppose so. Everything was so vague. No dramatic events. More of an atmosphere than a concrete thing."

* * * * *
"Still, you confirm my own impression," Chung said. Blades jerked his undisciplined imagination back from the idea of a Thing, with bug eyes and tentacles, cast in reinforced concrete, and listened as his partner summed up:
"The popular feeling at home has turned against private enterprise. You can hardly call a corporate monster like Systemic Developments a private enterprise! The new President and Congress share that mood. We can expect to see it manifested in changed laws and regulations. But what has this got to do with a battleship parked a couple of hundred kilometers from us?"
"If the government doesn't want the asterites to develop much further--" Blades bit hard on his pipestem. "They must know we have a caviar mine here. They would hardly call a corporate monster like Systemic Developments a private enterprise! The new President and Congress share that mood. We can expect to see it manifested in changed laws and regulations. But what has this got to do with a battleship parked a couple of hundred kilometers from us?"
"But we're still a baby," Avis said. "We won't be important for years to come. Who'd have it in for a baby?"
"Besides, we're Americans, too," Chung said. "If that were a foreign ship, the story might be different--Wait a minute! Could they be thinking of establishing a new base here?"
"The Convention wouldn't allow," said Blades.
"Treaties can always be renegotiated, or even denounced. But first you have to investigate quietly, find out if it's worth your while."
"Hoo hah, what lovely money that'd mean!"
"And lovely bureaucrats crawling out of every file cabinet," Chung said grimly. "No, thank you. We'll fight any such attempt to the last lawyer. We've got a good basis, too, in our charter. If the suit is tried on Ceres, as I believe it has to be, we'll get a sympathetic court as well."
"Unless they ring in an Earthside judge," Avis warned.
"Yeah, that's possible. Also, they could spring proceedings on us without notice. We've got to find out in advance, so we can prepare. Any chance of pumping some of those officers?"
"'Fraid not," Avis said. "The few who'd be in the know are safely back on shipboard."
"We could invite 'em here individually," said Blades. "As a matter of fact, I already have a date with Lieutenant Ziska."
"What?" Avis' mouth fell open.
"Yep," Blades said complacently. "End of the next watch, so she can observe the Pallas arriving. I'm to fetch her on a scooter. He blew a fat smoke ring. "Look, Jimmy, can you keep everybody off the porch for a while then? Starlight, privacy, soft music on the piccolo--who knows what I might find out?"
"You won't get anything from her," Avis spat. "No secrets or, or anything."
"Still, I look forward to making the attempt. C'mon, pal, pass the word. I'll do as much for you sometime."
"Times like that never seem to come for me," Chung groaned.
"Oh, let him play around with his suicide blonde," Avis said furiously. "We others have work to do. I ... I'll tell
you what, Jimmy. Let's not eat in the mess tonight. I'll draw our rations and fix us something special in your cabin."
  
** * * * * *

A scooter was not exactly the ideal steed for a knight to convey his lady. It amounted to little more than three saddles and a locker, set atop an accumulator-powered gyrogravitic engine, sufficient to lift you off an asteroid and run at low acceleration. There were no navigating instruments. You locked the autopilot's radar-gravitic sensors onto your target object and it took you there, avoiding any bits of debris which might pass near; but you must watch the distance indicator and press the deceleration switch in time. If the 'pilot was turned off, free maneuver became possible, but that was a dangerous thing to try before you were almost on top of your destination. Stereoscopic vision fails beyond six or seven meters, and the human organism isn't equipped to gauge cosmic momenta.

Nevertheless, Ellen was enchanted. "This is like a dream," her voice murmured in Blades' earplug. "The whole universe, on every side of us. I could almost reach out and pluck those stars."

"You must have trained in powered spacesuits at the Academy," he said for lack of a more poetic rejoinder.

"Yes, but that's not the same. We had to stay near Luna's night side, to be safe from solar particles, and it bit a great chunk out of the sky. And then everything was so--regulated, disciplines--we did what we were ordered to do, and that was that. Here I feel free. You can't imagine how free." Hastily: "Do you use this machine often?"

"Well, yes, we have about twenty scooters at the Station. They're the most convenient way of flitting with a load: out to the mirrors to change accumulators, for instance, or across to one of the companion rocks where we're digging some ores that the Sword doesn't have. That kind of work." Blades would frankly rather have had her behind him on a motorskimmer, hanging on as they careened through a springtime countryside. He was glad when they reached the main forward air lock and debarked.

He was still gladder when the suits were off. Lieutenant Ziska in dress uniform was stunning, but Ellen in civvies, a fluffy low-cut blouse and close-fitting slacks, was a hydrogen blast. He wanted to roll over and pant, but settled for saying, "Welcome back" and holding her hand rather longer than necessary.

With a shy smile, she gave him a package. "I drew this before leaving," she said. "I thought, well, your life is so austere--"

"A demi of Sandeman," he said reverently. "I won't tell you you shouldn't have, but I will tell you you're a sweet girl."

"No, really." She flushed. "After we've put you to so much trouble."

"Let's go crack this," he said. "The Pallas has called in, but she won't be visible for a while yet."

** * * * * *

They made their way to the verandah, picking up a couple of glasses enroute. Bless his envious heart, Jimmy had warned the other boys off as requested. I hope Avis cooks him a Cordon Bleu dinner, Blades thought. Nice kid, Avis, if she'd quit trying to ... what? ... mother me? He forgot about her, with Ellen to seat by the rail.

The Milky Way turned her hair frosty and glowed in her eyes. Blades poured the port with much ceremony and raised his glass. "Here's to your frequent return," he said.

Her pleasure dwindled a bit. "I don't know if I should drink to that. We aren't likely to be back, ever."

"Drink anyway. Gling, glang, gloria!" The rims tinkled together. "After all," said Blades, "this isn't the whole universe. We'll both be getting around. See you on Luna?"

"Maybe."

He wondered if he was pushing matters too hard. She didn't look at ease. "Oh, well," he said, "if nothing else, this has been a grand break in the monotony for us. I don't wish the Navy ill, but if trouble had to develop, I'm thankful it developed here."

"Yes--"

"How's the repair work progressing? Slowly, I hope."

"I don't know."

"You should have some idea, being in QM."

"No supplies have been drawn."

Blades stiffened.

"What's the matter?" Ellen sounded alarmed.

"Huh?" A fine conspirator I make, if she can see my emotions on me in neon capitals! "Nothing. Nothing. It just seemed a little strange, you know. Not taking any replacement units."

"I understand the work is only a matter of making certain adjustments."

"Then they should've finished a lot quicker, shouldn't they?"

"Please," she said unhappily. "Let's not talk about it. I mean, there are such things as security regulations."

Blades gave up on that tack. But Chung's idea might be worth probing a little. "Sure," he said. "I'm sorry, I didn't mean to pry." He took another sip as he hunted for suitable words. A beautiful girl, a golden wine ... and vice
versa ... why couldn't he simply relax and enjoy himself? Did he have to go fretting about what was probably a perfectly harmless conundrum?... Yes. However, recreation might still combine with business.

"Permit me to daydream," he said, leaning close to her. "The Navy's going to establish a new base here, and the Altair will be assigned to it."

"Daydream indeed!" she laughed, relieved to get back to a mere flirtation. "Ever hear about the Convention of Vesta?"

"Treaties can be renegotiated," Blades plagiarized.

"What do we need an extra base for? Especially since the government plans to spend such large sums on social welfare. They certainly don't want to start an arms race besides."

* * * * *

Blades nodded. Jimmy's notion did seem pretty thin, he thought with a slight chill, and now I guess it's completely whiffed. Mostly to keep the conversation going, he shrugged and said, "My partner--and me, too, aside from the privilege of your company--wouldn't have wanted it anyhow. Not that we're unpatriotic, but there are plenty of other potential bases, and we'd rather keep government agencies out of here."

"Can you, these days?"

"Pretty much. We're under a new type of charter, as a private partnership. The first such charter in the Belt, as far as I know, though there'll be more in the future. The Bank of Ceres financed us. We haven't taken a nickel of federal money."

"Is that possible?"

"Just barely. I'm no economist, but I can see how it works. Money represents goods and labor. Hitherto those have been in mighty short supply out here. Government subsidies made up the difference, enabling us to buy from Earth. But now the asterites have built up enough population and industry that they have some capital surplus of their own, to invest in projects like this."

"Even so, frankly, I'm surprised that two men by themselves could get such a loan. It must be huge. Wouldn't the bank rather have lent the money to some corporation?"

"To tell the truth, we have friends who pulled wires for us. Also, it was done partly on ideological grounds. A lot of asterites would like to see more strictly home-grown enterprises, not committed to anyone on Earth. That's the only way we can grow. Otherwise our profits--our net production, that is--will continue to be siphoned off for the mother country's benefit."

"Well," Ellen said with some indignation, "that was the whole reason for planting asteroid colonies. You can't expect us to set you up in business, at enormous cost to ourselves--things we might have done at home--and get nothing but Ta' in return."

"Never fear, we'll repay you with interest," Blades said. "But whatever we make from our own work, over and above that, ought to stay here with us."

She grew angrier. "Your kind of attitude is what provoked the voters to elect Social Justice candidates."

"Nice name, that," mused Blades. "Who can be against social justice? But you know, I think I'll go into politics myself. I'll organize the North American Motherhood Party."

"You wouldn't be so flippant if you'd go see how people have to live back there."

"As bad as here? Whew!"

"Nonsense. You know that isn't true. But bad enough. And you aren't going to stick in these conditions. Only a few hours ago, you were bragging about the millions you intend to make."

"Millions and millions, if my strength holds out," leered Blades, thinking of the alley in Aresopolis. But he decided that that was then and Ellen was now, and what had started as a promising little party was turning into a dismal argument about politics.

"Let's not fight," he said. "We've got different orientations, and we'd only make each other mad. Let's discuss our next bottle instead ... at the Coq d'Or in Paris, shall we say? Or Mornaine's in New York."

She calmed down, but her look remained troubled. "You're right, we are different," she said low. "Isolated, living and working under conditions we can hardly imagine on Earth--and you can't really imagine our problems--yes, you're becoming another people. I hope it will never go so far that--No. I don't want to think about it." She drained her glass and held it out for a refill, smiling. "Very well, sir, when do you next plan to be in Paris?"

* * * * *

An exceedingly enjoyable while later, the time came to go watch the Pallas Castle maneuver in. In fact, it had somehow gotten past that time, and they were late; but they didn't hurry their walk aft. Blades took Ellen's hand; and she raised no objection. Schoolboyish, no doubt--however, he had reached the reluctant conclusion that for all his dishonorable intentions, this affair wasn't likely to go beyond the schoolboy stage. Not that he wouldn't keep trying.

As they glided through the refining and synthesizing section, which filled the broad half of the asteroid, the
noise of pumps and regulators rose until it throbbed in their bones. Ellen gestured at one of the pipes which crossed the corridor overhead. "Do you really handle that big a volume at a time?" she asked above the racket.

"No," he said. "Didn't I explain before? The pipe's thick because it's so heavily armored."

"I'm glad you don't use that dreadfully word 'cladded.' But why the armor? High pressure?"

"Partly. Also, there's an inertrans lining. Jupiter gas is hellishly reactive at room temperature. The metallic complexes especially; but think what a witch's brew the stuff is in every respect. Once it's been refined, of course, we have less trouble. That particular pipe is carrying it raw."

They left the noise behind and passed on to the approach control dome at the receptor end. The two men on duty glanced up and immediately went back to their instruments. Radio voices were staccato in the air. Blades led Ellen to an observation port.

She drew a sharp breath. Outside, the broken ground fell away to space and the stars. The ovoid that was the ship hung against them, lit by the hidden sun, a giant even at her distance but dwarfed by the balloon she towed. As that bubble tried ponderously to rotate, rainbow gleams ran across it, hiding and then revealing the constellations. Here, on the asteroid's axis, there was no weight, and one moved with underwater smoothness, as if disembodied.

"Oh, a fairy tale," Ellen sighed.

Four sparks flashed out of the boat blisters along the ship's hull. "Scoopships," Blades told her. "They haul the cargo in, being so much more maneuverable. Actually, though, the mother vessel is going to park her load in orbit, while those boys bring in another one ... see, there it comes into sight. We still haven't got the capacity to keep up with our deliveries."

"How many are there? Scoopships, that is."

"Twenty, but you don't need more than four for this job. They've got terrific power. Have to, if they're to dive from orbit down into the Jovian atmosphere, ram themselves full of gas, and come back. There they go."

The Pallas Castle was wrestling the great sphere she had hauled from Jupiter into a stable path computed by Central Control. Meanwhile the scoopships, small only by comparison with her, locked onto the other balloon as it drifted close. Energy poured into their drive fields. Spiraling downward, transparent globe and four laboring spacecraft vanished behind the horizon. The Pallas completed her own task, disengaged her towbars, and dropped from view, headed for the dock.

The second balloon rose again, like a huge glass moon on the opposite side of the Sword. Still it grew in Ellen's eyes, kilometer by kilometer of approach. So much mass wasn't easily handled, but the braking curve looked disdainfully smooth. Presently she could make out the scoopships in detail, elongated teardrops with the intake gates yawning in the blunt forward end, cockpit canopies raised very slightly above.

Instructions rattled from the men in the dome. The balloon veered clumsily toward the one free receptor. A derricklike structure released one end of a cable, which streamed skyward. Things that Ellen couldn't quite follow in this tricky light were done by the four tugs, mechanisms of their own extended to make their tow fast to the cable.

They did not cast loose at once, but continued to drag a little, easing the impact of centrifugal force. Nonetheless a slight shudder went through the dome as slack was taken up. Then the job was over. The scoopships let go and flitted off to join their mother vessel. The balloon was winched inward. Spacesuited men moved close, preparing to couple valves together.

"And eventually," Blades said into the abrupt quietness, "that cargo will become food, fabric, vitryl, plastiboard, reagents, fuels, a hundred different things. That's what we're here for."

"I've never seen anything so wonderful," Ellen said raptly. He laid an arm around her waist.

The intercom chose that precise moment to blare: "Attention! Emergency! All hands to emergency stations! Blades, get to Chung's office on the double! All hands to emergency stations!"

Blades was running before the siren had begun to howl.

Rear Admiral Barclay Hulse had come in person. He stood as if on parade, towering over Chung. The asterite was red with fury. Avis Page crouched in a corner, her eyes terrified.

Blades barreled through the doorway and stopped hardly short of a collision. "What's the matter?" he puffed.

"Plenty!" Chung snarled. "These incredible thumble-fumbled oafs--" His voice broke. When he gets mad, it means something!

Hulse nailed Blades with a glance. "Good day, sir," he clipped. "I have had to report a regrettable accident which will require you to evacuate the Station. Temporarily, I hope."

"Huh?"

"As I told Mr. Chung and Miss Page, a nuclear missile has escaped us. If it explodes, the radiation will be lethal, even in the heart of the asteroid."

"What ... what--" Blades could only gobble at him.

"Fortunately, the Pallas Castle is here. She can take your whole complement aboard and move to a safe distance
while we search for the object."

"How the devil?"

Hulse allowed himself a look of exasperation. "Evidently I'll have to repeat myself to you. Very well. You know we have had to make some adjustments on our launchers. What you did not know was the reason. Under the circumstances, I think it's permissible to tell you that several of them have a new and secret, experimental control system. One of our missions on this cruise was to carry out field tests. Well, it turned out that the system is still full of, ah, bugs. Gunnery Command has had endless trouble with it, has had to keep tinkering the whole way from Earth.

"Half an hour ago, while Commander Warburton was completing a reassembly--lower ranks aren't allowed in the test turrets--something happened. I can't tell you my guess as to what, but if you want to imagine that a relay got stuck, that will do for practical purposes. A missile was released under power. Not a dummy--the real thing. And release automatically arms the war head."

* * * * *

The news was like a hammerblow. Blades spoke an obscenity. Sweat sprang forth under his arms and trickled down his ribs.

"No such thing was expected," Hulse went on. "It's an utter disaster, and the designers of the system aren't likely to get any more contracts. But as matters were, no radar fix was gotten on it, and it was soon too far away for gyrogravitic pulse detection. The thrust vector is unknown. It could be almost anywhere now.

"Well, naval missiles are programmed to reverse acceleration if they haven't made a target within a given time. This one should be back in less than six hours. If it first detects our ship, everything is all right. It has optical recognition circuits that identify any North American warcraft by type, disarm the war head, and steer it home. But, if it first comes within fifty kilometers of some other mass--like this asteroid or one of the companion rocks--it will detonate. We'll make every effort to intercept, but space is big. You'll have to take your people to a safe distance. They can come back even after a blast, of course. There's no concussion in vacuum, and the fireball won't reach here. It's principally an anti-personnel weapon. But you must not be within the lethal radius of radiation."

"'The hell we can come back!' Avis cried.

"I beg your pardon?" Hulse said.

"You imbecile! Don't you know Central Control here is cryotronic?"

Hulse did not flicker an eyelid. "So it is," he said expressionlessly. "I had forgotten."

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Blades mastered his own shock enough to grate: "Well, we sure haven't. If that thing goes off, the gamma burst will kick up so many minority carriers in the transistors that the p-type crystals will act n-type, and the n-type act p-type, for a whole couple of microseconds. Every one of 'em will flip simultaneously! The computers' memory and program data systems will be scrambled beyond hope of reorganization."

"Magnetic pulse, too," Chung said. "The fireball plasma will be full of inhomogeneities moving at several per cent of light speed. Their electromagnetic output, hitting our magnetic core units, will turn them from super to ordinary conduction. Same effect, total computer amnesia. We haven't got enough shielding against it. Your TIMM systems can take that kind of a beating. Ours can't!"

"Very regrettable," Hulse said. "You'd have to reprogram everything--"

"Reprogram what?" Avis retorted. Tears started forth in her eyes. "We've told you what sort of stuff our chemical plant is handling. We can't shut it down on that short notice. It'll run wild. There'll be sodium explosions, hydrogen and organic combustion, n-n-nothing left here but wreckage!"

Hulse didn't unbend a centimeter. "I offer my most sincere apologies. If actual harm does occur, I'm sure the government will indemnify you. And, of course, my command will furnish what supplies may be needed for the Pallas Castle to transport you to the nearest Commission base. At the moment, though, you can do nothing but evacuate and hope we will be able to intercept the missile."

Blades knotted his fists. A sudden comprehension rushed up in him and he bellowed, "There isn't going to be an interception! This wasn't an accident!"

Hulse backed a step and drew himself even straighter. "Don't get overwrought," he advised.

"You louse-bitten, egg-sucking, bloated faggot-porter! How stupid do you think we are? As stupid as your Essjay bosses? By heaven, we're staying! Then see if you have the nerve to murder a hundred people!"

"Mike ... Mike--" Avis caught his arm.

Hulse turned to Chung. "I'll overlook that unseemly outburst," he said. "But in light of my responsibilities and under the provisions of the Constitution, I am hereby putting this asteroid under martial law. You will have all personnel aboard the Pallas Castle and at a minimum distance of a thousand kilometers within four hours of this moment, or be subject to arrest and trial. Now I have to get back and commence operations. The Altair will maintain
radio contact with you. Good day.” He bowed curtly, spun on his heel, and clacked from the room.

Blades started to charge after him. Chung caught his free arm. Together he and Avis dragged him to a stop. He stood cursing the air ultraviolet until Ellen entered.

“I couldn't keep up with you,” she panted. “What's happened, Mike?”

The strength drained from Blades. He slumped into a chair and covered his face.

* * * * *

Chung explained in a few harsh words. "Oh-h-h," Ellen gasped. She went to Blades and laid her hands on his shoulders. "My poor Mike!"

After a moment she looked at the others. "I should report back, of course," she said, "but I won't be able to before the ship accelerates. So I'll have to stay with you till afterward. Miss Page, we left about half a bottle of wine on the verandah. I think it would be a good idea if you went and got it."

Avis bridled. "And why not you?"

"This is no time for personalities," Chung said. "Go on, Avis. You can be thinking what records and other paper we should take, while you're on your way. I've got to organize the evacuation. As for Miss Ziska, well, Mike needs somebody to pull him out of his dive."

"Her?" Avis wailed, and fled.

Chung sat down and flipped his intercom to Phone Central. "Get me Captain Janichevski aboard the Pallas," he ordered. "Hello, Adam? About that general alarm--"

Blades raised a haggard countenance toward Ellen's. "You better clear out, along with the women and any men who don't want to stay," he said. "But I think most of them will take the chance. They're on a profit-sharing scheme, they stand to lose too much if the place is ruined."

"What do you mean?"

"It's a gamble, but I don't believe Hulse's sealed orders extend to murder. If enough of us stay put, he'll have to catch that thing. He jolly well knows its exact trajectory."

"You forget we're under martial law," Chung said, aside to him. "If we don't go freely, he'll land some PP's and march us off at gunpoint. There isn't any choice. We've had the course."

"I don't understand," Ellen said shakily.

Chung went back to his intercom. Blades fumbled out his pipe and rolled it empty between his hands. "That missile was shot off on purpose," he said.

"What? No, you must be sick, that's impossible!"

"I realize you didn't know about it. Only three or four officers have been told. The job had to be done very, very secretly, or there'd be a scandal, maybe an impeachment. But it's still sabotage."

She shrank from him. "You're not making sense."

"Their own story doesn't make sense. It's ridiculous. A new missile system wouldn't be sent on a field trial clear to the Belt before it'd had enough tests closer to home to get the worst bugs out. A war-head missile wouldn't be stashed anywhere near something so unreliable, let alone be put under its control. The testing ship wouldn't hang around a civilian Station while her gunnery chief tinkered. And Hulse, Warburton, Liebknecht, they were asking in such detail about how radiation-proof we are."

"I can't believe it. Nobody will."

"Not back home. Communication with Earth is so sparse and garbled. The public will only know there was an accident; who'll give a hoot about the details? We couldn't even prove anything in an asteroid court. The Navy would say, 'Classified information!' and that'd stop the proceedings cold. Sure, there'll be a board of inquiry--composed of naval officers. Probably honorable men, too. But what are they going to believe, the sworn word of their Goddard House colleague, or the rantings of an asterite bum?"

"Mike, I know this is terrible for you, but you've let it go to your head." Ellen laid a hand over his. "Suppose the worst happens. You'll be compensated for your loss."

"Yeah. To the extent of our personal investment. The Bank of Ceres still has nearly all the money that was put in. We didn't figure to have them paid off for another ten years. They, or their insurance carrier, will get the indemnity. And after our fiasco, they won't make us a new loan. They were just barely talked into it, the first time around. I daresay Systemic Developments will make them a nice juicy offer to take this job over."

Ellen colored. She stamped her foot. "You're talking like a paranoiac. Do you really believe the government of North America would send a battleship clear out here to do you dirt?"

"Not the whole government. A few men in the right positions is all that's necessary. I don't know if Hulse was bribed or talked into this. But probably he agreed as a duty. He's the prim type."

"A duty--to destroy a North American business?"

* * * * *
Chung finished at the intercom in time to answer: "Not permanent physical destruction, Miss Ziska. As Mike suggested, some corporation will doubtless inherit the Sword and repair the damage. But a private, purely asterite business... yes, I'm afraid Mike's right. We are the target."

"In mercy's name, why?"

"From the highest motives, of course," Chung sneered bitterly. "You know what the Social Justice Party thinks of private capitalism. What's more important, though, is that the Sword is the first Belt undertaking not tied to Mother Earth's apron strings. We have no commitments to anybody back there. We can sell our output wherever we like. It's notorious that the asterites are itching to build up their own self-sufficient industries. Quite apart from sentiment, we can make bigger profits in the Belt than back home, especially when you figure the cost of sending stuff in and out of Earth's gravitational well. So certainly we'd be doing most of our business out here.

"Our charter can't simply be revoked. First a good many laws would have to be revised, and that's politically impossible. There is still a lot of individualist sentiment in North America, as witness the fact that businesses do get launched and that the Essjays did have a hard campaign to get elected. What the new government wants is something like the Eighteenth Century English policy toward America. Keep the colonies as a source of raw materials and as a market for manufactured goods, but don't let them develop a domestic industry. You can't come right out and say that, but you can let the situation develop naturally.

"Only... here the Sword is, obviously bound to grow rich and expand in every direction. If we're allowed to develop, to reinvest our profits, we'll become the nucleus of independent asterite enterprise. If, on the other hand, we're wiped out by an unfortunate accident, there's no nucleus; and a small change in the banking laws is all that's needed to prevent others from getting started. Q.E.D."

"I daresay Hulse does think he's doing his patriotic duty," said Blades. "He wants to guarantee North America our natural resources--in the long run, maybe, our allegiance. If he has to commit sabotage, too bad, but it won't cost him any sleep."

"No!" Ellen almost screamed.

Chung sagged in his chair. "We're very neatly trapped," he said like an old man. "I don't see any way out. Think you can get to work now, Mike? You can assign group leaders for the evacuation--"

Blades jumped erect. "I can fight!" he growled.

"With what? Can openers?"

"You mean you're going to lie down and let them break us?"

Avis came back. She thrust the bottle into Blades' hands as he paced the room. "Here you are," she said in a distant voice.

He held it out toward Ellen. "Have some," he invited.

"Not with you... you subversive!"

Avis brightened noticeably, took the bottle and raised it. "Then here's to victory," she said, drank, and passed it to Blades.

He started to gulp; but the wine was too noble, and he found himself savoring its course down his throat. Why, he thought vaguely, do people always speak with scorn about Dutch courage? The Dutch have real guts. They fought themselves free of Spain and free of the ocean itself; when the French or Germans came, they made the enemy sea their ally--

The bottle fell from his grasp. In the weak acceleration, it hadn't hit the floor when Avis rescued it. "Gimme that, you big butterfingers," she exclaimed. Her free hand clasped his arm. "Whatever happens, Mike," she said to him, "we're not quitting."

Still Blades stared beyond her. His fists clenched and unclenched. The noise of his breathing filled the room.

Chung looked around in bewilderment; Ellen watched with waxing horror; Avis' eyes kindled.

"Holy smoking seegars," Blades whispered at last. "I really think we can swing it."

Captain Janichevski recoiled. "You're out of your skull!"

"Probably," said Blades. "Fun, huh?"

"You can't do this."

"We can try."

"Do you know what you're talking about? Insurrection, that's what. Quite likely piracy. Even if your scheme worked, you'd spend the next ten years in Rehab--at least."

"Maybe, provided the matter ever came to trial. But it won't."

"That's what you think. You're asking me to compound the felony, and misappropriate the property of my owners to boot." Janichevski shook his head. "Sorry, Mike. I'm sorry as hell about this mess. But I won't be party to making it worse."

"In other words," Blades replied, "you'd rather be party to sabotage. I'm proposing an act of legitimate self-
"If there actually is a conspiracy to destroy the Station."

"Adam, you're a spaceman. You know how the Navy operates. Can you swallow that story about a missile getting loose by accident?"

Janichevski bit his lip. The sounds from outside filled the captain's cabin, voices, footfalls, whirr of machines and clash of doors, as the Pallas Castle readied for departure. Blades waited.

"You may be right," said Janichevski at length, wretchedly. "Though why Hulse should jeopardize his career--"

"He's not. There's a scapegoat groomed back home, you can be sure. Like some company that'll be debarred from military contracts for a while ... and get nice fat orders in other fields. I've kicked around the System enough to know how that works."

"If you're wrong, though ... if this is an honest blunder ... then you risk committing treason."

"Yeah. I'll take the chance."

"Not I. No. I've got a family to support," Janichevski said.

Blades regarded him bleakly. "If the Essjays get away with this stunt, what kind of life will your family be leading, ten years from now? It's not simply that we'll be high-class peons in the Belt. But tied hand and foot to a shortsighted government, how much progress will we be able to make? Other countries have colonies out here too, remember, and some of them are already giving their people a freer hand than we've got. Do you want the Asians, or the Russians, or even the Europeans, to take over the asteroids?"

"I can't make policy."

"In other words, mama knows best. Believe, obey, anything put out by some bureaucrat who never set foot beyond Luna. Is that your idea of citizenship?"

"You're putting a mighty fine gloss on bailing yourself out!" Janichevski flared.

"Sure, I'm no idealist. But neither am I a slave," Blades hesitated. "We've been friends too long, Adam, for me to try bribing you. But if worst comes to worst, we'll cover for you ... somehow ... and if contrariwise we win, then we'll soon be hiring captains for our own ships and you'll get the best offer any spaceman ever got."

"No. Scram. I've work to do."

Blades braced himself. "I didn't want to say this. But I've already informed a number of my men. They're as mad as I am. They're waiting in the terminal. A monkey wrench or a laser torch makes a pretty fair weapon. We can take over by force. That'll leave you legally in the clear. But with so many witnesses around, you'll have to prefer charges against us later on."

Janichevski began to sweat.

"We'll be sent up," said Blades. "But it will still have been worth it."

"Is it really that important to you?"

"Yes. I admit I'm no crusader. But this is a matter of principle."

Janichevski stared at the big red-haired man for a long while. Suddenly he stiffened. "O.K. On that account, and no other, I'll go along with you."

Blades wobbled on his feet, near collapse with relief. "Good man!" he croaked.

"But I will not have any of my officers or crew involved."

Blades rallied and answered briskly, "You needn't. Just issue orders that my boys are to have access to the scoopships. They can install the equipment, jockey the boats over to the full balloons, and even couple them on."

Janichevski's fears had vanished once he made his decision, but now a certain doubt registered. "That's a pretty skilled job."

"These are pretty skilled men. It isn't much of a maneuver, not like making a Jovian sky dive."

"Well, O.K., I'll take your word for their ability. But suppose the Altair spots those boats moving around?"

"She's already several hundred kilometers off, and getting farther away, running a search curve which I'm betting my liberty--and my honor; I certainly don't want to hurt my own country's Navy--I'm betting that search curve is guaranteed not to find the missile in time. They'll spot the Pallas as you depart--oh, yes, our people will be aboard as per orders--but no finer detail will show in so casual an observation."

"Again, I'll take your word. What else can I do to help?"

"Nothing you weren't doing before. Leave the piratics to us. I'd better get back." Blades extended his hand. "I haven't got the words to thank you, Adam."

Janichevski accepted the shake. "No reason for thanks. You dragooned me." A grin crossed his face. "I must confess though, I'm not sorry you did."

Blades left. He found his gang in the terminal, two dozen engineers and rockjacks clumped tautly together. "What's the word?" Carlos Odonaju shouted.
"Clear track," Blades said. "Go right aboard."
"The idea is to prevent destruction," Blades reminded him, and proceeded toward the office.
Avis met him in Corridor Four. Her freckled countenance was distorted by a scowl. "Hey, Mike, wait a minute," she said, low and hurriedly. "Have you seen La Ziska?"
"The lieutenant? Why, no. I left her with you, remember, hoping you could calm her down."
"Uh-huh. She was incandescent mad. Called us a pack of bandits and--But then she started crying. Seemed to break down completely. I took her to your cabin and went back to help Jimmy. Only, when I checked there a minute ago, she was gone."
"What? Where?"
"How should I know? But that she-devil's capable of anything to wreck our chances."
"You're not being fair to her. She's got an oath to keep."
"All right," said Avis sweetly. "Far be it from me to prevent her fulfilling her obligations. Afterward she may even write you an occasional letter. I'm sure that'll brighten your Rehab cell no end."
"What can she do?" Blades argued, with an uneasy sense of whistling in the dark. "She can't get off the asteroid without a scooter, and I've already got Sam's gang working on all the scooters."
"Is there no other possibility? The radio shack?"
"With a man on duty there. That's out." Blades patted the girl's arm.
"O.K., I'll get back to work. But ... I'll be so glad when this is over, Mike!"
Looking into the desperate brown eyes, Blades felt a sudden impulse to kiss their owner. But no, there was too much else to do. Later, perhaps. He cocked a thumb upward. "Carry on."

Too bad about Ellen, he thought as he continued toward his office. What an awful waste, to make a permanent enemy of someone with her kind of looks. And personality--Come off that stick, you clabberhead! She's probably the marryin' type anyway.

In her shoes, though, what would I do? Not much; they'd pinch my feet. But--damnation, Avis is right. She's not safe to have running around loose. The radio shack? Sparks is not one of the few who've been told the whole story and co-opted into the plan. She could--

Blades cursed, whirled, and ran.

His way was clear. Most of the men were still in their dorms, preparing to leave. He traveled in huge low-gravity leaps.

The radio shack rose out of the surface near the verandah. Blades tried the door. It didn't budge. A chill went through him. He backed across the corridor and charged. The door was only plastiboard--

He hit with a thud and a grunt, and rebounded with a numbed shoulder. But it looked so easy for the cops on 3V!

No time to figure out the delicate art of forcible entry. He hurled himself against the panel, again and again, heedless of the pain that struck in flesh and bone. When the door finally, splinteringly gave way, he stumbled clear across the room beyond, fetched up against an instrument console, recovered his balance, and gaped.

The operator lay on the floor, swearing in a steady monotone. He had been efficiently bound with his own blouse and trousers, which revealed his predilection for maroon shorts with zebra stripes. There was a lump on the back of his head, and a hammer lay close by. Ellen must have stolen the tool and come in here with the thing behind her back. The operator would have had no reason to suspect her.

She had not left the sender's chair, not even while the door was under attack. Only a carrier beam connected the Sword with the Altair. She continued doggedly to fumble with dials and switches, trying to modulate it and raise the ship.

"Praises be ... you haven't had advanced training ... in radio," Blades choked. "That's ... a long-range set ... pretty special system--" He weaved toward her. "Come along, now."

She spat an unladylike refusal.

Theoretically, Blades should have enjoyed the tussle that followed. But he was in poor shape at the outset. And he was a good deal worse off by the time he got her pinned.

"O.K.," he wheezed. "Will you come quietly?"

She didn't deign to answer, unless you counted her butting him in the nose. He had to yell for help to frog-march her aboard ship.

* * * * *

"Pallas Castle calling NASS Altair. Come in, Altair."

The great ovoid swung clear in space, among a million cold stars. The asteroid had dwindled out of sight. A radio beam flickered across emptiness. Within the hull, the crew and a hundred refugees sat jammed together. The
air was thick with their breath and sweat and waiting.

Blades and Chung, seated by the transmitter, felt another kind of thickness, the pull of the internal field. Earth-normal weight dragged down every movement; the enclosed cabin began to feel suffocatingly small. We'd get used to it again pretty quickly, Blades thought. Our bodies would; that is. But our own selves, tied down to Earth forever-no.

The vision screen jumped to life. "NASS Altair acknowledging Pallas Castle," said the uniformed figure within. "O.K., Charlie, go outside and don't let anybody else enter," Chung told his own operator.

The spaceman gave him a quizzical glance, but obeyed. "I wish to report that evacuation of the Sword is now complete," Chung said formally.

"Very good, sir," the Navy face replied. "I'll inform my superiors."
"Wait, don't break off yet. We have to talk with your captain."
"Sir? I'll switch you over to--"

"None of your damned chains of command," Blades interrupted. "Get me Rear Admiral Hulse direct, toot sweet, or I'll eat out whatever fraction of you he leaves unchewed. This is an emergency. I've got to warn him of an immediate danger only he can deal with."

The other stared, first at Chung's obvious exhaustion, then at the black eye and assorted bruises, scratches, and bites that adorned Blades' visage. "I'll put the message through Channel Red at once, sir." The screen blanked.

"Well, here we go," Chung said. "I wonder how the food in Rehab is these days."
"Want me to do the talking?" Blades asked. Chung wasn't built for times as hectic as the last few hours, and was worn to a nubbin. He himself felt immensely keyed up. He'd always liked a good fight.

"Sure." Chung pulled a crumpled cigarette from his pocket and began to fill the cabin with smoke. "You have a larger stock of rudeness than I."

Presently the screen showed Hulse, rigid at his post on the bridge. "Good day, gentlemen," he said. "What's the trouble?"

"Plenty," Blades answered. "Clear everybody else out of there; let your ship orbit free a while. And seal your circuit."

Hulse reddened. "Who do you think you are?"
"Well, my birth certificate says Michael Joseph Blades. I've got some news for you concerning that top-secret gadget you told us about. You wouldn't want unauthorized personnel listening in."

Hulse leaned forward till he seemed about to fall through the screen. "What's this about a hazard?"
"Fact. The Altair is in distinct danger of getting blown to bits."

"Have you gone crazy? Get me the captain of the Pallas."
"Very small bits."

Hulse compressed his lips. "All right, I'll listen to you for a short time. You had better make it worth my while."

He spoke orders. Blades scratched his back while he waited for the bridge to be emptied and wondered if there was any chance of a hot shower in the near future.

"Done," said Hulse. "Give me your report."

Blades glanced at the telltale. "You haven't sealed your circuit, admiral."

Hulse said angry words, but complied. "Now will you talk?"
"Sure. This secrecy is for your own protection. You risk court-martial otherwise."

Hulse suppressed a retort.

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"O.K., here's the word." Blades met the transmitted glare with an almost palpable crash of eyeballs. "We decided, Mr. Chung and I, that any missile rig as haywire as yours represents a menace to navigation and public safety. If you can't control your own nuclear weapons, you shouldn't be at large. Our charter gives us local authority as peace officers. By virtue thereof and so on and so forth, we ordered certain precautionary steps taken. As a result, if that war head goes off, I'm sorry to say that NASS Altair will be destroyed."

"Are you ... have you--" Hulse congealed. In spite of everything, he was a competent officer, Blades decided. "Please explain yourself," he said without tone.

"Sure," Blades obliged. "The Station hasn't got any armament, but trust the human race to juryrig that. We commandeered the scoopships belonging to this vessel and loaded them with Jovian gas at maximum pressure. If your missile detonates, they'll dive on you."

Something like amusement tinged Hulse's shocked expression. "Do you seriously consider that a weapon?"
"I seriously do. Let me explain. The ships are orbiting free right now, scattered through quite a large volume of space. Nobody's aboard them. What is aboard each one, though, is an autopilot taken from a scooter, hooked into the
drive controls. Each 'pilot has its sensors locked onto your ship. You can't maneuver fast enough to shake off radar beams and mass detectors. You're the target object, and there's nothing to tell those idiot computers to decelerate as they approach you.

"Of course, no approach is being made yet. A switch has been put in every scooter circuit, and left open. Only the meteorite evasion units are operative right now. That is, if anyone tried to lay alongside one of those scoopships, he'd be detected and the ship would skitter away. Remember, a scoopship hasn't much mass, and she does have engines designed for diving in and out of Jupe's gravitational well. She can out-accelerate either of our vessels, or any boat of yours, and out-dodge any of your missiles. You can't catch her."

Hulse snorted. "What's the significance of this farce?"

"I said the autopilots were switched off at the moment, as far as heading for the target is concerned. But each of those switches is coupled to two other units. One is simply the sensor box. If you withdraw beyond a certain distance, the switches will close. That is, the 'pilots will be turned on if you try to go beyond range of the beams now locked onto you. The other unit we've installed in every boat is an ordinary two-for-a-dollar radiation meter. If a nuclear weapon goes off, anywhere within a couple of thousand kilometers, the switches will also close. In either of those cases, the scoopships will dive on you.

"You might knock out a few with missiles, before they strike. Undoubtedly you can punch holes in them with laser guns. But that won't do any good, except when you're lucky enough to hit a vital part. Nobody's aboard to be killed. Not even much gas will be lost, in so short a time.

"So to summarize, chum, if that rogue missile explodes, your ship will be struck by ten to twenty scoopships, each crammed full of concentrated Jovian air. They'll pierce that thin hull of yours, but since they're already pumped full beyond the margin of safety, the impact will split them open and the gas will whoosh out. Do you know what Jovian air does to substances like magnesium?

"You can probably save your crew, take to the boats and reach a Commission base. But your nice battleship will be ganz kaput. Is your game worth that candle?"

"You're totally insane! Releasing such a thing--"

"Oh, not permanently. There's one more switch on each boat, connected to the meteorite evasion unit and controlled by a small battery. When those batteries run down, in about twenty hours, the 'pilots will be turned off completely. Then we can spot the scoopships by radar and pick 'em up. And you'll be free to leave."

"Do you think for one instant that your fantastic claim of acting legally will stand up in court?"

"No, probably not. But it won't have to. Obviously you can't make anybody swallow your yarn if a second missile gets loose. And as for the first one, since it's failed in its purpose, your bosses aren't going to want the matter publicized. It'd embarrass them to no end, and serve no purpose except revenge on Jimmy and me--which there's no point in taking, since the Sword would still be privately owned. You check with Earth, admiral, before shooting off your mouth. They'll tell you that both parties to this quarrel had better forget about legal action. Both would lose.

"So I'm afraid your only choice is to find that missile before it goes off."

"And yours? What are your alternatives?" Hulse had gone gray in the face, but he still spoke stoutly.

Blades grinned at him. "None whatsoever. We've burned our bridges. We can't do anything about those scoopships now, so it's no use trying to scare us or arrest us or whatever else may occur to you. What we've done is establish an automatic deterrent."

"Against an, an attempt ... at sabotage ... that only exists in your imagination!"

Blades shrugged. "That argument isn't relevant any longer. I do believe the missile was released deliberately. We wouldn't have done what we did otherwise. But there's no longer any point in making charges and denials. You'd just better retrieve the thing."

Hulse squared his shoulders. "How do I know you're telling the truth?"

"Well, you can send a man to the Station. He'll find the scooters lying gutted. Send another man over here to the Pallas. He'll find the scoopships gone. I also took a few photographs of the autocposites being installed and the ships being cast adrift. Go right ahead. However, may I remind you that the fewer people who have an inkling of this little intrigue, the better for all concerned."

Hulse opened his mouth, shut it again, stared from side to side, and finally slumped the barest bit. "Very well," he said, biting off the words syllable by syllable. "I can't risk a ship of the line. Of course, since the rogue is still farther away than your deterrent allows the Altair to go, we shall have to wait in space a while."

"I don't mind."

"I shall report the full story to my superiors at home ... but unofficially."

"Good. I'd like them to know that we asterites have teeth."

"Signing off, then."

Chung stirred. "Wait a bit," he said. "We have one of your people aboard, Lieutenant Ziska. Can you send a gig
"She didn't collaborate with us," Blades added. "You can see the evidence of her loyalty, all over my mug."
"Good girl!" Hulse exclaimed savagely. "Yes, I'll send a boat. Signing off."

The screen blanked. Chung and Blades let out a long, ragged breath. They sat a while trembling before Chung muttered, "That skunk as good as admitted everything."
"Sure," said Blades, "But we won't have any more trouble from him."

Chung stubbed out his cigarette. Poise was returning to both men. "There could be other attempts, though, in the next few years." He scowled. "I think we should arm the Station. A couple of laser guns, if nothing else. We can say it's for protection in case of war. But it'll make our own government handle us more carefully, too."
"Well, you can approach the Commission about it." Blades yawned and stretched, trying to loosen his muscles. "Better get a lot of other owners and supervisors to sign your petition, though." The next order of business came to his mind. He rose. "Why don't you go tell Adam the good news?"

"Where are you bound?"
"To let Ellen know the fight is over."
"Is it, as far as she's concerned?"
"That's what I'm about to find out. Hope I won't need an armored escort." Blades went from the cubicle, past the watchful radioman, and down the deserted passageway beyond.

The cabin given her lay at the end, locked from outside. The key hung magnetically on the bulkhead. Blades unlocked the door and tapped it with his knuckles.
"Who's there?" she called.
"Me," he said. "May I come in?"
"If you must," she said freezingly.

He opened the door and stepped through. The overhead light shimmered off her hair and limned her figure with shadows. His heart bumped. "You, uh, you can come out now," he faltered. "Everything's O.K."

She said nothing, only regarded him from glacier-blue eyes.

"No harm's been done, except to me and Sparks, and we're not mad," he groped. "Shall we forget the whole episode?"
"If you wish."
"Ellen," he pleaded, "I had to do what seemed right to me."
"So did I."
He couldn't find any more words.

"I assume that I'll be returned to my own ship," she said. He nodded. "Then, if you will excuse me, I had best make myself as presentable as I can. Good day, Mr. Blades."

"What's good about it?" he snarled, and slammed the door on his way out.

Avis stood outside the jampacked saloon. She saw him coming and ran to meet him. He made swab-O with his fingers and joy blazed from her. "Mike," she cried, "I'm so happy!"

The only gentlemanly thing to do was hug her. His spirits lifted a bit as he did. She made a nice armful. Not bad looking, either.

"Well," said Amspaugh. "So that's the inside story. How very interesting. I never heard it before."
"No, obviously it never got into any official record," Missy said. "The only announcement made was that there'd been a near accident, that the Station tried to make counter-missiles out of scoopships, but that the quick action of NASS Altair was what saved the situation. Her captain was commended. I don't believe he ever got a further promotion, though."

"Why didn't you publicize the facts afterwards?" Lindgren wondered. "When the revolution began, that is. It would've made good propaganda."
"Nonsense," Missy said. "Too much else had happened since then. Besides, neither Mike nor Jimmy nor I wanted to do any cheap emotion-fanning. We knew the asterites weren't any little pink-bottomed angels, nor the people back sunward a crew of devils. There were rights and wrongs on both sides. We did what we could in the war, and hated every minute of it, and when it was over we broke out two cases of champagne and invited as many Earthersiders as we could get to the party. They had a lot of love to carry home for us."
A stillness fell. She took a long swallow from her glass and sat looking out at the stars.
"Yes," Lindgren said finally, "I guess that was the worst, fighting against our own kin."
"Well, I was better off in that respect than some," Missy conceded. "I'd made my commitment so long before the trouble that my ties were nearly all out here. Twenty years is time enough to grow new roots."
“Really?” Orloff was surprised. “I haven’t met you often before, Mrs. Blades, so evidently I’ve had a false impression. I thought you were a more recent immigrant than that.”

“Shucks, no,” she laughed. “I only needed six months after the Altair incident to think things out, resign my commission and catch the next Belt-bound ship. You don’t think I’d have let a man like Mike get away, do you?”
"Let's hope the horrible nightmare is over, dearest," whispered Ellen Estabrook to Lee Bentley as their liner came crawling up through the Narrows and the Statue of Liberty greeted the two with uplifted torch beyond Staten Island. New York's skyline was beautiful through the mist and smoke which always seemed to mask it. It was good to be home again.

Certainly it was a far cry from the African jungles where, for the space of a ghastly nightmare, Ellen had been a captive of the apes and Bentley himself had had a horrible adventure. Caleb Barter, a mad scientist, had drugged him and exchanged his brain with that of an ape, and for hours Bentley had roamed the jungles hidden in the great hairy body, the only part of him remaining "Bentley" being the Bentley brain which Barter had placed in the ape's skull-pan. Bentley would never forget the horror of that grim awakening, in which he had found himself walking on bent knuckles, his voice the fighting bellow of a giant anthropoid.

Yes, it was a far cry from the African jungles to populous Manhattan.

As soon as Ellen and Lee considered themselves recovered from the shock of the experience they would be married. They had already spent two months of absolute rest in England after their escape from Africa, but they found it had not been enough. Their story had been told in the press of the world and they had been constantly besieged by the curious, which of course had not helped them to forget.

"Lee," whispered Ellen, "I'll never feel sure that Caleb Barter is dead. We should have gone out that morning when he forgot to take his whip and we thought the vengeful apes had slain him. We should have proved it to our own satisfaction. It would be an ironic jest, characteristic of Barter, to allow us to think him dead."

"He's dead all right, dear," replied Bentley, his nostrils quivering with pleasure as he looked ahead at New York, while the breeze along the Hudson pushed his hair back from his forehead. "He had abused the great anthropoids for too many years. They seized their opportunity, don't mistake that."

"Still, he was a genius in his way, a mad, frightful genius. It hardly seems possible to me that he would allow himself to be so easily trapped. It's a reflection on his great mentality, twisted though it was."

"Forget it, dear," replied Bentley, putting his arm around her shoulders. "We'll both try to forget. After our nerves have returned to normal we'll be married. Then nothing can trouble us."

The vessel docked and later Lee and Ellen entered a taxicab near the pier.

"I'll take you to your home, Ellen," said Bentley. "Then I'll look after my own affairs for the next couple of days, which includes making peace with my father, then we'll go on from here."

On an impulse he ordered the cabbie to draw up to the curb and purchased a newspaper.

"Do you mind if I glance through the headlines?" Bentley asked Ellen. "I haven't looked at an American paper for ever so long."

The cab started again and Bentley folded the paper, falling easily into the habit of New Yorkers who are accustomed to reading on subways where there isn't room for elbows, to say nothing of broad newspapers.

His eyes caught a headline. He started, frowning, but was instantly mindful of Ellen. He mustn't show any signs that would excite her, especially when he didn't yet understand what had caused his own instant perturbation.

Had Ellen looked at him she might have seen merely the calm face of a man mildly interested in the news of the day, but she was looking out at the Fifth Avenue shops.

Bentley was staring again at the newspaper story:

"An evil genius signing his 'manifestoes' with the strange cognomen of 'Mind Master' gives the authorities of New York City twelve hours in which to take precautions. To prove that he is able to make good his mad threats he..."
states that at noon exactly, to-day, he will cause the death of the chief executive of a great insurance company whose offices are in the Flatiron Building. After that, at regular stated periods, warnings to be issued in each case ten hours in advance, he will steal the brains of the twenty men whose names are hereto appended:" (There followed then a list of names, all of which were known to Bentley.)

He understood why the story had startled him, too. "Mind Master!" Anything that had to do with the human brain interested him mightily now, for he knew to what grim uses it could be put at the hands of a master scientist. Around his own head, safely covered by his hair unless someone looked closely, and even then they must needs know what they sought, was a thin white line. It marked the line of Caleb Barter's operation on him that terrible night in the African jungles, when his brain had been transferred to the skull-pan of an ape, and the ape's brain to his own cranium. Any mention of the brain, therefore, recalled to him a very harrowing experience.

It was little wonder that he shuddered.

Ellen noticed his agitation.

"What is it, dearest?" she asked softly, placing her hand in the crook of his arm.

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He was about to answer her, desperately trying to think of something to say that would not alarm her, when their taxicab, with a sudden application of the brakes, came to a sharp stop. Bentley noticed that they were at the intersection of Twenty-second Street and Fifth Avenue. The lights were still green, but nevertheless all traffic was halted.

And for a strange reason.

From the west door of the Flatiron Building emerged a grim apparition of a man. His body was scored by countless bleeding wounds which looked as though they had been made by the fingernails of a giant. The man wore no article of clothing except his shoes. Apparently, his clothing had been ripped from his body by the same instrument which had turned his body into a raw, dripping horror.

The man staggered, half-running, at times all but falling, toward the traffic officer at the intersection.

As he ran he screamed, horrible, babbling screams. His lips worked crazily, his eyes rolled. He was frightened beyond the comprehension of ordinary mortals. His screams began and ended on the high shrill notes of utter dementia, and as he ran he pawed the air with his bleeding hands as though he fought out on all sides against invisible demons seeking to drag him down.

"Oh, my God!" said Ellen. "Even here!"

What had caused her to speak the last two words? Did she also have a premonition of grim disaster? Did she also feel, deep down inside her, as Bentley did, that the nightmare through which they had passed was not yet ended?

Bentley now sat unmoving, his eyes unblinking, as he saw the naked man stagger over to the traffic officer. The color drained from his face.

He looked at his watch. It was exactly noon.

Even without further consideration Bentley knew that this gruesome apparition had some direct connection with the newspaper story he had just read.

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Unobtrusively, trying to make it seem a preoccupied action, he folded the newspaper again and thrust it down at the end of the seat cushion. But Ellen was watching him, a haunting fear gradually coming into her eyes.

She quickly reached past him and snatched the paper before he realized her intent. The item he had read came instantly under her eyes because of the way he had automatically folded the paper. She read it with staring eyes.

"So, Lee," she said, "you think there's a connection with--with--well, with us?"

"Absurd!" he said heartily, too heartily. "Caleb Barter is dead."

"But I have never been sure," insisted Ellen. "Oh, Lee, let's get away from here! Let's take the first boat for Bermuda--anywhere to escape this terrible fear."

"No!" he retorted harshly. "If our suspicions are correct, and I think we're unwarrantedly keyed up because of our recent experiences, the officials of New York may need my help."

"Your help? Why?"

"I know more about Caleb Barter than any other living man, perhaps."

"Then you do have doubts that he is dead!"

Bentley shrugged his shoulders.

"Ellen," he said, "drive on home without me. I'm going to drop off and find out all I can. If we're in for it in any way it's just as well to know it at once."

"You'll come right along?"

"Just as soon as I can make it. And I hope I'll be able to report our fears groundless."
Bentley stepped from the cab. He ordered the chauffeur to turn right into Twenty-second Street and to proceed until Ellen gave him further directions.

Then Bentley hurried through the congestion of automobiles toward the traffic officer who was fighting with the naked man, trying to subdue him. Other men were running to the officer's assistance, for it could be seen that he alone was no match for the lunatic. Bentley, however, was first to arrive.

"Give me a hand!" gasped the officer. "I can't handle 'im without usin' my club and I don't wanna do that. The poor fella don't know what he's a-doin'."

Bentley quickly sprang to the patrolman's assistance. Between them they soon reduced the stranger to a squirming bundle and dragged him to the sidewalk; another officer was phoning for an ambulance. The stricken man was now mumbling, babbling insanely. Blood trickled from the corners of his lips. The sight of one eye had been destroyed.

Bentley watched him, sprawled now on the sidewalk, surrounded by a group of men. The man was dying, no question about that. The talons, which had scored him, had bitten deeply and he was destined to bleed to death soon even if the wounds were not otherwise mortal.

Bentley noticed something clutched tightly in the man's right hand--something that sent a chill through his body despite the heat of a mid-July noon. The officer, apparently, had not noticed it.

Soon a clanging bell announced the arrival of an ambulance, and as the crowd stepped aside to clear the way, Bentley bent over the dying man. The man's lips were parted and he was trying with a mighty effort of will to speak.

Bentley put his ear close to the bleeding lips through which words strove to bubble. He heard parts of two words:

"...ind ...aster...."

Bentley suddenly knew what the man was trying to say. The half-uttered words could mean only--"Mind Master."

Bentley suppressed a shudder and extended his hands to the closed right hand of the dying man. Carefully he removed from between the fingers three tufts of thick brown hair, coarse and crude of texture. There was a rattle in the naked man's throat.

Five minutes later the ambulance intern hastily scribbled in his record the entry, "Dead on Arrival."

Bentley, more frightened than he had ever been before, entered a taxicab as soon as the body had been removed and the streets cleared. He stared closely at the tufts of hair in his hand. Maybe he had been wrong in taking them before detectives arrived on the scene, but he had to know, and he felt that these hairs proved his mad suspicions.

Caleb Barter was alive!

The hairs came from the shaggy coat of a giant anthropoid ape or a gorilla.

CHAPTER II

Ultimatum

How terribly far-fetched it seemed! It was unbelievable enough that Bentley had once reposed in the body of an ape. That had been in the African wilds. But the idiocy of the thing now rested in Bentley's belief that here, immediately upon landing, he was again facing something just as horrible.

But the coincidences were too clear. The palaver about "brains," and "Mind Master"--and those ape hairs in Bentley's hands. He wished he knew all that had led up to that story he had read in the paper just prior to the appearance of the naked man from the west door of the Flatiron Building. However, the killing would get front page position now, due to the importance of the dead man--Bentley never doubted it was the man whom, in the paper, the "Mind Master" had promised to slay.

Great apes in the heart of New York City! It sounded silly, preposterous. Yet, before he had gone through that dread experience with the mad Barter, Bentley would have sworn that brain transplantation was impossible. Even now he was not sure that it hadn't all been a terrible dream.

Should Bentley go at once to the police to give them the benefit of whatever knowledge he might have of Caleb Barter? He wasn't sure. Then he decided that sooner or later he must come out into the open. So he caught a cab and went to police headquarters.

"I wish," he said, "to talk to someone about the Mind Master!"

If he had said, "I have just come from Mars," he could scarcely have caused a greater sensation.

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But his calm statement got him an instant audience with a slender man of thirty-five or so, whose hair was prematurely gray at the temples, and whose eyes were shrewd and far-seeing.

"My name's Thomas Tyler," said the detective. He certainly didn't look the conventional detective, but Bentley knew instantly that he wasn't the conventional detective. "I work on the unusual cases. If you hadn't sent in your
name I wouldn't have seen you, which means that as soon as you leave here you are to forget my name and how I
look."

He motioned Bentley to a seat. Bentley sat back. Suddenly Thomas Tyler was around his desk and had pushed
back the hair from Bentley's temples. He drew in his breath with a sharp hiss when he saw the white line which
circled Bentley's skull.

"It's not exactly proof," he said, as though he and Bentley had been in the midst of a discussion of that awful
operation Barter had performed on Bentley, "but I'd take your word for it."

"The story, in the main, was true," said Bentley.

"I thought so. What made you come here?"

"I saw that naked man run across Fifth Avenue from the door of the Flatiron Building. I saw the officer subdue
him, helped him do it in fact, and saw the man die. Since there was no detective there, I took the liberty of removing
these from the fingers of the dead man."

Bentley gave Tyler the coarse hair, stained with blood. Tyler looked at it grimly for a moment or two.

"Not human hair," he said, as though talking to himself. "Not like any I know of. But ... ah, you know what sort
of hair, eh? That's what sent you here!"

"It's the hair of an ape or a gorilla."

"How do you know, for sure?"

"Once," said Bentley grimly, "for several horrible hours ... I was a giant anthropoid ape."

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Tyler's chair legs crashed solidly to the floor.

"I see," he said. "You think this thing has some connection with your own experiences. How long ago was
that?"

"Slightly over two months."

"You think the same man?"

"I don't know. But who could want, as a newspaper story I just read says, to steal the brains of men? What for?
It sounds like Barter. I've never heard of anybody else with such an obsession. I'm putting two and two together--and
fervently hoping they'll add up to seven instead of four. For if ever in my life I wanted to be wrong it's now."

Tyler pursed his lips. Bentley saw that his eyes were glinting with excitement.

"But there's a possibility you're right. Do you know what the Mind Master's first manifesto said? It was
published by a tabloid newspaper as a sort of gag--a strange crank letter. Here it is."

Tyler tossed Bentley a newspaper clipping a week old. Bentley read quickly:

"The white race is deteriorating physically at a dangerous rate. In fifty years, if nothing is done to prevent it, the
world will be filled with men whose bodies are so soft as to be almost worthless. But I shall take steps to prevent
that, as soon as I am ready. I need a week. Then I shall begin my crusade to make the white race a race of supermen,
whom I alone shall rule. They shall keep the brains they have, which shall be transferred to bodies which I shall
furnish.

(Signed) The Mind Master."

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Tyler squinted at Bentley again.

"You see? Brains are all right, he says, but the white race needs new bodies. If he isn't suggesting brain
substitution, what is he suggesting? Though I confess I never thought of your story until your name was sent in to
me a while ago. For the world thinks of Barter as having been killed by the great apes."

"Yes, I told newspaper reporters that. I thought it was true. But this Mind Master must be Barter. There couldn't
be two persons in the world with mental quirks so much alike."

"Tell me what Barter looks like. Oh, there are plenty of pictures extant of the famous Professor Caleb Barter
who disappeared from the world some years ago, but he'll know that, of course, and he won't look like the pictures.

"Alteration of his own features should be easy for a man who juggles brains."

"He may have changed his features since I saw him, too," said Bentley. "But I'm sure I'd know him."

Tyler's telephone rang stridently.

He took down the receiver. His mouth fell slackly open as his eyes lifted to Bentley's face. But he recovered
himself and slapped his hand over the transmitter.

"Anybody know you came here?" asked Tyler.

Bentley shook his head.

"Well," went on Tyler, "I don't know how it happens, but this telephone message is for you!"

Bentley's heart seemed to jump into his throat. One of those hunches which sometimes were so valuable to him
had struck him, as though it were a blow between the eyes. His lips tightened. His face was pale, but there was a
grim light in his eyes.

He hesitated for a second, the receiver in his hand, his mouth against the transmitter.

"Well, Professor Barter?" he said conversationally.

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There came a gasp from Thomas Tyler. He jumped to the door and motioned to someone. A man in uniform came to his side. Bentley distinctly heard Tyler tell the man to have this telephone call traced.

From the receiver came a well-remembered chuckle.

"So you were expecting me, eh, Bentley? You never really believed that one of my genius would fall such easy prey to the great apes did you?"

"Of course not, Professor," said Bentley soothingly. "It would be an insult to your vivid mentality."

"Vivid mentality! Vivid mentality! Why, Bentley, there isn't another brain in the world to compare with mine.

And you of all people should know it. The whole world will know it before I'm finished, for I have made tremendous strides since you helped me to perform that crowning achievement in Africa. By the way, tell your friend Tyler, who just called the officer to the door, that it's useless to try to trace this call!"

Bentley jumped as though he had been stung. How had Barter known what Tyler was doing? How had he guessed what Tyler had told the man in uniform? How had Barter known Bentley was visiting Tyler? How had he discovered even that Bentley was back in the United States? Why, besides, was he so friendly with Bentley now?

"You speak, Professor," said Barter softly, "as though you could see right into police headquarters."

"I can, Bentley! I can!" said Barter impatiently, as though he were rebuking a schoolboy for saying the obvious.

"You're close by, then?"

"No. I'm a long way--several miles--from you. But I can see everything you do. And you needn't look at Tyler in such surprise!"

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Bentley started. He had looked at Tyler in a surprised way and, clever though he was, he didn't think that Barter could have guessed so accurately to the second the gesture he had made. Barter chuckled.

"It's a good jest, isn't it? But listen to me, Bentley, I've a great scheme in hand for the amelioration of mankind.

I need your help, mostly because you were such an excellent subject in my greatest successful experiment."

"Will it be the same sort of experiment as the other?" Bentley's heart was in his mouth as he asked the question.

"Yes, the same ... but there are improvements I have succeeded in perfecting since the creation of Manape. My one mistake when Manape was created was in that I allowed myself to lose control of him--of you! That will not happen again. Oh, if you'll help me, Bentley, that operation will not be performed on you until you yourself request it because I shall have proved to you that it is better for you. You shall be my assistant and obey my orders, nothing more."

Lee Bentley drew a deep breath.

"If I prefer not to work with you again, Professor?"

A chuckle was Barter's answer. The chuckle broke off shortly.

"You should not refuse, Bentley," said the scientist at last. "For then I should find it necessary to remove you.

You might stand in my way, and though you would be but a puny obstacle, you still would be an obstacle. For example, consider Ellen Estabrook, your fiancée. I can find no use for her ... and she knows as much about me as you do. Therefore, at my convenience, I shall remove her."

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"Caleb Barter," Bentley's voice was hoarse with anger as he dropped his soothing mode of address toward the man he knew was insane, "if anything happens to Miss Estabrook through you I shall find you no matter how well you are guarded ... and I shall destroy you bit by bit, as a small boy destroys a fly. For every least evil thing that happens to Miss Estabrook, a hundred times that will happen to you at my hands."

"Good!" snapped Barter, no longer chuckling. "I am happy to know how much she means to you. It shows me how easily I may control you through her. It means war then, between us? I'm sorry, Bentley, for I like you. In a way, you know, you are my creation. But in a war between us, Bentley, you haven't a chance to win."

Bentley clicked up the receiver.

"Could you trace the call, Tyler?" he snapped.

Tyler shook his head ruefully.

"We couldn't locate the right telephone, but we could tell which exchange it came through, and the lines of that exchange cover a huge section of the city."

"Can you find out exactly the section and the address of each phone on every line?"

"Yes. The exchange is Stuyvesant."

"That gives me some help. I used to live in Greenwich Village and I had a Stuyvesant number. I'm going after
Barter. Say, Tyler, how do you suppose Barter knew exactly what was going on in this room?"

Tyler's face slowly whitened as his eyes looked fearfully into the eyes of Lee Bentley. He shook his head slowly.

Bentley squared his shoulders and spoke quietly and determinedly.

"Mr. Tyler," he said, "I am in a great hurry. May I be conducted in a police car? Might as well. I'll be working with you hand and glove until Barter is captured."

Bentley rode behind a shrieking siren to the home of the Estabrooks ... while from a distance of two miles Caleb Barter watched every move and chuckled grimly to himself.

CHAPTER III
Hell's Laboratory

The huge room was absolutely free of all sounds from anywhere save within itself. The walls, the floors, the doors were of chrome steel. The cages were iron-ribbed and ponderous.

The long table which ran down the strange room's center was covered with retorts, test tubes, Bunsen burners—all of the stock-in-trade of the scientist who spends most of his time at research work. The man who bent over the table was well past middle age. His hair was snow-white, but his cheeks were like rosy red apples. He literally seemed to glow with health. He was like a strange flame. His hands were slender, the fingers long and extraordinarily supple. His lips were redder even than his cheeks, and made one, strangely enough, think of vampires. His eyes were coal-black, fathomless, piercing.

On the bronze wall directly across the table from the swiftly laboring man was a porcelain tablet set into the bronze, and in the midst of the table were a score of little push-buttons. Above each was a red light; and below, a green one.

Several inches below each green light was a little slot which resembled a tiny keyhole, something like the keyhole in the average handbag. There was a key in each hole, and from each key hung a length of gleaming chain which shone like gold and might have been gold, or at least, some gold-plated metal. On the dangling end of each chain was another key which might have been the twin of the key in the hole above.

In the space between the keyholes and the green lights there were the letters and figures: A-1, B-2, C-3, D-4 ... and so on up to T-20.

Plainly it was the beginning of a complicated classification system with any number of combinations possible.

Behind the working man the row of cages partially hid the brooding horror of the place. There were twenty cages—and in each one was a sulking, red-eyed anthropoid ape. Plainly the fact that the number of apes coincided with the number of push-buttons, and with the number of keys, to say nothing of the red lights and the green lights, was no accident. The apes were sullenly silent, proof that they feared the man at the table so much that they were afraid to move.

At last the white-haired man stopped and breathed a sigh of satisfaction. Carefully he placed in the middle of the table the instrument which he had been examining. It looked like a slightly concave aluminum plate or tympanum, save that on the apex appeared a tiny ball of the same metal. Except for the color and the fact that the thing was almost flat, it looked like a small Manchu hat.

"Naka Machi!" said the man suddenly in a conversational tone of voice.

The chrome steel door swung open swiftly and silently and another man entered. He was about the same height as the first man, but he was younger and his eyes were blacker. His hair was as black as the wings of a crow. He was a Japanese dressed in Occidental garb.

"Naka Machi," said the white-haired one again, "I have examined every bit of the infinitesimal mechanism in the ball on this tympanum. It is perfect. You are a genius, Naka Machi. There is only one genius greater--Professor Caleb Barter!"

Naka Machi bowed low, and as he spoke his breath hissed inwardly through his teeth after the Japanese manner of admitting humility—"that my humble breath may not blow upon you"—which never needed really to be sincere.

"I am merely a genius with my fingers, Professor Barter," said Naka Machi in a musical voice. "The smaller the medium in which I work the happier I am, Professor; and in that I am a genius. But the plan for this so marvelous little radio-control, as you call it, came entirely from your head, my master. I did exactly as the plans bade me. Will it work?"

Caleb Barter's red face went redder still. His eyes shot flames of anger. His lips pouched. Almost he seemed on the point of striking down his Japanese assistant.

"Will it work?" he repeated. "Have you not just told me that you followed my plans exactly? Have I not just now checked your every bit of work and pronounced it perfect? Then how can it fail to work? Have you another one
"Yes, my master. Now that I have perfected two, the work will become monotonous. If the master wishes, I can create still another radio-control, inside the head of a pin, which I should first render hollow with that skill which only Naka Machi possesses?"

Caleb Barter almost smiled.

"It will not be necessary. But it will be necessary for you to make eighteen additional radio-controls of the same size as this one, or say make twenty-four so that we shall have some extra ones in case of accident. These two will be put into action at once. Naka Machi, bring me Lecky, completely uniformed as a smart chauffeur! Have you laid in a store of clothing, as I bade you, to fit every conceivable need of Lecky, Stanley, Morton and Cleve?"

"Yes, my master."

"Then bring in Lecky accoutered as a chauffeur."

Ten minutes later a young man entered behind Naka Machi. He was slender and his chauffeur's uniform fitted him like a glove. He looked like a soldier in it. Indeed his bearing, his whole stance, spoke of many years as a soldier--and a proud one. The fellow was brimful of health. His cheeks were rosy with vitality. He looked like a man with health so abundant he never found means to tire himself to the point where he could sleep dreamlessly.

But, nevertheless his arms hung listlessly at his sides. His eyes seemed empty of hope, dull and lifeless, and one looked into those eyes and shuddered. One tried to gaze deeply into them and found oneself baffled. There was no soul behind them.

"Come here, Lecky," said Barter coldly.

Lecky glided effortlessly forward to stand before Barter.

"You've no brains, Lecky," said Barter emotionlessly; "no brains of your own. You have a splendid body which moves only at the will of Caleb Barter. I need that body for my purposes. But a man with brains is dangerous. That's why you haven't any."

Barter now took the silvery tympanum with the ball atop it and set it on the head of Lecky. On top of it he placed the chauffeur's cap, bringing it down tightly to keep the tympanum in place.

"If I had it to do again I'd insert the tympanum under the skull as part of the operation, Naka Machi," said Barter as he worked. "We'll do that hereafter. And we begin work immediately. I'm going to send Lecky out now to get the first subject."

"The first subject, sir?"

"Yes. Manhattan's richest man. A man must have brains to become Manhattan's richest man, and I need men with brains. His name is Harold Hervey. He will be leaving his office in the Empire State Building in about half an hour. I want Lecky to be on hand to meet him."

On his own head Barter placed a second tympanum which Naka Machi had brought him. Over it he pulled a rubber cap, like a bathing cap with a hole cut in the top.

"Now, we'll try it out, Naka Machi," said Barter. "Which one of these lights is Lecky's?"

"B-2, my master."

Barter sat down under the light marked "B-2" and lifted the key which dangled from the end of the golden chain. This key he inserted in a tiny orifice in the ball atop his head. Then he turned in his chair to look at Lecky. Barter's face was a mask of concentration as he gazed intently at the young man.

Lecky stiffened to attention. His right hand shot to his cap visor in salute. His lips twisted into a travesty of a smile. For a few seconds he went through a strange series of posturings. He stood in the attitude of a boxer preparing to attack. He danced smartly on his toes. He bent double and touched the floor with the palms of his hands. He jumped up and down with his legs stiff. He stopped suddenly with his right hand at rigid salute. But his eyes were still vacant through every posture.

Barter's face showed a glow of satisfaction.

"He did exactly what I willed him to do! I am his master. He is my slave--even more abjectly than you are my slave, Naka Machi!"

"But that would be impossible, my master," said Naka Machi, hissing again through his teeth as he sucked in his breath. "None could be more abjectly your slave than I."

"Do not say anything is impossible," said Barter peevishly, "when I say otherwise. Anything is possible to me! Now, we'll send Lecky forth. I'll watch him through the heliotubes and control his every move. While I am directing Lecky you will prepare the table behind me for the first of our world-revolutionizing operations."

"Yes, my master," said the Japanese humbly.

"But first, it's just as well that Lecky is in a good humor, even though he is my slave. Where are the walnuts,
Naka Machi?"

The Japanese tendered a large walnut to Barter. Barter rose and approached Lecky who still stood at salute. He stopped a couple of paces in front of the soldierly man and held up the walnut as a man sometimes holds up food to a dog, bidding him "speak" before he may be fed.

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Then Lecky did a strange thing.

He began to jump up and down like a pleased child. His jumping caused him to lose his balance, but he recaptured it by pressing the backs of his hands against the floor. His hitherto expressionless eyes lost their dullness. Saliva dribbled at the corners of his mouth. Barter tossed him the walnut. Lecky held it under his right forefinger, against the heel of his thumb, instead of between thumb and forefinger, as he lifted it to his mouth.

Barter chuckled.

"Even the human casement cannot wholly hide the ape, eh, Naka Machi?" said Barter.

Naka Machi hissed.

Barter returned to the porcelain slab banked with the lights and the keys. He readjusted the keys and his face became thoughtful again.

Lecky turned smartly, still nibbling at his walnut, strode to the bronze door and let himself out.

Through the heliotube directly above the key marked "B-2," Caleb Barter watched him go, and kept watching him as he made his way to the street. Barter looked ahead of his puppet, noting the cars which were parked at the curb. He saw a stately limousine. He grinned. The chauffeur was not in sight. Barter looked for him and found him at a table in a nearby restaurant, his back to the window.

Barter looked back at his puppet and his face became serious with concentration.

Lecky walked blithely along the street and turned right when he was opposite the limousine. Without a moment's hesitation, he stepped into the limousine, pressed the starter, shifted gears, turned in the middle of the block and started swiftly uptown.

After Lecky had shifted gears he drove with his left hand alone. His right was still busy with the walnut.

Barter now looked like a man in a trance, so deeply did he concentrate on his task of guiding his soulless, ape-brained puppet, Lecky, through the heavy traffic of Manhattan.

CHAPTER IV
The Opening Gun

"That list, Tyler," said Bentley, after he had somewhat calmed the fears of Ellen Estabrook and had returned to the task of tracing Barter, "is headed by Harold Hervey, the multi-millionaire. I know Barter well enough to know that he'll go down the list methodically, taking each person in turn. We'd best take immediate precautions to guard the old man's home. For Barter, if not entirely ready to take drastic steps, must be almost ready, else he couldn't issue his manifestoes and take a chance of some slip-up before he could get really started."

"Why do you suppose he named Hervey on the list?" asked Tyler.

"Because Hervey is a financial genius. Barter wishes not only to carry out his plan of creating a race of supermen, but wishes at the same time to maintain personal control of them. And to control Manhattan, from which he logically hopes to extend his control to the whole United States, then to the whole world, Barter must also control the money marts. Hervey is the shrewdest financier in the world."

"But won't we frighten Hervey's family if we take steps now?"

"Better to frighten them now than to be too late entirely. However, we can place his house under surveillance without the knowledge of the family for the time being. And you'd better send a couple of men to his office in the Empire State Building to see that nothing happens to him on the way home this evening. I talked to him by telephone and he pooh-poohed the whole thing. Hard-headed business executives have no imagination."

Bentley and Tyler rode uptown in the back seat of a speeding police car driven by one of the best chauffeurs Bentley had ever ridden behind. He edged through holes in the traffic where Bentley could scarcely see any holes at all. He estimated the speed of cars which might have collided with the police vehicle and slipped through with inches to spare. In his way the man was a genius. But Bentley was yet to see the driving of a master genius....

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Far out in the residential district the police car came to a stop. Other police cars arrived at intervals to disgorge men in plain clothes who immediately entered upon their guard duties as unobtrusively as possible. If Hervey's family noticed at all they would scarcely attach any importance to the arrival of cars and the discharging of passengers who seemed to have nothing to do except dawdle on the sidewalks.

But all the way uptown a hunch had ridden Bentley. He had the feeling that no matter how fast the police car traveled, no matter how skilfully the chauffeur inched his way through the press, they would be too late to save Hervey. The feeling became an obsession. Many times he called through the speaking tube.
"Faster, driver, for God's sake, faster!"

Now near the home of Harold Hervey, Bentley found himself unable to walk slowly, with the air of nonchalance, which the other police officers wore like a cloak.

"Something's happened," said Bentley, "I'm sure of it. I feel that Barter is so close to me that I could touch him if I knew in which direction to extend my fingers."

Suddenly a speeding car, with horn bellowing, came crashing up the street toward the Hervey residence. It was traveling at great speed, careening from side to side like a ship in a storm at sea.

"There comes Hervey's car," said Tyler. "And something has happened to make him travel like that. Old man Hervey doesn't allow his chauffeur to go faster than twenty miles an hour."

Tyler and Bentley were near by when the car squealed to a stop before the Hervey residence and a hatless, disheveled man leaped out almost before the car stopped rolling.

"That's not Hervey," said Tyler. "That's his private secretary. Something's up. It's time we took a hand in things."

Tyler and Bentley grasped the young man by the elbow.

"What's up?" demanded Tyler.

"It's Mr. Hervey, sir," panted the secretary. "It just happened. He's been kidnaped!"

The secretary was a slight man, but fear had given him strength. He almost dragged Tyler and Bentley off their feet as he strode on up the walk leading to the home of Hervey.

"You'll scare his family half to death!" said Tyler.

"It'll have to come sometime, Tyler," said Bentley. "It might as well be now. They'll have to know. We'll have to sit inactively from this moment on. Tyler, there's nothing that can be done for Hervey. Barter has scored. We couldn't catch him now to save ourselves from perdition. But his next step will involve the Hervey menage. We'll have to wait there for his next move."

Tyler and Bentley entered the vast gloomy structure of the old-fashioned Hervey domicile on the heels of the frightened secretary. Mrs. Hervey, a faded woman of sixty or so, met them at the door. Her head was held high, her lips grimly drawn into a straight line.

"So," she said evenly, "they've got Mr. Hervey. I begged him to take those threats seriously. He's been either killed or kidnaped."

"Kidnaped," said Bentley, continuing brutally because of the courage he saw in the old woman's face. "And that means he'll be dead within the hour, if he isn't dead already. We've got to stay here for a few hours, to await the next move of the madman calling himself the Mind Master, in the hope that we can trace him when he makes his next move."

Mrs. Hervey lifted her head still higher.

"We'll place no obstacles in your path, gentlemen," she said, "if you are from the police. The family will confine itself to the upper floors of the house."

Tyler and Bentley took possession of the living room. Outside a dozen plain-clothes men were to patrol the grounds during the hours of darkness.

Other men were at every adjacent street corner. A rat could not have got through unobserved.

Tyler and Bentley took seats at a table facing the door. The police car in which they had arrived stood at the curb, with the chauffeur at the wheel, the motor humming softly.

"Timkins," said Bentley, addressing the private secretary who stood in the most distant corner of the room, his eyes fearfully fixed on the street door, "how was Mr. Hervey captured?"

"I was accompanying him to his car, sir," replied the young man, "when a dapper fellow in a chauffeur's uniform confronted us on the sidewalk. He stood as stiff and straight as a soldier. He didn't say a word. He just looked at Mr. Hervey. Mr. Hervey stopped because the man was blocking the sidewalk. I looked into the chauffeur's eyes. They seemed utterly dead. I shivered. I'd have sworn the man had no soul, now that I look back at it. Suddenly he lashed out with his fist, striking Mr. Hervey on the jaw. Mr. Hervey started to fall. The man caught him under the arms and tossed him into the tonneau of a limousine at the curb. The car was away before I could summon the police."

Bentley nodded.

"Which way did the car go?" he demanded.

"Downtown, at top speed," replied Timkins.

Bentley turned to Tyler.

"The Stuyvesant exchange is downtown," he said. "Now Timkins says that the kidnaper's car went downtown.
And the naked man was killed in the Flatiron Building, which is well downtown in its turn. Tyler, fill all the area covered by the Stuyvesant exchange with plain-clothes men. Telephone Headquarters to see whether a stolen limousine has been reported from somewhere in the area. Barter wouldn't have cars of his own for fear they could be traced. He'll use stolen cars when he uses cars at all. And he had his puppet pick up the limousine close to his hideout."

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Tyler nodded and quickly spoke into the telephone on the table at his elbow.

The telephone reminded Bentley of Ellen Estabrook.

When Tyler had finished issuing pointed instructions Bentley called the residence of the Estabrooks in Astoria, Long Island.

Carl Estabrook answered the telephone.

"Is Ellen all right?" asked Bentley. "May I speak to her?"

Carl Estabrook's answering gasp came plainly over the wire.

"Are you crazy, Lee?" he asked. "Not ten minutes ago you telephoned Ellen and told her to meet you near the arch in Washington Square. I asked her if she was sure the voice was yours, and she was...."

But Bentley, white-faced, had already clicked up the receiver.

"Tyler," he said, "Ellen Estabrook, my fiancée, is walking into a trap. It's Barter again. He'd know how to imitate my voice well enough to fool Ellen. It would be simple enough for a man like him. He probably had that long conversation with me at headquarters to make sure he hadn't forgotten the timbre and pitch of my voice ... and to hear how it sounded over the telephone. Please have plain-clothes men pick up Ellen in Washington Square. And that, Tyler, if you'll notice, is also downtown."

Bentley felt that he would go mad with anxiety as he awaited some news from the plain-clothes men Tyler had ordered to look for Ellen Estabrook.

He had asked Tyler to issue rather unusual instructions to the plain-clothes men around the Hervey residence. They were to make no attempt to halt anyone who might approach the house, but were to permit no one to depart. It was a weak plan, but knowing the supreme egotism of Barter, Bentley felt that the old scientist would deliberately accept such a challenge. He wouldn't mind risking the loss of a minion.

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"He controls his puppets from his hideout, Tyler," Bentley explained, "and won't hesitate to send them into danger since it can't touch him. And he watches every move they make, too. He's made some television adaptation of his own. I'll wager, if he so desires, he can see us sitting here right now, even perhaps hear what we say. I can fancy hearing him chuckle, and Tyler...?"

"Yes?"

"I can see old man Hervey on an operating table with Barter bending over him, working fiendishly. Behind Barter are cages of apes."

"But how could he transport apes to his hideout?"

"He could manage to smuggle anything anywhere. Money paves the way to any accomplishment, Tyler. We needn't concern ourselves with how he does it, but with the fact that he must surely have apes in his hideout."

There came suddenly an imperious ringing of the doorbell.

Bentley and Tyler leaped to their feet, their hands streaking for their automatics which they had placed within easy reach on the table. Side by side they sprang for the door, and flung it open.

A chill of horror ran through Bentley.

"Mother of God!" cried Tyler.

"Mr. Hervey!" shrieked Timkins. The secretary, noting the figure which toppled so grimly into the room, fainted. The thud of his body followed the thud of the old man's body to the floor.

In that first moment of overwhelming terror, all three men noted that Hervey's skull-pan was missing.

"Look after details here, Tyler!" cried Bentley, quickly recovering himself. "I'm after whoever brought the old man home."

Bentley was racing down the path for the street, where a man in chauffeur's uniform was hurling himself into a limousine, while bullets from half a dozen plain-clothes men, racing to head him off, sang about his ears. But the stranger gained the driver's seat and the limousine was away like a shot. The police car was rolling as Bentley leaped upon the running board, then eased in beside the driver.

"Don't stop for anything!" cried Bentley. "Keep that car in sight!"

The car headed downtown at breakneck speed.

CHAPTER V

To Broadway's Horror
Bentley would never forget that nightmarish ride downtown. It was a dream as terrifying and ghastly as had been his experience in the African jungles when he had been Manape. Added to the utter fear of the ride was his fear for the safety of Ellen Estabrook. Caleb Barter, so far, was utterly invincible. It seemed he could not be beaten or outwitted in any way. But Bentley set his lips tightly.

Caleb Barter must have some weak spot in his insane armor, some way by which he could be reached and destroyed—and Bentley swore to himself that it would be he who would find that weak spot.

The limousine ahead was going at dangerous speed. The police chauffeur beside Bentley crouched low over the wheel as he drove. His eyes never left the speeding limousine. People on the sidewalks stared in astonishment as the two cars flashed downtown.

The leading car sped on, the driver obviously expecting ways to open in the last second before threatened collision. He passed cars on the left and the right. There were times when his wheels were up on the curb as he went through lanes between cars and sidewalks. He was determined to go through.

Only Bentley understood that the driver ahead was an automaton, a man whose brain did not know the meaning of fear. He knew that from his hideout Caleb Barter was directing the flight of the escaping car. He could fancy the old man of the apple-red cheeks, sitting in a chair in his hideout, his hands in the air as though they gripped the wheel of a car, sweat breaking forth on his cheeks as he guided his puppet through the press of cars.

But by now in that uncanny way that sometimes happens the streets were being cleared as if by magic before the flight of one whom all observers must have thought a madman. Only Bentley knew that the driver ahead was not a madman.

His own car careened from side to side. Bentley wondered what the chauffeur would think if he knew he was driving a race against one of Barter's supermen. He would perhaps have realized that no man could possibly follow with any degree of success. The police driver had succeeded so far only because, Bentley guessed, he felt that where any other man could drive, so could he.

Only Bentley knew that the driver up there was not a "man" in the normal meaning of the word. He wondered who "he" really was—not that it mattered greatly, for the entity required to make "him" a normal man had perhaps been destroyed, or had become part of some giant anthropoid to be used later in Barter's ghastly experiments.

"I wonder if Tyler will send out calls for police cars in other parts of the city to try and cut off the runaway," shouted Bentley above the shrieking of the motor and the wailing of the siren. "Are any police cars equipped with radio?"

"Several," answered the police chauffeur. "And they are able to cut in on various public radio stations, too. By this time warnings are being heard on every blaring radio in Manhattan."

The two cars sped on. For a brief space the car ahead took to the sidewalk. Suddenly a human body was tossed violently against the side of a building, and the fleeing car passed on. As the pursuing car passed the spot Bentley knew by the shape of the bundle that the enemy had killed a woman. At that speed he must have crushed every bone in her body. In a matter of seconds the information would be telephoned to radio studios and people would be warned to take to open doorways when they saw cars traveling at undue rates of speed.

"I'm a better driver than he is!" yelled the police chauffeur, out of the side of his mouth at Bentley. "I haven't killed anyone yet."

The words had scarcely left his mouth when a blind man, tapping his way with a cane, came from behind a building at an intersection and stepped into the gutter. The fool, couldn't he hear the shrieking of the siren? But perhaps he was deaf, too.

The police chauffeur turned sharply to the left and for a second Bentley held his breath expecting the careening car to turn over. If it did it would roll over a dozen times, and destroy anything that happened to be in its path. But with a superhuman manipulation of the wheel the police chauffeur righted the car, got it straightened out again, and was on his way. The old man had not been touched, but there was no doubt that he had felt the wind of the great car's passing.

The fleeing car was gaining now.

It rode madly down Broadway. The great pillared intersection where Broadway cuts through Sixth Avenue was dead ahead. The fleeing car continued on, crashing through, while cars evaded it in every direction, and into Broadway beyond. After it went Bentley, all other matters forgotten as he prayed to the god of speed to guide them through.

Two cars came out of Thirty-first Street. Their drivers saw their danger at the same time. But they turned different ways, and as Bentley's car flashed past them the two cars seemed welded solidly together. They were rolling across the sidewalk toward the huge plate glass window of a restaurant. Just as the pursuing car lost them as
they swept past, the two cars went through that plate glass window. Bentley, in his mind's eye, saw the two dead, mutilated drivers, and the passengers with them, he saw the wreckage of the restaurant, the mangled diners who sat at the tables nearest the fatal window.

"More marks against Barter," he muttered to himself. "How long will the list be before I'll be able to drag him down?"

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On and on went the two cars. People packed the sidewalks, but they kept close against the buildings. The streets were almost deserted now, for that warning had got ahead. Three other police cars were careening down the street, too. Bentley saw them with pleasure. Other cars would be coming in to head off the fleeing limousine. This one puppet of Barter's, at least, would be pocketed before he could find time to leap from his car and escape.

"Barter's sweating blood as he saws with both hands at an imaginary driver's wheel," thought Bentley. "When will he give up--and what will his driver do when Barter relinquishes control?"

For the first time the grim thought came to him. He knew that the creature there had the brain of an ape. What would an ape do if he suddenly found himself at the wheel of a car going down Broadway at eighty miles an hour? He would chatter, and jump up and down. The plunging car, with accelerator full on, would be out of control.

"God Almighty, I never thought of that!" yelled Bentley. "As soon as he sees he can't save his puppet he'll let him get out the best way he can, himself ... and that car will be traveling, uncontrolled, at eighty miles an hour."

As though his very statement had fathered the thought, two police cars swept into the intersection at Twenty-third Street and Fifth Avenue. The fleeing limousine was turning right to go down Fifth Avenue.

The police cars were brought to a halt to effectively stop the further progress of the speeding limousine. Three other cars plunged in to make the box barrage of cars effective. The fleeing car was trapped. Barter must know that. If he did know, it proved that he could see everything that transpired. The next few seconds would show.

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Bentley gasped as he put his hand on the driver's arm to have him slow down to prevent a wholesale pile-up in the busy intersection. He gasped with horror as he did so, for the fleeing car was now going crazy. It zigzagged from side to side. Now it rode the two right wheels, now the two left.

And suddenly the driver swung nimbly out through the left window, his hands reaching up over the top, and in a moment he was on the roof of the careening car.

"I've seen apes swing into trees like that," Bentley thought.

While the car plunged on, the creature stood up on the doomed limousine, and in spite of the fact that the wind of the car's passing must have been terrific, the ghastly hybrid jumped up and down on the top like a delighted child viewing a new toy or riding a shoot-the-chutes.

Suddenly the creature's right leg went through the top's fabric. It struggled to regain its footing as an ape might struggle to regain position on a limb in the jungles.

At that moment the fleeing car crashed mercilessly into the two nearest police cars ahead. The men inside had expected the driver to slow down to avoid a collision. How could they know what sort of brain lurked within the driver's skull? They couldn't ... and three policemen paid with their lives for their lack of knowledge as their bodies were hurled beneath a mass of twisted wreckage, crushed out of human semblance.

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The hybrid atop the fatal car was hurled through the air like a thunderbolt. His body passed over the railing of the subway entrance before the Flatiron Building and Bentley knew he had crashed to his death on the steps.

The police car had already come to a stop, and Bentley was running toward the subway entrance.

The shapeless bleeding bundle on the steps no longer even resembled a man. Fortunately nobody had been struck by the hurtling body; and, miraculously enough, Barter's pawn was not yet quite dead.

Moans of animal pain came through his bleeding lips. The eyes scarcely noticed Bentley, though there was a slight flicker of fear in them. Then, in the instant of death, even that slight expression passed from them. Bentley saw the scarline about the skull.

And now Bentley knew that Barter was missing no slightest move, that he saw everything....

For the ghastly hybrid on the steps raised his right hand in meticulous salute ... and died. It was an ironic, grotesque gesture.

Plain-clothes men gathered around.

"Take his fingerprints," said Bentley quickly. "Then telegraph the fingerprint section, U. S. Army, at Washington, for this man's identity."

An ambulance was taking aboard the three mangled policemen as Bentley stepped back into his car for the ride down to Washington Square to see what dread thing had happened to Ellen Estabrook.

CHAPTER VI
Ellen Estabrook was almost in hysterics when Bentley reached her. She had been immediately picked up by plain-clothes men and had thought herself captured by minions of Barter. She had been panic-stricken for a moment, she told Bentley, and it had taken her some little time to be persuaded that she was in the hands of police.

But Bentley's heart was filled to overflowing with gratitude that he had been able to safeguard Ellen against Barter. He never doubted it had been Barter who had telephoned her. And even now he fancied he could hear Barter's chuckle of amusement. Barter was watching, perhaps even listening. Bentley felt that the madman was just biding his time. Barter could have taken Ellen in this attempt, but hadn't tried greatly, knowing himself invincible, knowing that he could take her at any moment if it was necessary. And he might take her even if it were not necessary, since he had warned Bentley she must be removed.

The police car raced back uptown so that Bentley could inform himself of any new developments in the Hervey case. Ellen snuggled against him gratefully. "You'll have to stick close to me," said Bentley, "until something happens, or until the exigencies of service draw me away from you. Then it will be up to Tom Tyler to look after you."

"I can look after myself," she retorted spiritedly. "I'm over age and not without brains...."

"Yet you went to Washington Square," said Bentley gently. "Didn't it even seem strange to you that I would have selected such a place as a rendezvous?"

Ellen turned away from him and her lips trembled. His gentle thrust had hurt her.
"But I would have sworn it was your voice, Lee," she said. "And--I still think it was!"
"I tell you I didn't phone you to meet me in Washington Square!"
"But you told me you had talked with Barter for a long time on the headquarters phone, didn't you? Remember that you are dealing with the cleverest and maddest brain we know of to-day. What if he had merely talked with you to get a record of your voice? Suppose a voice were composed of certain ingredients, certain sounds. Suppose those ingredients could somehow be captured on a sensitized plate of some kind! Edison would have been burned as a sorcerer a few centuries before he invented the wax record. Twenty years ago who would have thought of talking pictures... voices permanently recorded on celluloid?"
"But the talkie films merely parrot, over and over again, the words of actual people. When I talked with Barter this morning I certainly said nothing about meeting you at Washington Square."
"But the tone, the timber, the frequency of your voice! Lee, suppose he had gone a step further than the talkies and had found a way to break the voice apart and put it back together to suit himself...?"
"Good Lord, Ellen! It sounds crazy... but if you would have sworn that voice was mine, then mine it may have been, speaking words with my voice that I never spoke personally. But wait until we find out for sure. We're just guessing."

But the idea stuck in his mind and he believed in it enough to tell Tyler, upon arriving at the Hervey residence, to warn every man named on the list of the Mind Master to make no appointments over the telephone, no matter how sure they were of the voices at the other end of the wire.

It sounded wild, but was it?

That night Ellen and Bentley occupied rooms which faced each other across the hall in a midtown hotel, and plain-clothes men were on duty to right and left in the hall. There were men on the roof and in the lobby, in the garage, everywhere skulkers might be expected to look for coigns of vantage from which to proceed against Ellen Estabrook. Bentley knew quite well that Barter would not drop his intention against Ellen, especially since he had failed once already.

Tyler and Bentley sat in Bentley's room drinking black coffee and discussing their plans for the next day. The latest paper had contained another manifesto of the Mind Master! the second man on his list was to be taken at ten o'clock the next day. The man was president of a great construction company. His name was Saret Balisle; he was under thirty, slim as a professional dancer, and dark as a gypsy.

"But what does Barter want with all these big shots?" asked Thomas Tyler. "Just what is the point of his stealing their brains and putting them into the skull-pans of apes, if that's what you think he has in mind?"
"The Barter touch," said Bentley grimly. "At first he probably intended to kill just any men and make the transfer, and then use his manapes to send against the men he wished to capture, and through whom he intended to gain control of Manhattan. Then he decided, since he had learned to control his manapes, by radio I suppose, that it would be an ironic touch to make virtual slaves of the "key" men he had chosen for his crusade."
"But why the transplantation at all, even if the man is mad? He reasons logically. Only his premises are unthinkable... and he builds successful ghastly experiments on top of them...."
"He claims he wishes to build a race of supermen," Bentley answered. "His reason for the brain transference is therefore plain. An anthropoid ape has a body which is several times as hardy, durable and mighty as that of even the strongest man, but the ape has not the brain of a civilized man. A specialized man, one with a highly developed brain, generally has a very weak body. He's constantly put to the necessity of taking exercise to keep from growing sick. Therefore the ape's body and the man's brain would seem, to Barter, an ideal combination. That nature didn't plan it so troubles him not at all. He will make a fool of nature!"

"I wonder if we'll get him. Nobody knows how many lives have been lost already."

"We'll get him, Tyler. I'll bet anything you want to name that your men have walked back and forth across his hideout. I'll bet that decent, respectable people live within mere yards of him and do not know it. We'll get to him the second he makes a mistake of any kind. Maybe he'll make his first one when he tries to get Saret Balisle--Good Lord, I forgot something. Tyler, phone again and ask Headquarters if the coroner found anything strange about the head of the men I chased down Fifth Avenue."

Tyler phoned.

"Yes," he said, clicking up the receiver, "he had bits of metal which looked like aluminum in his scalp; but the autopsy shows that it came from outside somewhere."

"It's part of Barter's radio control," muttered Bentley, "it must be! It has to be ... and I didn't think of looking for it at the time."

"..."

Long before sunrise Bentley and Tyler repaired to the office of Saret Balisle, letting themselves in with keys which had been furnished them last night. It had been decided that Balisle would not try to run away from the threat of the Mind Master, but would be in his office as usual. If he ran, and got out of touch with the police, Barter would get him anyway and nobody would be the wiser.

Balisle had grinned and shrugged his shoulders, but the waness in his cheeks showed that he didn't take the threats lightly, considering what it was thought had happened to Harold Hervey.

"I wonder," said Tyler as they walked through the cool of the morning to the Clinton Building on lower Fifth Avenue, where Balisle had his offices, "how Barter keeps his apes with men's brains from trying to break away from him when he has to divert his mental control to other channels?"

Bentley hesitated, seeking a logical answer. It seemed simple enough when the answer came to his mind.

"Suppose, Tyler," he said, "that you wakened from a nightmare and looked into a mirror to discover that you were an anthropoid ape? That you were incapable of speaking, of using your hands save in the clumsiest fashion? When it came home to you what had happened to you, would you rush right out into the street, hoping that the people on the sidewalks would understand that you were a man in ape's clothing?"

"Good Lord! I never thought of that!"

"You would if you'd ever been an ape. I know the feeling."

"Then Barter's manapes are more surely prisoners than if they were sentenced to serve their entire lives in the deepest solitary cells in Sing Sing! How horrible--but still, they yet would have a way of escape."

"Yes, simply break out and start running, knowing that the crowd would soon take and destroy them. Right enough--but even when one knows oneself an ape it isn't easy to destroy oneself."

"..."

They entered the offices of Saret Balisle and looked about them. It was just an ordinary office. They looked in clothes closets and in shadowy corners. They took every possible precaution in their survey of the situation. They looked for hidden instruments of destruction. They looked for hidden dictaphones. They were extremely thorough in their preliminary preparations for the defense of Saret Balisle.

At five minutes of ten o'clock Balisle was at his desk, pale of face, but grinning confidently.

There were men in uniform in the hallways, on the roof, in the windows of rooms across the avenue. Bentley and Tyler should have felt sure that not even a mouse could have broken through the cordon to reach Saret Balisle.

But Bentley was doubtful.

He went to the window nearest Balisle and looked out. Sixteen stories down was Fifth Avenue, patrolled in this block by a dozen blue-coats and as many more plain-clothes men. Saret Balisle seemed to be impregnable.

But at ten o'clock exactly, a blood-curdling scream came from the room adjoining Balisle's, where some insurance company had offices. The scream was followed by other screams--all the screams of women....

For just a moment Bentley and Tyler whirled to stare at the door giving onto the hall, their hands tightly gripping their automatics.

"God Almighty!" It came in a choked scream from the lips of Saret Balisle, simultaneous with the falling of a shower of glass in the room.
Tyler and Bentley whirled back.

A giant anthropoid ape stood on the window sill, and the brute's left hand held tightly clasped the ankle of Balisle, holding him as a child holds a rag doll.

The ape swung Balisle out over the abyss.

Tyler flung up his automatic.

"Don't!" shouted Bentley. "If you shoot he'll drop Balisle!"

Bentley felt sick and the bottom seemed to drop out of his stomach as the anthropoid, still holding Balisle as lightly as though he didn't know he held extra weight at all, dropped from sight.

Tyler and Bentley leaped to the window, looked down. The ape had dropped safely to the ledge of the window just below. He held on easily with his right hand while Bentley and Tyler swayed dizzily. The anthropoid still held Balisle by the ankle.

A head looked out of the window to the right. A frightened woman.

"God!" she choked. "That beast came out of the clothes closet. We've been wondering why we couldn't open it. He must have been inside, holding it."

A hundred men, all crack shots, stood helpless on roofs, in windows across the street, in the street below, while the anthropoid ape dropped slowly down the face of the Clinton Building toward the street.

How would Barter lead his minion free of this tangle when, as was inevitable, the brute reached ground level?

CHAPTER VII
Strange Interview

Bentley and Tyler were to learn in the next few minutes how great was the executive ability of Caleb Barter. He had created a mighty puzzle, each and every bit of which must fit together exactly. Time was important in making the puzzle complete—and the puzzle changed with each passing second. As the anthropoid went slowly down the face of the Clinton Building, Bentley was sure that Barter controlled every move and saw every slightest thing that transpired. He knew very well that of all the great organization which had been set to prevent the taking of Saret Balisle, not a man would now shoot at the ape for fear of jeopardizing the life of Balisle.

And yet Balisle was being spirited away to pass through an experience which would be far worse than a merciful bullet through the brain or the heart. Bentley knew he would be justified in the eyes of humanity if he ordered his men to fire upon the anthropoid, even if he were sure that Balisle would die. But as long as there was life there was hope, too, and he couldn't bring himself to give the order.

The ape dropped down the face of the building as easily as he would have dropped from limb to limb of a jungle tree. The sixteen stories under him did not disconcert him at all. Bentley had a suspicion about this particular ape, but he wouldn't know for a time yet whether his suspicion had a basis in fact. He couldn't think of a man—especially an old man like Harold Hervey—making that hair-raising descent. Yet ... if he were controlled, mind and soul, by Caleb Barter the Mind Master...?

"Tyler," said Bentley tersely. "The instant the ape reaches the street I'm going to order your men to fire. You will shout out to them now, designating which ones shall fire. Be sure they are crack marksmen who will drill the ape without hitting Balisle—and, by all means, have them wait so that the ape's fall won't send Balisle crashing to death."

"Maybe I'd better tell them to rush him?"

"Maybe that's better, but remember they're dealing with a giant anthropoid, in strength at least, and that somebody is likely to be fatally injured. In addition the ape may tear Balisle apart as soon as men start to close in on him. Barter will have thought of that, and all he'll have to do to make his puppet perform is to will him to do it. No, they'll have to shoot—and tell them to aim at his head and heart."

- - -

Tyler leaned out of the window and shouted to the men across the street.

"Shoot as soon as the ape reaches the sidewalk!" he cried. "Be careful you don't hit Balisle."

And from Balisle himself, muffled and frightened, came a sudden cry.

"Shoot now! I'd rather fall and have it over with!"

There was a moment of silence. Bentley almost gave the order to fire when the ape was at the twelfth story, but he held his tongue by a supreme effort of will.

Balisle looked down. It must have been a terrifying experience to swing above such a horrible abyss by one leg, and for a moment Balisle lost his head. He screamed and started to grapple with his grim captor.

"Don't, Balisle!" shouted Tyler. "You'll make him lose his balance. Hang on as you are and we'll get him when he reaches the street."

"What good will it do?" screamed Balisle, his voice taking on a high keening note as the ape dropped again,
this time from the twelfth to the eleventh floor. "He slipped it over a hundred men to get me this far. He'll find a way to beat you when he reaches the street, too."

Bentley had a sinking feeling that Balisle spoke the truth; but even so, he could not see how anybody, even Barter, could walk through the trap which was being tightened around the descending anthropoid.

It made Bentley dizzy to watch the slow methodical descent of the anthropoid. He could fancy himself in Balisle's position and it made him sick and faint. He understood the desperation which caused Balisle to make yet another attempt to battle with the ape.

Then the ape did a grim thing.

He paused on the eleventh floor, and crouching on a window sill, deliberately snapped Balisle's head against the wall of the Clinton Building! In his time Bentley had slain rabbits exactly like that. Balisle hung now as limp as a rag and blood dripped from his mouth and nose. But Bentley knew, as his face went white at the sound of that sharp, thudding blow that Balisle had not been killed by it.

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Savage oaths burst from the lips of policemen who saw the action of the ape.
"He acts like a human being! An ape wouldn't have thought of that!"

The words came hysterically from the lips of a woman who, frightened though she was, could not tear herself from the window to the right of where Bentley and Tyler leaned out to stare down.

Bentley smiled grimly. What would she think if he told her gravely that the creature crawling down the face of the building was not quite an ape?

So far the public didn't know what the Mind Master schemed. He'd spoken of stealing brains, but that had meant nothing to the general public. Just the maudlinings of a madman, perhaps.

At the third floor the anthropoid hesitated. He seemed to be gazing all around, noting the preparations which were being made to trap him at the street level.

"An ape wouldn't do that," muttered Bentley. "A man would. The man in that manape is showing through—but he won't be able to force himself free of Barter's domination. If he could he'd probably throw Balisle down now to keep him from being ... well, treated as Barter intends to treat him."

The ape dropped to the second floor. Silence seemed to hang over Fifth Avenue. Ugly gun muzzles protruded from every window across the street. Scores of rifles were aimed down from windows in the Clinton Building, to drill the ape through from above.

At that instant a limousine whirled into Fifth Avenue, traveling fast, and ground to a stop under the ape.

"What's this?" cried Bentley.

"That's Saret Balisle's car," said Tyler. "There's nobody in it but his chauffeur. The fool! Does he think he can take his master away from the ape singlehanded?"

"That looks like foolhardy loyalty, but I'm not so sure that it's Balisle's chauffeur at the wheel. Tyler, send somebody down to wherever it is that Balisle parks his car."

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But before Tyler could move to obey, the anthropoid ape made his surprise move, and did a thing which no ape would have thought of doing. He hurled Balisle toward the limousine. The somersaulting body struck the roof of the car, crashed through the fabric, and dropped into the tonneau.

At the same instant the limousine leaped to full speed ahead. A shower of bullets smashed windows and scored deeply and menacingly the brick walls all around the giant anthropoid which for a second still crouched on the second-story ledge. The ape whirled and crashed through the window at his back.

"Tyler, send half a dozen cars after that limousine. They simply have to catch it. But they mustn't fire for fear of killing Balisle. Have the car followed right to Barter's hideout. The men in this building will scatter at once through the building. We must trap that ape!"

The whole police organization was in a turmoil.

Sirens screamed as police cars flashed after the fleeing limousine which carried Saret Balisle away. Doors slammed and windows crashed as two score policemen scattered through the building, armed with riot guns and pistols, seeking the ape.

Tyler, after barking the staccato orders which set his men in motion, turned to Balisle's secretary.

"Quickly, the number Balisle calls when he wants his automobile sent around."

The girl gave it, and Tyler called the number.

"Are Mr. Balisle's car and chauffeur there?" he asked.

He swore explosively and hung up the receiver.

"Another killing," he said. "Balisle's car is gone and the garage people have just found his chauffeur, almost
ripped to pieces, in another car left at the garage for storage.

"That means this ape is armed with metal fingernails, just like the one that killed the insurance man in the
Flatiron Building. That means he'll be doubly dangerous when caught. The murdered chauffeur will have to wait for
a few moments while we capture the ape."

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Shouts and shots rang through the Clinton Building. The ape was going wild, crashing through doors and
windows as if they weren't there. His mad bellowing sounded terrifying in the extreme, so deep and rumbling that
the air seemed to tremble with its menace.
But in the end there came a chorus of triumphant shouts which told that the giant ape had been surrounded.
Bentley and Tyler raced in the direction of the sounds. From all directions came the sounds of footfalls as other
plain-clothes men raced to be in at the death. Bentley held his automatic tightly gripped in his right hand. He knew
exactly where he was going to aim if the ape were not dead when he reached him.
The creature had been cornered in the areaway between two banks of elevators and had climbed up the cage as
high as he could go. He was just out of reach of human hands, even had there been any men there with the courage
to try to take him alive. A white foam dripped from the chattering lips of the anthropoid. His red-rimmed eyes
flashed fire. Bentley noted the little metal ball on top of the creature's head.
Deliberately he stopped, raised his automatic, and held it steady while he pressed the trigger with the extreme
care which a sharp-shooter knows to be necessary ... and a bullet ploughed through the top of the ape's head.
The little ball vanished, and the ape released his grip suddenly. His chattering died away to an uncertain
murmur, the fire went out of his eyes, and he fell to the floor. No bullet had yet actually struck him, for he had
whirled into the window from the second-story ledge simultaneously with the barking of the policemen's rifles and
pistols. He had escaped there--but here he was not to escape.
Bentley and Tyler both lifted their voices to shout warnings to the policemen, but their voices were drowned in
the savage explosions of a dozen weapons, in the hands of men who probably thought the creature was in the act of
charging ... and the ape sprawled on the floor, his legs and arms quivering.

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Half a dozen men rushed forward, weapons extended.
"Keep back!" yelled Bentley, rushing in.
He stood over the ape, staring intently at his glazing eyes.
"Tyler," snapped Bentley, "have everybody fall back beyond earshot."
Tyler issued the orders. Bentley shouted, "Quickly, quickly!" knowing he had little time.
Then, with Tyler beside him, he knelt beside the ape.
"I know you can't talk, but you can answer me by nodding or shaking your head. You are Harold Hervey, aren't
you?"
The eyes of the ape were hopeless. Tyler gasped, staring at Bentley as though for a moment he thought him
crazy. But in the next instant he doubted his own sanity, for the ape, slowly and ponderously, nodded his head.
"I'm going to name a number of places where I think you might have been taken," went on Bentley. "In each
case nod or shake your head. Is it near Sixth Avenue?"
Slowly the great head moved, more slowly even than before; but it nodded.
"Where? Below Twenty-third Street?"
Again the ponderous, agonizing nod.
Bentley went on.
"Below Fourteenth Street?"
Again the nod, barely perceptible this time.
"Below Christopher Street?" asked Bentley.
This time the head shook from side to side, ever so slightly.
"Two blocks above Christopher?"
But this question was never destined to be answered. The giant anthropoid in whose skull-pan was the brain of
Harold Hervey, entirely controlled by Caleb Barter, until Bentley had shot the little metal ball from his head, had
died.
Bentley rose and looked down at the anthropoid for several seconds.
"Barter will hate to lose this creature," he said. "He probably has just the number of apes he needs--and Tyler,
here's a hunch: he'll need an ape to take the place of this one! Get me the best surgeon to be found in Manhattan, and
get him as fast as you can!"
"Good God!" ejaculated Tyler. "What do you want a surgeon for? What are you going to do?"
"Barter needs an ape to take the place of this one. I shall be that ape!"
The Mind Master
By Arthur J. Burks
Conclusion

[ Illustration: "Now, Bentley," said Barter, "I'll explain what I intend doing."]

CHAPTER VIII
The Mute Plungers

It would be difficult to comprehend the nervous strain under which Manhattan had been laboring during the past thirty-six hours. The story of the kidnaping of Harold Hervey had not been given to the newspapers, for an excellent reason. If Hervey's financial enemies knew of his kidnaping and death they would hammer away at his stocks until they fell to nothing and his family, accustomed to fabulous wealth, would have been reduced to beggary.

The Mind Master himself, up to a late hour, had given no word to the newspapers in his "manifestoes." The Hervey family held its breath fearing that he would--for the newspapers would have played the story for all the sensationalism it would carry. Bentley, when this matter was called to his attention, wondered. Barter had kept his own counsel for a purpose, but what was it? There was no way of asking him.

The story of the mad race down Broadway in pursuit of the limousine which had returned the lifeless body of Hervey to his residence had been a sensational one, and the tabloids had given it their best treatment. The chauffeur who had crawled out like a monkey atop his careening car, to lose his life when catapulted into the entrance to the Twenty-third Street subway station: the three policemen whose lives had been lost because the chauffeur hadn't stopped as they had expected him to, the kidnaping of Saret Balisle by a great ape hadn't yet broken as a story, nor the murder of Balisle's chauffeur.

But everybody knew something of the story of the naked man of the day before. Many were the speculations as to what had ripped and torn his flesh from his body, along with his clothes. What manner of claws had it been which had sliced him in scores of places as though with many razors?

Men and women walked the streets apprehensively, and many of them turned at intervals to look behind them. No telling what they would do when the story of Balisle's kidnaping by an anthropoid ape and a queer mute chauffeur got abroad. To top it all the police pursuers lost the Balisle limousine and Saret Balisle had taken his place among the lost.

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Bentley knew as soon as the disgruntled and rather frightened police officers returned to the Clinton Building with the news that Balisle had got away from them in the stolen Balisle car, that already the ill-fated young man was probably under the anesthetic which Caleb Barter used on his victims.

"Tyler, do you know a surgeon who can do any surgical job short of brain transplantation?"

"Yeah. There's a chap has offices in the Fifth Avenue Building. He's probably the very best in the racket. Maybe it's because of his name. It's Tyler."

"Some relative of yours?"

"Not much. He's just my dad--and one of the world's finest and cleverest."

"Will he listen to reason? Can he perform delicate operations?"

"He's my dad, Bentley, and he'd do almost anything I asked him so long as it was honest ... and he could switch the noses of a mosquito and a humming bird so skillfully that the humming bird would go looking for a sleeping cop and the mosquito would start building a nest in a tree."

"Get him here. No--has he an operating room where all sound can be shut out? I've got a hunch I'd like somehow to try and drop a screen around us as we work. Maybe your dad would know if he sees me turning into an ape he would just chuckle and pass up the trap."

"He's got a lead armored room where he keeps a bit of radium."

"That's it. Talk to him. No, not on the phone. You'll have to figure out some way to do it so that you can be sure Barter isn't listening."

"I'll manage. I'll send him a note."

"Your messenger will be killed on the way to him."

"Then I'll go myself."

"And Barter will watch everybody that goes into his office or comes out, and mark down each person as possibly being connected with the police. However, you figure it out."

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When Tyler had gone and the dead "ape" had been stretched out in one corner of Balisle's office, and covered with something to cloak its hideousness, Bentley telephoned Ellen Estabrook.
"Have I been making any appointments with you this morning?" he asked her cheerily.
"Please don't jest when things are so terrible. Have you seen the latest papers?"
"No. What do they say?"
"There's a lot of the story I'm thinking about. You'd better read it right away. It's an extra, anyhow. The newsies ought to be calling it around you somewhere--and where are you, anyway?"
Bentley informed her, and told her, too, that he would be with her as soon as he possibly could. Taking the usual masculine advantage he decided to tell her now what he wouldn't have had the heart to tell her to her face, that he was planning a rather desperate stunt to reach Barter, and would consequently be away from her for an indefinite period.
"But I'll see you first?" she said after a long hesitation. Bentley could hear her voice tremble, though he knew she was fighting desperately to keep him from noting the catch in her voice.
"Yes, nothing will happen until--well, not until I've seen you again."
Just as Bentley hung up the receiver the extra was being cried. Some two hours had now elapsed since Balisle had been taken away, and now the newsboys were shouting the headlines.
"Extra! Extra! All about the big Wall Street crash! Hervey fortune entirely swept away!"
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Bentley sent an office boy out for the paper and spread it out on the desk to digest it as quickly as possible.
"One million shares of Hervey Incorporated," read the black words in a box on the first page--a story in mourning, "were dumped on the market at eleven o'clock this morning. Four men seem to have been behind the queer coup. One of them had a power of attorney from Harold Hervey himself, and he had the shares to sell. So many shares were dumped that the bottom fell out of the stock. Others holding the Hervey shares, fearful that they would get nothing at all, also began to dump, and every share thus dumped was bought up quickly by three other men about whom nobody knew anything, except that they paid with cash. The strangest thing about it all was that the three men who bought Hervey Incorporated, seemed to be dumb-mutes, for they didn't say anything. They acted through a broker, and indicated their purchases with their fingers in the conventional manner and tendered cards as identification! They were Harry Stanley, Clarence Morton, and Willard Cleve--addresses unknown, history unknown.
"Nothing, in fact, is known about any of the three or the little white-haired, apple-cheeked man who sold so heavily in Hervey Incorporated. That the three mutes did not buy the shares sold by the little white-haired man would seem to indicate that all four of them worked together ... but it is only a supposition as they were not seen together and apparently did not know one another. But the three mutes constantly ate walnuts. All four men, who among them knocked the bottom out of Wall Street, and wiped away the Hervey fortune, slipped out in the excitement inspired by their rapid buying and selling, and seemed to vanish into thin air."
Bentley didn't know much about the stock market, but it seemed to him that Barter had managed a theft of mighty proportions. With a power of attorney, which he had wrung from Hervey after his capture, he had managed to possess himself of Hervey's shares. In themselves they were worth millions. Even at a fraction of their price Barter would realize heavily on them. Selling quickly he would force the price far down. Then his puppets--and Bentley had no doubt that Stanley, Morton and Cleve were his puppets--bought all other shares offered by panic-stricken investors in Hervey Incorporated at a tiny fraction of their value. Far less, naturally, than Barter had made by selling his loot.

The purchased shares Barter could hold for an increase. Hervey Incorporated was good and its price would go up again, and Barter would sell and gain millions.
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That is how Bentley saw it, and his lips drew into a firmer, straighter line as, half an hour later, he explained it all to Ellen.
"It's desperate, dear," he whispered in her ear. "Manhattan's financial structure has been shaken to its foundations. But that isn't all by any means. Barter has performed his horrible operation on two of New York's most brilliant men. It was a Barter gesture to send 'Harold Hervey' to capture Balisle, and the horror of it staggered me."
"Lee," said Ellen, "understand this: that if I have no word from you within seventy-two, no, forty-eight hours after you get started on this scheme you have in mind, I'm going to get through to Barter somehow. If I put an ad in the paper and tell him where I'm to be found he'll surely make another attempt to take me in. If he's captured you, or uncovered the trap you're laying, then I'll at least be with you. If he kills you he kills me. If we can't live together we can die together."
Bentley kissed her fervently, trying not to think what it would mean to him now if she were in the hands of Caleb Barter. Secretly he intended having Tyler keep her so closely guarded that she couldn't possibly do anything as foolish as she had suggested.
The late evening papers carried another manifesto of the Mind Master to the effect that the remaining eighteen men named on the original list were to be taken before noon of the next day.

Oddly enough eighteen kidnapings were reported from various places in Manhattan, Brooklyn and Queens.

"So," thought Bentley, "he's afraid to send out normal apes to capture his eighteen key men. Maybe his control over them is not perfect. That's it. I suppose—he needs human brains before he can exercise perfect control. I suppose Stanley, Morton and Cleve did the kidnapings."

Late that night Bentley kissed Ellen good-by, told her to keep up her courage, and repaired to the rendezvous arranged for by Thomas Tyler and his surgeon father. In the operating room was the cold body of the anthropoid that had successfully abducted Saret Balisle.

"Young man," said Dr. Tyler, "just what is it you want me to do? I'm not asking for your reasons. Tommy tells me you know what you're doing. I must say though, I don't believe that story of brain transplantation. No doctor would believe it for a minute."

Bentley looked at the dead ape.

"You'll take Tommy's word for it that that ape kidnaped Saret Balisle to-day and took him down the face of a building, sixteen stories to the ground?"

"Of course. Tommy wouldn't string his father."

"Well, part of your surgical work to-night will make it necessary for you to look at that creature's brain. You'll recognize a human brain in that ape's skull. After you've made that discovery, here's what I want you to do: I'll strip to the skin; then I want you to place the skin of that ape on me, so that from top to toes I am an ape. You'll have to do the job so perfectly that I'll be an ape—as soon as, under your watchful eye and Tom's, I have mastered all the ape mannerisms the three of us can remember. Can you do it?"

Tyler senior shrugged.

He motioned his son and Bentley to help him lift the huge ape body to the operating table, and under the glaring light above he set to work with instruments which gleamed like molten silver, then became a sullen red....

CHAPTER IX

The Furry Mime

"Listen, boys," said Dr. Tyler, after he had removed the skin of the ape, and for a few brief seconds had examined the brain, to shake his head in astonishment. "I've an idea that may help you. It would be impossible for you, Bentley, to play the ape well enough to fool this mad Mind Master. But a hitherto unknown type of ape has just been discovered in Colombia. I read the story of it in a scientific journal to-day. The ape is more manlike than any other known to science. You shall be that ape, brought in during the night by a famous returned explorer. There will be great interest in you now that the story of Saret Balisle's kidnaping has broken. With the attention of New York upon you, certainly your presence will interest Caleb Barter."

Tyler senior rummaged in a pile of papers on his desk and brought forth the story he referred to, which also carried a picture of the Colombian ape.

"It would be impossible for me to change your shape and add to your size sufficiently to make you a real giant anthropoid. You'd have to be twice as deep through the chest; you'd have to have bowed legs as big as small tree trunks; you'd have to have a sloping forehead. No, it's impossible, for I'd have to equip you by padding to an impossible degree, and a scientist would only need to touch you to know you as an imitation ape. But if you are made up as the Colombian ape—"

Bentley quickly interrupted.

"The idea is excellent. I was dubious before about my chances of success, but as an ape of a new species I have a far better chance, and my inevitable human behavior won't be so noticeable."

Dr. Tyler measured Bentley as carefully as a tailor, proud of his skill, measures a particular, wealthy customer.

"You will almost suffocate," he said, keeping up a running monologue as his inspired hands worked with forceps and scalpels, "but I can make plenty of air vents in the ape skin which will allow the pores of your skin to breathe. If they are hidden under the hair they will scarcely be noticed, unless of course Barter sees what we are doing here and suspects from the beginning."

"I can stand the discomfort for as long as may prove necessary," said Bentley grimly, conquering a feeling of terror as he already saw himself in the role of an ape, a role previously played in which he had suffered the torments of the damned, "and anything is preferable to the wholesale carnage which Barter is doing. In seventy-two hours he has wrecked the morale of Manhattan. I shall try to get it back. Tyler, will you make every effort to guard the other eighteen men named on the Mind Master's original list?"

"Of course," but Tyler said it dubiously. Barter had proved it almost impossible to outwit him. In their hearts
both Bentley and Tyler knew that Barter would make good his boast to take the eighteen men he had named. It seemed a grim price Manhattan must pay to be finally rid of Barter's satanic machinations.

When Bentley, stripped naked, quietly announced his readiness to take his place on the operating table, Tyler senior took a deep breath, like a diver preparing to plunge into icy water, and looked questioningly at Bentley.

"I'm ready, sir," said Bentley quietly. "Let's get on with the task."

Dr. Tyler set to work with amazing, uncanny speed. He had never been more skilful in closing sutures of the flesh in any of his myriad of operations. He was a man inspired as he labored on the task of changing Lee Bentley from a normal human being to a Colombian ape.

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While the surgeon worked his son telephoned to the Colombian explorer whose return from Latin-America had been mentioned in the day's news. He couldn't explain anything over the telephone, he said, but would Doctor Jackson come at once to the private offices of James Tyler, surgeon?

Doctor Jackson grumbled, but the urgency in the voice of Tyler convinced him that the thing was important. He promised to be on hand within an hour. It then lacked a few minutes of three o'clock in the morning.

Next at Bentley's suggestion--and he talked quickly and eagerly to keep his mind off the ordeal he knew he was facing--Tyler got the curator of the Bronx Zoo out of bed and asked him to wait upon Doctor Tyler immediately.

At four o'clock Doctor Jackson and the curator entered the room where Surgeon Tyler had performed a miracle.

Doctor Jackson stepped back in amazement when he noted the manlike ape which leaned with arms folded against one wall of the operating room. His eyes were big with amazement.

He studied Bentley for several minutes, while no one spoke a word.

It was the curator who broke the strained silence.

"So this is your Colombian ape," he said. "I read the news story, but I understood that the ape you had found had been killed in the attempt to capture it."

Surgeon Tyler spoke easily.

"That news story," he said, "was to prevent Doctor Jackson from being annoyed by visitors eager to see his find. As a matter of sober fact Doctor Jackson captured the Colombian ape alive and is now about to turn it over to the zoo. Understand me, Doctor Jackson?"

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Still the explorer said nothing. For a moment longer he stared at Bentley; then he walked over to him.

"The hair is different," he said as though talking to himself. "The Colombian ape's hair is of a slightly finer texture. But that could be explained away as I allowed only the merest bit of information to the reporters to-day. I can add a supplementary story in the next newspaper which will explain that the coarse fur of the Colombian ape is the only thing about it which makes it resemble a giant anthropoid."

Jackson had walked to Bentley without fear and ran his fingers through the hair as he spoke.

"I know it's a man, and some surgeon has performed a miracle," he said. "Just what is it you wish me to do?"

"You've read the stories relating to the Mind Master, Doctor?" asked Bentley suddenly. How strangely his voice came from the body of an ape!

"I've read some of them," answered Jackson. "Is this a scheme whereby you hope to trap the Mind Master?"

"Yes."

"Then depend upon me for any assistance I can render. As a scientist I understand fully the power for evil of a mad genius of our class. This Mind Master should be ruthlessly destroyed."

"Thank you," said Bentley, stepping forward. "You know, perhaps, how the Colombian ape behaves, enough that you can coach me how to walk, how to gesture?"

"Certainly. It will take perhaps an hour to prepare you to fill your role creditably."

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Jackson's face flushed with enthusiasm. He was launched on a task which fired his interest. He was an authority on apes and anything relating to them inspired him.

"Sit yourself on a chair," said Jackson. "The Colombian ape sits upright like a man."

Bentley seated himself as Jackson had bidden him.

"Now spread your legs apart awkwardly, with the knees straight. The Colombian ape doesn't exactly sit on a chair or a rock or a tree, he leans against it in a half sitting position."

Bentley quickly assumed the awkward strained position suggested by Jackson.

Jackson stepped up to him and placed Bentley's arms, un bent, so that his fists hung down outside his wide-apart knees, and cupped his fingers so that they seemed perpetually in the act of closing on something.

"You can't possibly take the proper position with your toes," went on Jackson, "for it's beyond a man's ability to curve his toes as he does his hands. The Colombian ape's toes are prehensile."
"Can't you say in your next news story, Doctor," suggested Bentley, "that the Colombian ape, the nearest animal relative of man, seems to be in an advanced stage of evolution. Can you not say that the Colombian ape is by way of losing the use of his toes?"

"Many scientists know that to be untrue," said Jackson, "but perhaps we can help you through your scheme before they begin denying details in the newspapers. Too bad we can't send secret suggestions to all anthropologists that they remain discreetly silent until the mantle of horror is lifted from Manhattan. But of course we can't, since we'd betray ourselves. Our only hope, then, is to work at top speed."

"I am as eager as anyone to finish a particularly horrible task," said Bentley.

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Under Jackson's instructions Bentley walked up and down the room. His shaggy shadow on the several walls as he turned, marched and countermarched at Jackson's commands, filled Bentley with self-loathing. He found himself repulsive. His body perspired freely impregnating the ape skin with a harsh odor that was biting and terrible in his nostrils. It was sickening. He tried to close his mind to the repulsiveness of what he was doing.

He walked with a swaying, side-to-side gait, something like a sailor's rolling walk, while his arms swung free at his sides as though they merely hung from his body. The Colombian ape walked like that, Jackson said.

"How about the intelligence of the Colombian ape?" asked Bentley.

"We shot the only specimen so far seen by man before we could discover any facts bearing on his intelligence," said Jackson.

"Then you can safely say that he possesses intelligence far beyond that of known apes," said Bentley quickly, "somewhere, let us say, between that of the lowest order of mankind and civilized man."

Jackson nodded his held dubiously.

"It seems," he said unsmilingly, "that I arrived in the United States at exactly the right time! You would have failed signally to convince the Mind Master in the role of an African great ape."

Bentley managed a short laugh. How horribly it came from the lips of an ape!

"I'm not overly superstitious," he said, "but I regard this as a good omen. I feel we're sure to succeed in what we are planning. I think Barter will surely wish to experiment with me if he thinks I am in reality a great ape from Colombia. He'll welcome the chance to examine any ape which so nearly resembles man. I'm an important link in his plan to create a race of supermen. At least that's how we must hope that Barter will estimate the situation when my story is told in to-morrow's papers."

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An hour before dawn Doctor Jackson, weary from his arduous instruction of the equally exhausted Bentley, pronounced Lee a satisfactory "ape."

"Now here's where you come in," said Bentley tiredly to the curator. "I'm to be taken now to a cage in the Bronx. During the rest of to-day you will quietly instruct your attendants that their guard to-night at the zoo must not be too strict. I must be in position to be stolen by the minions of the Mind Master."

Now the full significance of the desperate expedition upon which Bentley was embarking came home to them all. Their faces were white. Bentley shuddered under his ape robe. His mind went catapulting back into the past to the time when he had been Manape. This was much like it, save that all of him was now encased in the accouterments of an ape and he did not suffer the mental hazards which had almost driven him insane when he had been Manape, with the perpetual necessity of keeping close watch over his own human body which had held the brain of an ape.

He stiffened. "I'm ready," he said.

Immediately upon arrival the curator had been asked to have a closed car, quickly walled with a mixture of lead and zinc--which Bentley and Tyler hoped would thwart the spying of Caleb Barter--brought to Tyler's door.

Three or four zoo attendants entered with a cage when Bentley pronounced himself ready. They stared agape at Bentley and their faces went white when he strode toward them upright, like a man.

Bentley would have spoken to reassure them, but Tyler signaled him to keep silent. The zoo attendants might talk and entirely spoil their scheme.

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Two hours later, long before the first crowds began to arrive at the Bronx Zoo, Lee Bentley was driven from his small cage in the car, into a huge cage at the zoo. From a dark corner, in which he crouched as though overcome with fear, he gazed affrightedly out across what he could see of Bronx Park.

"When I used to feed the animals here," he said to himself, "I never expected that the time would come when I myself would be caged--and one of them."

The curator had ridden out with the cage. But, save for making sure of the fastening on the big cage, he paid no heed to Bentley. He treated him, of necessity, as though he were actually the Colombian ape he pretended to be.
From now on until he succeeded or failed, Lee Bentley was an ape from the jungles of Latin-America.

Just before the crowds could reasonably be expected to begin arriving, curious to see this strange thing Doctor Jackson had brought from Colombia, an attendant arrived with a freshly painted sign.

"Colombian Great Ape," it read, "Presented to Bronx Zoo by Doctor Claude Jackson."

It seemed to close entirely behind Lee Bentley the vast door which separated the apes from civilization. Miserably he crouched in his corner and awaited the coming of the curious.

CHAPTER X

Grim Anticipation

A numbing fear began to grow upon Lee Bentley as the ordeal of waiting began.

Naturally he could not eat the food given usually to apes and of course he could not be seen calmly eating bacon and eggs with knife and fork. And because he couldn't eat he was assailed by a dreadful hunger, which, however, he managed to fight down partially. He smiled inwardly as he looked ahead and understood that despite the warnings not to feed the animals, children of all ages, from four years to sixty, would surreptitiously toss peanuts and walnuts into his cage.

He felt a little hopeful about it. They would at least allay his hunger.

But no, he could not do that, either. Nobody had thought to ask Doctor Jackson how a Colombian ape manipulated his food. Even a certain clumsiness in that respect might start questions which would cause the public to doubt the authenticity of Jackson's find.

Bentley decided to sulk. The ape he was supposed to be could reasonably be expected to resent captivity and would probably go on a hunger strike. He would do likewise and be in character if he starved.

He crouched in a far corner as the first comers began to arrive. They were fathers and mothers with their children, and the older people carried, usually, newspapers under their arms. Bentley wished with all his soul that he could see one of the papers close enough to read the headlines.

However, when the crowd was not too thick, Bentley waddled nearer to the wire mesh which separated him from the curious crowd and through lids which were half closed as though he slept, he managed to glimpse a few excerpts from the paper:

"Police department redoubling their precautions to prevent Mind Master from capturing eighteen intended victims."

"Hideout of Mind Master still undiscovered. When will the public be delivered from the stupidity of the police?"

"Doctor Jackson returns from Colombia, bringing a living specimen of an ape hitherto unknown to civilized man, but more like him than any ape hitherto known. Visitors may see the creature to-day in the Bronx Zoo."

That was the story which had brought out the visitors who were forming, moment by moment, a bigger crowd before Bentley's cage. Bentley managed a glimpse of a woman's wrist-watch after what seemed an age of trying to do so without his intention becoming plain to the too bright children who crowded as close to the cage as attendants would permit. It was ten o'clock. It would be at least twelve more hours before Bentley could reasonably expect any action on the part of Barter. Barter would now be concentrating on his plans to kidnap the eighteen men he had first named.

Bentley tried to make the time pass faster by imagining what Barter would be doing. By now his labors must be titanic. He must have separate controls for each of his minions, and there were many times when he must control several at one time, thus making his task akin to that of a man trying to look two ways at once, while he rolled a cigarette with one hand and shined his shoes with the other. Certainly the concentration required was enormous.

Yet, no matter how complicated became his puzzle, Barter was its master because he was its creator, and Bentley hadn't the slightest doubt that, until someone actually penetrated Barter's stronghold, he would not be stopped.

Bentley knew that at the very first opportunity he would destroy Caleb Barter as he would have destroyed a mad dog or stamped to death a deadly snake. The life of one man would rest lightly upon his conscience, if that man were Caleb Barter.

Perhaps, though, he could learn many of Barter's secrets before he destroyed him. Properly used they might prove boons to mankind. It was only the use Barter was putting them to that threatened to fill the world with horror and bloodshed.

"Mama, why don't he eat?"

"Hush," said a woman, as though afraid the Colombian ape would hear and become angry; "don't annoy the creature. He looks fully capable of coming right out at us."
But the child who had been admonished began to juggle a bag of peanuts which he managed to throw into the
cage. Bentley stooped forward, sniffing suspiciously at the sack, while a wave of hunger made him feel weak and
giddy for a moment. He just realized that he hadn't eaten for almost twenty-four hours. His time had been so filled
with action and excitement that there hadn't been opportunity.

"I hope," he said to himself, in an effort to drive away thoughts of food, "that Tyler will take every precaution
to prevent Ellen from doing something foolish."

Knowing that he could no longer communicate with her, could no longer be absolutely sure that she was still
out of Barter's clutches, he suffered agonies of fear for her safety.

"If Barter places a hand on her I'll tear his skin from his carcass, bit by bit!" he said, unconsciously clenching
his fists.

"Oh, look, mama, he's shittin' his fists as though he wanted to fight somebody! I'll bet he could whip Dempsey,
couldn't he, mama?"

"Perhaps he could, son. Hush now, and watch him. There's a good boy!"

It brought Bentley sharply back to his surroundings and proved to him that he must not allow his mind to go
wool-gathering if he did not wish to give himself away. What if, in an access of anger, he happened to speak his
thoughts aloud? He could imagine the amazement of the crowd.

The day wore on.

At noon a strange horror seemed to travel over the Bronx Zoo, and within a short time every last visitor had
precipitately departed. Bentley could now safely approach the wire mesh and look out and around over a wider
radius.

Right under the wire mesh was a newspaper someone had thrown away.

By pressing tightly against the mesh Bentley could see the headlines.

"Mind Master successful on all counts!"

So that's what had turned the crowd to stony silence with very fear? They had all fled, wondering who would be
next. Bentley had heard the shouting of the extra on the distant streets, but it had been so far away he hadn't heard
the words. One solitary newspaper had appeared among the Bronx crowd and the story it carried under startling
scareheads had passed from brain to brain as though by magic ... and the crowd had fled.

Bentley stared down at the newspaper in horror, a horror that was in no way mitigated by his having fully
expected Barter to succeed. Mutually, with no words having been spoken to express the thought, Tyler and Bentley
had conceded to Barter the eighteen victims he had named.

Nothing could be done to stop him. His brains were greater than the combined wisdom of the city of New
York.

What else was in that paper?

Bentley stared at it for an hour, and finally a vagrant breeze, for which he had hoped and prayed during that
hour, whipped across the park and stirred the paper. He read more headlines.

"Lee Bentley disappears! Believed kidnaped or slain by Mind Master!"

How had that story got out? Surely Tyler would have kept that from the press. Following on the heels of the
Colombian ape story, Barter would almost surely put two and two together to arrive at the proper total.

Bentley read on:

"Ellen Estabrook, fiancée of Lee Bentley, disappears mysteriously from her hotel room. Guarded by a score of
police, not one has yet been found who knows anything of her disappearance or saw her leave. Nobody seems to
have seen anyone go to her room or leave it. Our police department must have fallen on evil days indeed when
twenty crack plain-clothes men cannot keep one woman under surveillance."

Something was radically wrong, but Bentley could not piece the whole story together, simply because he had
been out of touch for so many hours that the thread of it had slipped from his fingers.

Suddenly Bentley noticed that a solitary man was watching him curiously, a dawning amazement in his face.
Bentley roused himself and saw that he was standing against the mesh, fingers hooked into it above his head, his
weight on his left leg, his right foot crossed over his left, his head thoughtfully bowed.

To the amazed man yonder the "Colombian ape" must have looked remarkably like a condemned man
clutching the bars of his cell, awaiting the coming of the executioner.

Bentley recovered himself and sat down on the floor of the cage in the loose easy manner an ape would have
used.

He forced himself to sit thus until evening, when the last curious one vanished from the park and darkness
began to fall.
Then excitement at the approach of a hoped for denouement began to rise in his heart like a rushing tide. Would Barter fall for the ruse? Or did he already know that the Colombian ape was Lee Bentley? In either case, Bentley thought, the Mind Master would take action during the first hours of darkness. Bentley was gambling desperately on what he knew to be characteristic of Caleb Barter.

CHAPTER XI
In the Dead of Night
Bentley knew that if Ellen were in the hands of Caleb Barter the mad professor would probably do her no harm, but use her as a club against Bentley, and through Bentley, the Manhattan police. He did not believe that the Mind Master would consider performing the brain operation on Ellen. Caleb Barter's scheme seemed to consider only men, and men of substance.

No, Ellen would not be harmed, he felt, but that made him feel no easier, knowing that she might be in the hands of Barter.

How could he know of Naka Machi, and the refined vengeance of the Mind Master?
The last visitors had left the park and comparative quiet settled over the zoo. Save for the sounds of animals feeding and the occasional cursing voices of attendants there were no sounds. Not since Bentley had taken his place in the cage had anyone spoken to him. He had never felt so lonely and uncertain in his life.

Now there was utter darkness and silence.

And then before his cage appeared a tiny spot of light. If Barter's minions expected to deal with a powerful ape they would come prepared to subdue him by whatever means seemed necessary. Bentley had no wish to be injured, and yet he must make some show of resistance in order to allay any possible suspicion that he wished to be stolen.

There was a faint gnawing sound at the wire outside the cage. Mice might have made that sound, sharpening their teeth on the wire. Bentley decided to feign sleep. Had Barter come personally to supervise his capture? That didn't seem reasonable as Barter must realize that all his effectiveness depended upon his ability to retain control of whatever organization he might have built up—and his central control must be his hideout.

Then he would be sending some of his puppets to get Bentley.

Would they be apes with man's brains? Impossible. Apes could not travel from place to place without attracting attention, especially if they traveled unguarded and went casually to a given destination as men would go. So, if his puppets were not men in the normal meaning, then they were "apemen."

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The wire came softly down. Bentley hoped that no attendant might come blundering around now to spoil everything. His heart pounded with excitement.

At last he was going to see Caleb Barter again at close quarters.

"I shall destroy him," he told himself.

The shadowy outlines of two men came through the severed wires. Bentley still pretended to be asleep. He wondered if Barter's televisory equipment included any arrangements permitting him to see in the dark, and knew instantly that it did. How else could these two puppets have come so unerringly to the proper cage in Bronx Park?

No, Bentley did not dare allow himself to be taken easily in the hope that his actions would pass unnoticed. But he waited until the ropes began to fall about him, testing the strength of his adversaries by mental measurement. By their uncertain, hesitating actions he knew that he dealt only with the forms of men—forms which were ruled by brains which had not in themselves intelligence enough to perform the acts they were now performing. Ape brains in the skull-pans of men. The brains in themselves were only important because they were living matter which was being used as a sensory sounding board by which Caleb Barter, the Mind Master, transmitted his commands to the arms and legs and bodies of his puppets.

Bentley sprang into action. He growled and snarled at the two men who were trying to take him. Only two men? Surely Barter would have sent more than two men to take a great ape! He knows I'm not a true ape, thought Bentley. He's giving me a challenge. He knows I wish to get to his hideout and he is making sure that I get there.

But Bentley was only guessing. Calmness descended upon him as he realized that he was soon to face a crucial test.

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Just now, however, he struck out at the two men who were striving to bind him. They were husky chaps, and one of them packed the wallop of a real fighter. Neither man said a word to him, and when his own hands clawed at them—how would he dare strike out with his fists?—the men made queer animal sounds in their throats. Bentley could well remember how helpless, hopeless and lost he had felt when his brain had been in the skull-pan of Manape.

The brain of an ape could not be a terribly intelligent instrument in the first place. What thoughts, if apes had thoughts at all, coursed through an ape brain which found itself inside a human skull?
The answer to that was simple: only such thoughts as Barter originated and transmitted through the mental sounding board. After all, the material of the human brain and the ape brain were perhaps very much alike, and Barter was working on a sound scientific principle in making a sounding board of an ape’s brain.

Bentley shuddered through the fur that covered him. Knowing the sort of creatures with which he had to deal—men in all things save their intelligence—made him tremble with nausea. Such grim, ghastly hybrids. But he stopped shuddering when he recalled that he still dealt with men after all—at least with one man, Caleb Barter. When he thought of these two "apemen" as separate entities of a human being of many personalities—Caleb Barter—he was able to plan some method by which to deal with them.

So now he fought, seemingly with the utmost savagery, to keep them from binding him with ropes. Even as he fought, however, he fancied he could hear the grim chuckling of Caleb Barter. What did Barter know?

Bentley knew that eventually he would discover the truth.

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In struggling against the two "men" his hands encountered the knobs on their heads—the tiny metal balls protruding from the top of the skull at the point where, in babies, the head remains soft during babyhood. He could have broken connection with Barter for these two by jerking the controls free. And then what? He would never get through to Barter and would release in Bronx Park two men whose strange type of madness, when they were discovered, would startle the countryside. Two men with the savagery of anthropoid apes! He shuddered as he carefully refrained from disturbing those balls.

At last Bentley was quite securely bound, only his lower limbs remaining free so that he could walk, though the length of his steps was strictly limited. His hands were entirely and securely bound, and the significance of this fact did not escape him. Barter knew that he did not need his hands to aid him in walking! Of course the newspaper story released by Doctor Jackson had reported the Colombian ape as being able to walk exactly like a man.

But that didn't prevent Bentley from nursing the suspicion that Barter already knew. Even if he did, it could in no wise alter the determination of Bentley. His task was to penetrate the hideout of Barter—and he was on the way there now.

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With little attempt at concealment the two men led Bentley to a long black closed car outside the park. They met no one. The two men avoided discovery with uncanny ease. Bentley thrilled with excitement. He felt he knew approximately where Barter's hideout was.

It was useless, to speculate, however; time would show it to him.

Bentley was tossed into the tonneau of the car. His two captors, moving with the precision of men in a trance, took their places in the front seat. Bentley struggled for a time against his bonds. He wanted to sit up and peer out, to see what way they took so that he would know where he was when he reached Barter's hideout. But of course, even if he shook his bonds free he did not dare rise to a sitting position, for to control the intricate handling of his two puppets, Barter's attention must have been pretty carefully fixed upon this car.

So Bentley contented himself with waiting.

Lying on his back on the floor of the car he tried to see what he could through the car windows. He knew when he was carried under an elevated system by the crashing roar of trains over his head. He knew he was being carried downtown, but he wasn't sure that this was the Sixth Avenue elevated.

How could he find out the road they were traveling without sitting up and looking at street signs?

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He felt he didn't dare do that. He'd be as careful as possible on the off-chance that Barter really believed him a Colombian ape, when the benefit of surprise would be with Bentley.

The car progressed downtown at a normal speed. It stopped for red lights and obeyed all other traffic regulations. Barter was taking no chance on losing more of his puppets.

Bentley suddenly gasped with horror as he remembered something. Eighteen important men of Manhattan had been kidnapped that day by Caleb Barter. Would Bentley be forced to watch the mad professor perform the eighteen inevitable operations?

Perspiration poured from every pore as he visualized the horror he might be compelled to witness when he was finally taken into Barter's hideout. The ape skin clung to him as though it were actually his own. There were even moments when Bentley feared that it might grow to him.

But he put the feeling of horror from him with the thought that if Ellen were in Barter's power, Barter might even be forcing her to anesthetize for him while he performed his grisly slaughter.

Bentley's courage returned and now it seemed to him that the journey would never end, so eager was he to discover whether or not Ellen had eluded the hands of the Mind Master.

CHAPTER XII
A Woman of Courage

Caleb Barter smiled warmly at the woman who had come to him almost as though in answer to a prayer. He admired her flashing eyes and the lifted chin which spoke of pride and courage.

"I had thought of improving the feminine strain of the race also," he told her, but almost as though he spoke to himself, "but I realized that it mattered little the stature of the mothers of the race as long as the fathers were made virile. But if all women were like yourself, Miss Estabrook, the race would not require the improvement it is now my duty to bestow upon it."

Ellen stared directly into the eyes of the white-haired old man. As she looked at him she found it hard to believe that one so gentle from outward appearances had such a vast, grim power for evil. In repose his face was kindly, though there was something out of character in the fact that it was so apple rosy. And his lips were far too red.

"Where," she said quietly, fearlessly, "is Lee Bentley?"

Barter raised his eyebrows as he stared back at her. So far she had not looked around at this great room into which he had had her conducted; she had seemed interested only in her mission, whatever that might be.

"You mean that delightfully rude young man?" he asked sardonically.

"You know well enough whom I mean! Where is he?"

"Then he is not to be found in his usual haunts?"

"He has disappeared."

"And you come out seeking Professor Barter because Bentley has disappeared! It is almost as though you had previously arranged with him to come seeking me if, at a certain time he failed to return from some mysterious rendezvous."

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Barter's face was now a mask of uncanny shrewdness. In a few words he had pierced through Ellen's secret of why she had deliberately placed herself in the way of Barter's minions in order to be taken, and now he had used the words of her own questions to form a weapon against her. Ellen gasped in terror.

Had she made a hideous mistake? Had she, by failing to wait for word from Bentley, ruined all his well laid plans?

Barter now stood before her, his eyes almost shooting fire.

"Tell me quickly," he began, "for a second she thought he would put his hands on her, "what sort of plan is he making to betray me into the hands of my enemies, who are the enemies of super-civilization because they are my enemies?"

"I know of nothing," said Ellen stoutly, hoping that she had not, after all, betrayed the fact that she knew Bentley had started to work out an unusual scheme. The details she didn't know, for Lee hadn't told her. "But I do know, what all the world knows, that he was helping the police against you. Naturally, then, when he vanished I thought of you. Besides you had already warned him that you would remove him in your own good time. He caused you the loss of two of your puppets and I thought, naturally enough, that you would try to remove him to some place where he could not operate so successfully against you."

"That's all?" queried Barter eagerly. "You don't know of some special scheme that has been worked out to trap me?"

"I know of no scheme. Now that I am in your hands, Professor, what do you intend doing with me?"

Barter stared at Ellen for several minutes.

"I haven't captured Bentley ... yet," he said at last, slowly, "but I shall--no doubt about that. It is inevitable--as inevitable as Caleb Barter. I can use him in my labors for humanity. How I treat him after he is taken depends somewhat on you. You may therefore consider yourself a sort of hostage. I have much medical work to perform. Have you ever been a nurse?"

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Ellen recoiled in horror. "You don't mean you would ask me to help you perform those horrible--" She stopped abruptly before her sudden tendency to hysterics should make her say things to anger Barter too far.

"So," he said quickly, "you think my brain operations are horrible, eh? Well, you shall see that they are not horrible; that Professor Barter, the greatest scientist the world has ever produced, is really preparing to prevent civilization from utterly decaying."

"And afterward?" asked Ellen. "I know that eventually you will be taken and that the people will destroy you, tear you limb from limb. But you will never believe that. Tell me, then, what you plan to do with me."

For a brief time he considered the matter.

"I am an old man," he said at last, musingly, "but I am young in spirit and in body. It would be amusing to have a mate--but no, no, that would not do! The destiny of Caleb Barter is not linked with a woman. You would simply
hold me back. However, I have often been interested in miscegenation and its effect on the race if properly guided. My assistant Naka Machi, is one of the finest specimens of his race. Perhaps I shall arrange for you to mate with him, under conditions which I shall dictate, in order to experiment with your offspring...."

Ellen swayed, her face going dead white. She hadn't yet met Naka Machi, but his name told her enough. The thought of a Japanese, however, was far less repellent than the cold, calm way in which Barter spoke of using the offspring of such a union.

"I'll kill myself at the first opportunity," said Ellen suddenly.

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Barter put his forefinger under Ellen's chin in a paternal fashion. His eyes looked deeply into hers. She thought of what his fingers had done in the past ... those long slender fingers. His touch made her shudder.

But his eyes held her. They seemed like deep wells. Then they were like black coals advancing upon her out of the darkness, growing bigger and bigger as they came, with little flames in their centers also growing as they approached.

"You will submit your will to mine," said the soft voice of Caleb Barter.

His right hand was making swift snakelike movements back of Ellen's head. His voice droned on, but already it seemed to Ellen to come from a vast distance.

"Your mind will be concerned only with the welfare of Caleb Barter," droned on the voice. "You will think only of Caleb Barter; your greatest desire will be to serve him. There is nothing you would not do for him. Let your objective mind sleep until Caleb Barter wakens it; give your subjective mind into my keeping."

Beads of perspiration broke out on the cheeks of Caleb Barter as he worked quickly to place the girl entirely under his skilled hypnosis. At last she stood like a statue, her wide-open eyes staring into space, straight ahead. She did not move. She scarcely seemed to breathe.

"You will know that my home is your home, Ellen," said Barter softly. "You will feel that you are welcome here and that you love this place. It needs the attention of a loving woman; you will give it that attention. But you will be subservient always to my will. You will enter upon your duties."

Ellen Estabrook sighed softly as though with relief. Her hands went up to remove her hat, which she placed on a chair in a corner of the hellish laboratory. She removed her light coat and arranged her hair with skilled fingers. But even as she moved around the room of the long table her eyes stared vacantly into space. She was as much a puppet of Caleb Barter as were Stanley, Morton and Cleve. But, mercifully, she did not know it.

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Barter studied her for several moments; his eyes squinted. He was making sure that she was not duping him with pretense. Satisfied at last he turned his eyes away from her. He stepped to the porcelain slab set in the bronze wall of his laboratory and looked at the push-buttons marked "C-3" and "E-5". The red lights were on, indicating that the two puppets controlled by these two keys were returning toward their master. The lights had been green when Barter had begun his conversation with Ellen Estabrook, indicating that the two puppets were still going away. With a tremendous effort of will he had given them sufficient mental stimulus to keep them traveling without his direct will for the few minutes he would require for Ellen.

Now, however, he quickly donned the metal cap and the little ball, and inserted into the orifice in his cap the swinging key which connected by chain with the key which fitted into the slot under the button marked "C-3".

He had returned to his puppets just in time. "C-3" was Cleve, who was driving the car sent out to bring in the Colombian ape. As Barter got in touch with the car it narrowly averted a crash with a police car ... and the perspiration broke forth afresh on the body of Barter as he resumed control of his puppets.

The second creature, in the front seat of the car, was Morton, and it didn't matter particularly about him as he was not driving. But Morton was now becoming all ape. Barter did not wish to use any more of his mental energy than was necessary. He contented himself by sending his will into Cleve, who began at once to drive like a master. Whenever Morton, beside him, showed an inclination to jump out of the car or otherwise interfere with Cleve in his work, Barter had but to express the thought, and Cleve either pulled him back to his place beside him, or gave him a walnut from his pocket.

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Barter could as easily have had them change places, since he assumed control of either at will, or could have controlled a score simultaneously. But that would have required additional thought stimulus, and he wished to conserve his mental energies for the work which yet faced him.

Once he switched his attention from the heliotube which controlled Cleve--and through which, concurrently, he saw everything that transpired near Cleve, because his televisory apparatus and his radio control were co-workers on almost identical vibratory waves--to the area of Manhattan immediately surrounding his own neighborhood.

"Hmm," he said to himself, "the police are getting too close. As soon as I have completed my labors to-night I
shall destroy some of them as a warning to others to keep their distance."

Morton and Cleve drew up to the curb while Barter watched carefully on all sides, through the heliotube, to make sure that their arrival was unmarked by the police.

They climbed out quickly and raced across the sidewalk to the green gate which gave on a gloomy old court, inside which they were swallowed by the shadows from all eyes save those of Caleb Barter.

Five minutes after the strange trio had entered the "place," the great chrome-steel door of Barter's laboratory swung open.

"Morton and Cleve, my master," announced Naka Machi, bowing low and sucking in his breath with a hissing sound.

Barter's own puppets entered with the ape between them.

Barter walked fearlessly forward. He had slipped the key from the orifice atop his head. Morton and Cleve now stood listlessly, dumbly, looking with dead eyes at their master. Barter tossed them several walnuts each.

Then he turned his attention to the ape, rubbing his hands together with pleasure.

But the ape was behaving strangely. His eyes were staring past Barter. His hands sought to lift as though he would hold them out to someone; but the ropes prevented him. Barter turned to look. Ellen Estabrook stood beyond him, white of face, motionless as a statue. The ape was straining toward her.

Caleb Barter chuckled with understanding.
"Good evening, Lee," he said gently. "I've been expecting you!"

CHAPTER XIII
Where the Bodies Went

Bentley had been bound carelessly. Who could expect ape brains to devise clever bonds, even when controlled by Caleb Barter? And now it seemed that Caleb Barter had known all along; he said he had been expecting Bentley. No, that wasn't it. Barter had seen him yearning toward Ellen Estabrook, statuesque and wide-eyed on the other side of the room. If it hadn't been for the presence of Ellen he might have been accepted as an ape. Now it made little difference.

But his bonds were not tightly drawn. He found himself fighting them fiercely, trying to get his hands on Caleb Barter. He could see the scrawny Adam's apple of the mad scientist, and his fingers itched to press themselves into the flesh.

Caleb Barter stood his ground calmly. "Naka Machi," he said softly.

Suddenly Bentley felt a dull, paralyzing blow on his skull. He knew it had been intended to render him utterly unconscious. But Naka Machi hadn't taken into consideration that his skull was protected by the hide of an ape. He remembered, as he stumbled and fell forward, that the Japanese were wizards with their hands. That's why Naka Machi could knock him down, render him helpless, yet leave his brain as clearly active as before. Perhaps clearer, even, for now his brain did not act on his legs and arms, which were helpless.

Bentley felt as he imagined a patient on the operating table might feel when not given sufficient anesthetic, yet given enough to make him incapable of speech or movement. Such a patient would hear the soft discussions of the surgeons, see them prepare their instruments, yet be unable to tell them that he wasn't entirely unconscious.

Barter stooped over Bentley and rolled back the lids of his eyes.
"Good. Naka Machi!" he said. "He won't be in any position to do us an injury. Remain powerless, Lee Bentley, but retain your knowledge."

Barter, then, was familiar with the strange hypnosis which the blow of Naka Machi's hand had put upon Bentley. Barter had taken advantage of it to add to it a sort of mental paralysis, so that the condition would continue.

"You are in my hands, Lee," he said in paternal fashion, "but you can do me no harm. Since you were associated with me in the first of my great experiments you know much about me. I have never ceased to hope that you would one day understand and appreciate what I am doing for humanity and be brought to aid me. Perhaps if I force you to watch my efforts you will understand them and sympathize with my ambitions."

Bentley could say nothing. Barter's eyes seemed to leap at him growing large and glaring, just as the eyes of caricatured animals leap at the camera in trick motion pictures. Physically he was powerless. Only his brain was active.

"Remove this covering from him, Naka Machi," went on Barter. "Remove his bonds. You are about his size. Garb him in some of your own clothing."

Bentley had the odd feeling that he didn't need to turn his head to see things around him. His head felt huge, almost to bursting, and his eyes felt huge, too, so that he could see in all directions, as though his eyeballs had been fish-eye lenses.

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He studied Naka Machi. A nasty opponent in a fight, he decided. He hadn't figured on any opponent other than Barter. This man was almost as great. The skill of his fingers as he quickly removed the ape skin from Bentley, using scalpels taken from Barter's table, amazed Bentley with their miraculous dexterity. He cleaned Bentley's body with some solution in a sponge and clothed him in some of his own clothing which fitted fairly well.

Then he lifted Bentley from the floor and stood him against the wall.

Bentley was unbound. He tried to lift his hands but they refused to move. His feet, too, seemed anchored to the floor. His knees were stiff and straight. He might as well have been a wooden image for all his ability to get about.

Now Barter spoke.

"Come here, Lee," he said.

Bentley was amazed at the kindliness in Barter's attitude. He dealt with Bentley as though he had been his son. He felt that Barter genuinely liked him. It was rather amazing. Barter liked him but would remove him without compunction if he thought it necessary.

Bentley found he could move his feet, or rather they seemed to move of their own volition, as he crossed the room to stand before Barter.

"I'm rather proud of what I have been able to do, Lee," went on Barter, "and I am now entirely safe from the police. I've issued another manifesto telling the public that for each attempt made against me, one of the eighteen men captured by me to-day will die. Manhattan is the abode of terror. Here, see for yourself."

He extended to Bentley what seemed to be a pair of binoculars, but with the ear-hooks common to ordinary spectacles. He set them over Bentley's eyes and set them in place.

"Now you can survey New York as you wish."

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Bentley looked for a moment or two. Sixth Avenue was a deserted highway, on which red and green lights blinked off and on in the usual routine, signaling to drivers who were non-existent. There were vistas of deserted streets and avenues. There were some few living things--policemen in uniform, standing in pairs and larger groups, all concentrated in an area covering no more than twenty acres, which twenty acres included the hideout of Caleb Barter. Bentley knew that the hideout was under Millegan Place. He had recognized it coming in. A secret panel in a brick wall had opened to show a door where none was apparent. Then a circular stairway leading down into darkness to the room which Barter had gouged out of the earth and turned into a laboratory of hell.

"See the police?" asked Barter. "They know now where I am, but they are helpless because of my hostages. I shall now begin the operations I believe to be necessary. Then I shall issue another manifesto, telling the public that I am safeguarded by great apes whose ability will prove the correctness of my theory about the possibility of creating a race of supermen. My manifesto shall say that my apes must not be slain. It shall say that for every ape slain by the police one of my eighteen hostages will die."

Bentley would have gasped with horror, but he could not. Now he saw Thomas Tyler, his face a white mask of despair, in the midst of his helpless men.

"I'll give you a hand, somehow, Tommy," Bentley whispered deep down inside him.

"Now you shall see what I do, Lee," said Caleb Barter. "Naka Machi, bring the ape skin you took from my friend. Bentley, you will follow us."

- - -

Barter removed the strange glasses from Bentley's eyes, blotting out the deserted streets and avenues of Manhattan. Naka Machi followed behind Bentley, carrying the ape skin in which Bentley had penetrated the stronghold of Caleb Barter.

The chrome-steel door swung silently back and the three entered another room filled with blaring light. Without being able to look back Bentley knew that Ellen, white of face and staring, followed at their heels.

There was a long white operating table in this room, and a smaller chrome-steel door set some four feet above the floor in one wall.

"Naka Machi, the incineration tube," said Barter brusquely.

Naka Machi stepped to the operating table and dug into one of the drawers. He brought out a white tube, closed at one end, about an inch in diameter, eight inches in length, and snowy white.

"Concentrated fire, Bentley," said Barter. "Watch!"

Barter had Naka Machi cast the ape skin through the small steel door, beyond which Bentley could see a boxlike space large enough to accommodate two or three grown men, lying side by side at full length. It seemed to be indirectly lighted. The ape skin dropped on the floor of this compartment. Barter took the "incineration tube" and directed it on the skin. Bentley heard the clicking of a button.

The ape skin charred quickly, folded up, drew into itself, disappeared--and a fine gray ash settled on the floor of the compartment, like rain from the roof of the ghastly little space.
"Now you understand that I have solved the problem of disposing of the cumbersome useless bodies of my hostages, Lee," said Baxter, rubbing his hands together as though he washed them.

Bentley's heart leaped as Naka Machi placed the incineration tube on the operating table. It was close enough that Bentley could have reached it, had he not been utterly powerless to move.

"Naka Machi," said Barter. "Bring me ape D-4 and Frank Keller, the diplomat. Ellen, clear the operating table. Quickly, now! Bentley, stand against the wall and do not move--but miss nothing I do."

CHAPTER XIV
The Straining Prison

Then began a grim series of activities which combined to form a nightmare Bentley was never to forget, even as he prayed within him that no slightest memory of it would remain in the brain of Ellen Estabrook.

Naka Machi went back to the room which Bentley had first entered and returned almost at once with a tall thin man, immaculately garbed in gray, wearing a spade beard. His eyes were flashing fires of anger and of pride.

He stared at Barter.

"What is all this quackery?" he demanded. "Who is responsible for this unspeakable rigmarole?"

"Your words are harsh, Mr. Keller," said Barter suavely, "and you shall learn in good time what I intend. Had you followed my manifestoes in the news columns you would have known what I intend. I shall create a race of super--"

"You will at once release myself and the others with me," interrupted Keller.

But at that moment Naka Machi returned, leading a great ape which seemed as docile as though it had been drugged. Naka Machi raised his right hand quickly, so quickly Bentley could scarce follow the movement, and with the edge of his palm struck the tall gray man in back of the head. Keller's knees buckled. As he started to fall Naka Machi stepped close to him, gathered him in his arms and bore him to the table.

At Barter's swift instructions Ellen Estabrook, all unknowing, placed a cone indicated by Barter over the mouth and nose of Keller. Naka Machi struck the ape as he had struck the man, but he waited until he had persuaded the brute to take his place on the table near Keller's head.

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The ape sprawled. Naka Machi quickly twisted both Keller and the ape around so that their heads were toward each other, their feet pointing in opposite directions.

"Is that close enough my master?" came the soft voice of Naka Machi.

"Quite," said Barter, whose face was now a mask of concentration. "Cleve and Stanley and Morton?"

"They have been locked in their cages, my master," said Naka Machi. "Are you sure this man who came in the guise of an ape is safe?"

"I shall make sure. But do you remain close where you can render him harmless in case I have misjudged him."

Naka Machi turned baleful eyes on Bentley. The latter could see the hatred in them and for a moment was at a loss to understand it.

"I shall destroy him before he can put his hands upon you, my master," said Naka Machi.

"I do not wish him destroyed, Naka Machi," replied Barter. "That is enough of the anesthetic, Miss Estabrook. Naka Machi, my instruments, quickly."

Before he proceeded with his labors Barter stood in front of Bentley and stared at him for a moment. Bentley felt the strength flow out of him under the gaze of this man--a gaze he could not avoid. Barter smiled slightly.

"You will eventually join me of your own free will, Lee," he said softly.

"I would rather die a thousand deaths!" screamed Bentley, but the sound of his scream echoed and reechoed through his soul without coming out so that Barter could hear it.

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Barter's confidence in his ability to convert Bentley was assuredly a mark of his twisted mind, for he must surely have realized that Bentley would be the most injured by his schemes. But he seemed to associate him with the days of Manape, when Barter had proved to himself, to Bentley and Ellen Estabrook, that the operation he now planned in wholesale proportions was possible. Bentley could understand why Barter regarded him as a friend and colleague, and his animosity temporary--because as a subject of his first great experiment Bentley was a symbol of Barter's success.

Strange how easy it was to find logic in the reasoning of madmen, and to understand that logic!

Barter sprang back to his task.

"Naka Machi," he said, "take heed that you serve me well. Do you like this woman?"

"Yes, my master."

"If you continue in your loyalty to me, I shall give her to you."

Bentley's mind recoiled with horror. The shock of this cold statement was like another blow on the head. He
wanted to leap forward and set strangling fingers about the neck of Naka Machi. Ordinarily Naka Machi could
handle him with ease, but now that Bentley had heard the plan of Barter, he could have handled the Japanese with
superhuman strength. But he could not move. He strained against the bodily lethargy which held him prisoner. If
only he could move forward and grasp the incineration tube, he would turn it on Naka Machi and Barter....

But he could not move, could not fight off the lethargy which was like invincible prison walls around him.

He could move the tips of his fingers, he discovered ... but no more than that. The shock of Barter's calm
statement had cast off that much of his semi-hypnotic lethargy. A minute before he hadn't been able even to move
his fingers.

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Give him time, he told himself, while inwardly he bled as he struggled desperately to throw off the grim
hypnosis, and he would yet manage to save the lives of at least some of the eighteen, see that Ellen won free, and
destroy this hell-hole under Millegan Place.

Now incredibly slender instruments were busy near the heads of the two on the operating table--the ape and
Keller, the doomed man. As the knives and scalpels leaped to their work with startling dexterity and amazing speed,
Bentley strained again against his horrid invisible prison. If only he could save this man Keller from this horror ...
but it was useless.

The fingers of Barter worked swiftly over the skull of the ape, first. Naka Machi stood on one side of the long
table, Ellen on the other, near Barter. Bentley studied her face as the skull of the ape fell open under the hands of
Barter, and he knew she was unaware of what she was doing. Bentley had expected a crimson horror, but nothing of
the kind developed. Could Barter read his thoughts?

"I am an adept at bloodless surgery, Bentley," he said, while his fingers never ceased their swift manipulations.

Now Naka Machi held the skull-pan of the ape, from which he had removed the reddish substance which was
the ape's brain. This Naka Machi had tossed into the aperture where the ape skin had been destroyed.

The empty skull-pan of the ape awaited the brain of Keller.

Bentley could feel the sweat burst forth on him in every pore as he tried to throw off his awful inertia, to go to
the aid of Keller. If Barter should see the perspiration on his cheeks....

Bentley thought of Samson in the midst of his enemies, blind and beaten, of how he had prayed to be given
strength to pull down the pillars of the temple....

"Oh God," said Bentley to himself, "only this once give me strength to throw off these chains. Grant that I do
something to save the man from this horror."

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But he could still move only the tips of his fingers when Barter had finally closed the sutures in the skull-pan of
the ape, renewing again the ape's skull, with the brain of Keller inside. Keller was finished. He had not moved on
the table. Even his chest stood still, stark and lifeless. Barter had not troubled to restore Keller's skull-pan. What was the
need?

Naka Machi gathered up the carcass of Keller and bore it swiftly to the boxlike hole in the wall of the ghastly
room....

He thrust it in. He stepped back and caught up the incineration tube of concentrated fire ... and Bentley saw the
body of the murdered man shrivel up so quickly it seemed as though it had dissolved before his eyes. Down from the
ceiling of the hell-hole dropped the fine gray ash, all that remained--save the imprisoned brain--of Frank Keller, the
diplomat.

Now Bentley was cognizant of something else. With Barter's concentrated work on Keller, something of the
power went out of him. Ever so slightly Bentley could feel that Barter was lacking in strength. Some of his will,
some of the essential essence of his brain, of his soul, had been expended in the operation--and by so much was
Bentley enabled to move. For now he could move two full fingers on each hand. But how carefully he kept watch to
see that neither Naka Machi nor Barter noticed that he was bursting from his invisible prison.

If he could get that incineration tube. He'd do the necessary things first ... then direct the ray of it against the
softer portions of the hideout of Barter. The flame would eat through. Somewhere it would finally reach wood; that
was inflammable.

There would be smoke, and fire ... and in the end people would come. Tyler would be watching for a sign,
anyway. Barter had said that the police knew approximately where he, Barter, was located.

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"Now, Bentley," said Barter, "I'll explain what I intend doing while I rest a moment before the next ordeal. The
whole world is against me now because it regards my experiments as horrible, but if I prove to the world that I am
right, and that the men of my creation are supermen, in the end the world will be on my side. I can force it to obey
me, in time, but I prefer the world to serve me willingly, because it realizes that what I do for civilization should
really be done."

Bentley said nothing, because he could not speak.

"I'll send Keller to his office under my instructions," said Barter. "Of course I'll issue a manifesto, first, so that the city will know that it is not a wild ape that has escaped. When the new Keller, with the strong brain of Keller and the mighty body of an ape, appears at his office and proves to his people that he has been vastly improved by my experiment..."

Bentley tried to shut his mind to the horrible picture Barter's words drew before his eyes. Barter broke off short, while Bentley's mind seemed to rock with the shock of Barter's last statement. He saw a picture... a great office filled with many desks occupied by white-faced men and women... an ornate desk where a "manape" sat.... It was ghastly beyond comprehension. It must never come to pass.

Barter spoke again to Naka Machi.
"Bring me David Fator and ape S-19."
"Yes, my master," replied Naka Machi.

Again Bentley went through the horror from beginning to end. He could now move his toes. If only he could fall forward, grasp that incineration tube, turn it on Barter! With Barter unable to control him he would regain his senses in time, he hoped, to stave off the certain charge of Naka Machi, whose hatred for himself he now understood too well.

He hoped, if he were able to accomplish what he planned, that horror upon awakening would cause Ellen to faint. While she was out he could destroy the horror with the cleansing flame... and tell her she hadn't seen it, after all.

Bentley could feel the strength pour back into him. Barter was becoming moment by moment more intent on his labors. He was becoming careless with Bentley, not because he underestimated him but because he was intensely absorbed in his work.

By the time two more men had gone bodily into the incinerator and mentally into a pair of apes, the first ape, carelessly dumped on the floor, came out from under the effects of the drug.

"Stand over there in the corner, Keller," Barter said to the hybrid carelessly, "and remember that no matter how you may wish to escape you can only do so if I will. Remain quiet there and consider whether you will oppose me or obey me. Oppose me and your only escape is self-destruction. Obey me and possess the world!"

Bentley could imagine the horror and despair of "Keller," for he himself had known that horror and despair.

Now he could swing his wrists slightly. Naka Machi turned once with a sudden movement and almost caught him at it, and perspiration broke out on Bentley's face again. Thank God, Ellen realized none of what she was experiencing.

Two other men gave their lives at Barter's hands... yet Bentley had only regained sufficient possession of himself to fall forward on his face if he tried to walk, but even that was something.

Five men were gone now. Could he possibly regain muscular control in time to save the lives of some of the eighteen? As he watched the five go into the furnace, one by one, he began to despair of saving any of the eighteen, but with each operation Barter lost mental strength. If he lost in arithmetical progression as he had during the last five, Bentley estimated that he, Bentley, would be able to move his arms enough to grasp the incineration tube by the time Barter had finished his eighth transplantation.

So, the horror growing until nausea ate at Bentley's stomach like voracious maggots, he watched Barter destroy three more men and create godless monsters in their places. As each manape regained consciousness Barter told him what he had told Keller--and Naka Machi took them out, one by one, and placed them in their allotted cages.

Naka Machi placed the eighth man in the furnace, returned the incineration tube to the table.
"Now, oh God the Father!" moaned Bentley.

He leaned forward, striving with all his will to force his hands to go truly to their target as he fell. He had little or no control of his legs or knees. But let him once hold that tube in his hands...:

He fell soundlessly, his hands clutching for the tube. His fingers touched it as he crashed to the floor, and it fell near him. His fingers fumbled for the tube and now gripped it tightly.

From under the table, writhing and twisting, striving to break his mental bondage, Bentley saw the legs of Caleb Barter. He snapped the button on the tube and turned its open end toward those legs.
"I must not look into his eyes as he falls," thought Bentley, "or all is lost."

A terrible scream rang through the operating room. Barter was falling, crumpling as he fell, and as his body slid downward past the table edge, Bentley held the end of the tube toward it. As the bodies of the eight had shriveled, so
shriveled the body of Caleb Barter.

Ellen Estabrook screamed horribly, and sprawled on the floor within a foot or two of Bentley. Nature had mercifully sent her into momentary oblivion when the will of Barter, holding her in thrall, had snapped to show her the horror of what she did.

Naka Machi was screaming. Bentley was Bentley again, crawling forth from under the table. Naka Machi met him in a rush and dissolved before the deadly ray as though he had never existed. Its effect must have been a silent explosion, for a fine gray ash came down from the ceiling as the residue which falls when a soaring rocket has exploded and expended its power. The gray ash was Naka Machi, forever rendered harmless to Ellen.

Bentley walked over and stood looking at the manapes in their cages. What could be done with them? There was no hope, no possible way by which they could resume their normal lives, for of their human bodies there remained but heaps of fine powdery ashes.

Suddenly the manape Keller swept his great hairy arm out between the bars and snatched the tube from Bentley's hand. With a cry of mortal anguish Bentley recoiled from the cage. God! Now all was lost if the manape clicked on the deadly ray and swept it over the room.

Before he could formulate a plan of action, the manape pressed the fatal button. With a cry Bentley threw himself across the room to where Ellen lay unconscious, his only thought to somehow protect her from the tube.

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But the manape, Keller, swung the ray upon the other apes with the human minds, and they dissolved into ashy nothingness with bewildering rapidity. The keen mind of Keller was doing what he knew must be done for the good of everyone concerned.

Numbed with horror, Bentley saw the ray directed on Morton and Stanley. They fell silently and without protest....

Keller clicked off the button and looked over at Bentley. He alone remained of Barter's frightful experiment. He alone remained and it seemed that he was trying to tell Bentley something ... asking him to now take the tube and turn it full on the body which housed his human brain.

While Bentley hesitated, the manape bent down and placed the tube on the floor of the cage, the muzzle pointing inward. With a clumsy motion of a long hairy arm he reached out and snicked on the button, then placed himself within its deadly range. Keller vanished and the ray bit into the wall back of the cage; began to eat through.

Bentley leaped to his feet and tore across the floor. He plunged his trembling hand through the bars of the cage, switched off the button and lifted the tube.

There were the remaining normal apes. They could have been saved for transportation to the zoo, but horror was on Bentley and he used the tube again, and yet again....

And there were the keys. He pulled them from their slots in the porcelain slab, in case there should be other "Stanley-Morton-Cleves" abroad of whom he knew nothing....

He turned the tube against the red lights and the green lights.

Then he turned the tube upward and held it steadily. He watched the charred hole grow bigger and deeper in the high ceiling....

When at last he heard the approaching clang of the fire engine bells and the screaming triumph of police sirens, he carefully snicked off the button of the tube and returned to lift the form of Ellen in arms that were strong to hold her.

The end.
The star Mira was unpredictably variable. Sometimes it was blazing, brilliant and hot. Other times it was oddly dim, cool, shedding little warmth on its many planets. Gresth Gkae, leader of the Mirans, was seeking a better star, one to which his "people" could migrate. That star had to be steady, reliable, with a good planetary system. And in his astronomical searching, he found Sol.

With hundreds of ships, each larger than whole Terrestrial spaceports, and traveling faster than the speed of light, the Mirans set out to move in to Solar regions and take over.

And on Earth there was nothing which would be capable of beating off this incredible armada--until Buck Kendall stumbled upon THE ULTIMATE WEAPON.

Patrol Cruiser "IP-T 247" circling out toward Pluto on a leisurely inspection tour to visit the outpost miners there, was in no hurry at all as she loafed along. Her six-man crew was taking it very easy, and easy meant two-man watches, and low speed, to watch for the instrument panel and attend ship into the bargain.

She was about thirty million miles off Pluto, just beginning to get in touch with some of the larger mining stations out there, when Buck Kendall's turn at the controls came along. Buck Kendall was one of life's little jokes. When Nature made him, she was absentminded. Buck stood six feet two in his stocking feet, with his usual slight stoop in operation. When he forgot, and stood up straight, he loomed about two inches higher. He had the body and muscles of a dock navvy, which Nature started out to make. Then she forgot and added something of the same stuff she put in Sir Francis Drake. Maybe that made Old Nature nervous, and she started adding different things. At any rate, Kendall, as finally turned out, had a brain that put him in the first rank of scientists--when he felt like it--the general constitution of an ostrich and a flair for gambling.

The present position was due to such a gamble. An IP man, a friend of his, had made the mistake of betting him a thousand dollars he wouldn't get beyond a Captain's bars in the Patrol. Kendall had liked the idea anyway, and adding a bit of a bet to it made it irresistible. So, being a very particular kind of a fool, the glorious kind which old Nature turns out now and then, he left a five million dollar estate on Long Island, Terra, that same evening, and joined up in the Patrol. The Sir Francis Drake strain had immediately come forth--and Kendall was having the time of his life. In a six-man cruiser, his real work in the Interplanetary Patrol had started. He was still in it--but it was his command now, and a blue circle on his left sleeve gave his lieutenant's rank.

Buck Kendall had immediately proceeded to enlist in his command the IP man who had made the mistaken bet, and Rad Cole was on duty with him now. Cole was the technician of the T-247. His rank as Technical Engineer was practically equivalent to Kendall's circle-rank, which made the two more comfortable together.

Cole was listening carefully to the signals coming through from Pluto. "That," he decided, "sounds like Tad Nichols' fist. You can recognize that broken-down truck-horse trot of his on the key as far away as you can hear it."

"Is that what it is?" sighed Buck. "I thought it was static mashing him at first. What's he like?"

"Like all the other damn fools who come out two billion miles to scratch rock, as if there weren't enough already on the inner planets. He's got a rich platinum property. Sells ninety percent of his output to buy his power, and the other eleven percent for his clothes and food."

"He must be an efficient miner," suggested Kendall, "to maintain 101% production like that."

"No, but his bank account is. He's figured out that's the most economic level of production. If he produces less, he won't be able to pay for his heating power, and if he produces more, his operation power will burn up his bank account too fast."

"Hmmm--sensible way to figure. A man after my own heart. How does he plan to restock his bank account?"

"By mining on Mercury. He does it regularly--sort of a commuter. Out here his power bills eat it up. On Mercury he goes in for potassium, and sells the power he collects in cooling his dome, of course. He's a good miner, and the old fool can make money down there." Like any really skilled operator, Cole had been sending Morse messages while he talked. Now he sat quiet waiting for the reply, glancing at the chronometer.

"I take it he's not after money--just after fun," suggested Buck.

"Oh, no. He's after money," replied Cole gravely. "You ask him--he's going to make his eternal fortune yet by striking a real bed of jovium, and then he'll retire."
"Oh, one of that kind."

"They all are," Cole laughed. "Eternal hope, and the rest of it." He listened a moment and went on. "But old Nichols is a first-grade engineer. He wouldn't be able to remake that bankroll every time if he wasn't. You'll see his Dome out there on Pluto--it's always the best on the planet. Tip-top shape. And he's a bit of an experimenter too. Ah-he's with us."

Nichols' ragged signals were coming through--or pounding through. They were worse than usual, and at first Kendall and Cole couldn't make them out. Then finally they got them in bursts. The man was excited, and his bad key-work made it worse. "--Randing stopped. They got him I think. He said--th--ship as big--a--nport. Said it wa--eaded my--ay. Neutrons--on instruments--he's coming over the horizon--it's huge--war ship I think--register--instru--neutrons--." Abruptly the signals were blanked out completely.

Cole and Kendall sat frozen and stiff. Each looked at the other abruptly, then Kendall moved. From the receiver, he ripped out the recording coil, and instantly jammed it into the analyzer. He started it through once, then again, then again, at different tone settings, till he found a very shrill whine that seemed to clear up most of Nichols' bad key-work. "T-247--T-247--Emergency. Emergency. Randing reports the--over his horizon. Huge--ip--reign manufacture. Almost spherical. Randing's stopped. They got him I think. He said the ship was as big as a transport. Said it was headed my way. Neutrons--ont--gister--instruments. I think--is h--he's coming over the horizon. It's huge, and a war ship I think--register--instruments--neutrons."

Kendall's finger stabbed out at a button. Instantly the noise of the other men, wakened abruptly by the mild shocks, came from behind. Kendall swung to the controls, and Cole raced back to the engine room. The hundred-foot ship shot suddenly forward under the thrust of her tail ion-rockets. A blue-red cloud formed slowly behind her and expanded. Talbot appeared, and silently took her over from Kendall. "Stations, men," snapped Kendall. "Emergency call from a miner of Pluto reporting a large armed vessel which attacked them." Kendall swung back, and eased himself against the thrusting acceleration of the over-powered little ship, toward the engine room. Cole was bending over his apparatus, making careful check-ups, closing weapon-circuits. No window gave view of space here; on the left was the tiny tender's pocket, on the right, above and below the great water tanks that fed the ion-rockets, behind the rockets themselves. The tungsten metal walls were cold and gray under the ship lights; the hunched bulks of the apparatus crowded the tiny room. Gigantic racked accumulators huddled in the corners. Martin and Garnet swung into position in the fighting-tanks just ahead of the power rooms; Canning slid rapidly through the engine room, oozed through a tiny door, and took up his position in the stern-chamber, seated half-over the great ion-rocket sheath.

"Ready in positions, Captain Kendall," called the war-pilot as the little green lights appeared on his board. 

"Test discharges on maximum," ordered Kendall. He turned to Cole. "You start the automatic key?"

"Right, Captain."

"All shipshape?"

"Right as can be. Accumulators at thirty-seven per cent, thanks to the loaf out here. They ought to pick up our signal back on Jupiter, he's nearest now. The station on Europa will get it."

""Talbot--we are only to investigate if the ship is as reported. Have you seen any signs of her?"

"No sir, and the signals are blank."

"I'll work from here." Kendall took his position at the commanding control. Cole made way for him, and moved to the power board. One by one he tested the automatic doors, the pressure bulkheads. Kendall watched the instruments as one after another of the weapons were tested on momentary full discharge--titanic flames of five million volt protons. Then the ship thudded to the chatter of the Garnell rifles.

Tensely the men watched the planet ahead, white, yet barely visible in the weak sunlight so far out. It was swimming slowly nearer as the tiny ship gathered speed. Kendall cast a glance over his detector-instruments. The radio network was undisturbed, the magnetic and electric fields recognized only the slight disturbances occasioned by the planet itself. There was nothing, noth--

Five hundred miles away, a gigantic ship came into instantaneous being. Simultaneously, and instantaneously, the various detector systems howled their warnings. Kendall gasped as the thing appeared on his view screen, with the scale-lines below. The scale must be cock-eyed. They said the ship was fifteen hundred feet in diameter, and two thousand long!

"Retreat," ordered Kendall, "at maximum acceleration."

Talbot was already acting. The gyroscopes hummed in their castings, and the motors creaked. The T-247 spun on her axis, and abruptly the acceleration built up as the ion-rockets began to shudder. A faint smell of "heat" began to creep out of the converter. Immense "weight" built up, and pressed the men into their specially designed seats--
The gigantic ship across the way turned slowly, and seemed to stare at the T-247. Then it darted toward them at incredible speed till the poor little T-247 seemed to be standing still, as sailors say. The stranger was so gigantic now, the screens could not show all of him.

"God, Buck--he's going to take us!"

Simultaneously, the T-247 rolled, and from her broke every possible stream of destruction. The ion-rocket flames swirled abruptly toward her, the proton-guns whined their song of death in their housings, and the heavy pounding shudder of the Garnell guns racked the ship.

Strangely, Kendall suddenly noticed, there was a stillness in the ship. The guns and the rays were still going--but the little human sounds seemed abruptly gone.


"They're gone--" gasped Cole.

Kendall stood paralyzed for thirty seconds. Then suddenly he seemed to come to life. "Neutrons! Neutrons--and water tanks! Old Nichols was right--" He turned to his friend. "Cole--the tender--quick." He darted a glance at the screen. The giant ship still lay alongside. A wash of ions was curling around her, splitting, and passing on. The pinprick explosions of the Garnell shells dotted space around her--but never on her.

Cole was already racing for the tender lock. In an instant Kendall piled in after him. The tiny ship, scarcely ten feet long, was powered for flights of only two hours acceleration, and had oxygen for but twenty-four hours for six men, seventy-two hours for two men--maybe. The heavy door was slammed shut behind them, as Cole seated himself at the panel. He depressed a lever, and a sudden smooth push shot them away from the T-247.

"DON'T!" called Kendall sharply as Cole reached for the ion-rocket control. "Douse those lights!" The ship was dark in dark space. The lighted hull of the T-247 drifted away from the little tender--further and further till the giant ship on the far side became visible.

"Not a light--not a sign of fields in operation." Kendall said, unconsciously speaking softly. "This thing is so tiny, that it may escape their observation in the fields of the T-247 and Pluto down there. It's our only hope."

"What happened? How in the name of the planets did they kill those men without a sound, without a flash, and without even warning us, or injuring us?"

"Neutrons--don't you see?"

"Frankly, I don't. I'm no scientist--merely a technician. Neutrons aren't used in any process I've run across."

"Well, remember they're uncharged, tiny things. Small as protons, but without electric field. The result is they pass right through an ordinary atom without being stopped unless they make a direct hit. Tungsten, while it has a beautifully high melting point, is mostly open space, and a neutron just sails right through it, or any heavy atom. Light atoms stop neutrons better--there's less open space in 'em. Hydrogen is best. Well--a man is made up mostly of light elements, and a man stops those neutrons--it isn't surprising it killed those other fellows invisibly, and without a sound."

"You mean they bathed that ship in neutrons?"

"Shot it full of 'em. Just like our proton guns, only sending neutrons."

"Well, why weren't we killed too?"

"Water stops neutrons," I said. Figure it out."

"The rocket-water tanks--all around us! Great masses of water--" gasped Cole. "That saved us?"

"Right. I wonder if they've spotted us."

The stranger ship was moving slowly in relation to the T-247. Suddenly the motion changed, the stranger spun--and a giant lock appeared in her side, opened. The T-247 began to move, floated more and more rapidly straight for the lock. Her various weapons had stopped operating now, the hoppers of the Garnell guns exhausted, the charge of the accumulators aboard the ship down so low the proton guns had died out.

"Lord--they're taking the whole ship!"

"Say--Cole, is that any ship you ever heard of before? I don't think that's just a pirate!"

"Not a pirate--what then?"

"How'd he get inside our detector screens so fast? Watch--he'll either leave, or come after us--" The T-247 had settled inside the lock now, and the great metal door closed after it. The whole patrol ship had been swallowed by a giant. Kendall was sketching swiftly on a notebook, watching the vast ship closely, putting down a record of its lines, and formation. He glanced up at it, and then down for a few more lines, and up at it--

The stranger ship abruptly dwindled. It dwindled with incredible speed, rushing off along the line of sight at an impossible velocity, and abruptly clicking out of sight, like an image on a movie-film that has been cut, and repaired after the scene that showed the final disappearance.

"Cole--Cole--did you get that? Did you see--do you understand what happened?" Kendall was excitedly
shouting now.

"He missed us," Cole sighed. "It's a wonder--hanging out here in space, with the protector of the T-247's fields
gone."

"No, no, you asteroid--that's not it. He went off faster than light itself!"

"Eh--what? Faster than light? That can't be done--"

"He did it, I know he did. That's how he got inside our screens. He came inside faster than the warning message
could relay back the information. Didn't you see him accelerate to an impossible speed in an impossible time? Didn't
you see how he just vanished as he exceeded the speed of light, and stopped reflecting it? That ship was no ship of
this solar system!"

"Where did he come from then?"

"God only knows, but it's a long, long way off."

The IP-M-122 picked them up. The M-122 got out there two days later, in response to the calls the T-247 had
sent out. As soon as she got within ten million miles of the little tender, she began getting Cole's signals, and within
twelve hours had reached the tiny thing, located it, and picked it up.

Captain Jim Warren was in command, one of the old school commanders of the IP. He listened to Kendall's
report, listened to Cole's tale--and radioed back a report of his own. Space pirates in a large ship had attacked the T-
247, he said, and carried it away. He advised a close watch. On Pluto, his investigations disclosed nothing more than
the fact that three mines had been raided, all platinum supplies taken, and the records and machinery removed.

* * * * *

The M-122 was a fifty-man patrol cruiser, and Warren felt sure he could handle the menace alone, and hung
around for over two weeks looking for it. He saw nothing, and no further reports came of attack. Again and again,
Kendall tried to convince him this ship he was hunting was no mere space pirate, and again and again Warren
grunted, and went on his way. He would not send in any report Kendall made out, because to do so would add his
endorsement to that report. He would not take Kendall back, though that was well within his authority.

In fact, it was a full month before Kendall again set foot on any of the Minor Planets, and then it was Mars, the
base of the M-122. Kendall and Cole took passage immediately on an IP supply ship, and landed in New York six
days later. At once, Kendall headed for Commander McLaurin's office. Buck Kendall, lieutenant of the IP, found he
would have to make regular application to see McLaurin through a dozen intermediate officers.

By this time, Kendall was savagely determined to see McLaurin himself, and see him in the least possible time.
Cole, too, was beginning to believe in Kendall's assertion of the stranger ship's extra-systemic origin. As yet neither
could understand the strange actions of the machine, its attack on the Pluto mines, and the capture and theft of a
patrol ship.

"There is," said Kendall angrily, "just one way to see McLaurin and see him quick. And, by God, I'm going to.
Will you resign with me, Cole? I'll see him within a week then, I'll bet."

For a minute, Cole hesitated. Then he shook hands with his friends. "Today!" And that day it was. They
resigned, together. Immediately, Buck Kendall got the machinery in motion for an interview, working now from the
outside, pulling the strings with the weight of a hundred million dollar fortune. Even the IP officers had to pay a bit
of attention when Bernard Kendall, multi-millionaire began talking and demanding things. Within a week, Kendall
did see McLaurin.

At that time, McLaurin was fifty-three years old, his crisp hair still black as space, with scarcely a touch of the
gray that appears in his more recent photographs. He stood six feet tall, a broad-shouldered, powerful man, his face
grave with lines of intelligence and character. There was also a permanent narrowing of the eyes, from years under
the blazing sun of space. But most of all, while those years in space had narrowed and set his eyes, they had not
narrowed and set his mind. An infinitely finer character than old Jim Warren, his experience in space had taught him
always to expect the unexpected, to understand the incomprehensible as being part of the unknown and incalculable
properties of space and the worlds that swam in it. Besides the fine technical education he had started with, he had
acquired a liberal education in mankind. When Buck Kendall, straight and powerful, came into his office with Cole,
he recognized in him a character that would drive steadily and straight for its goal. Also, he recognized behind the
millionaire that had succeeded in pulling wires enough to see him, the scientist who had had more than one paper
published "in an amateur way."

"Dr. Bernard Kendall?" he asked, rising.

"Yes, sir. Late Buck Kendall, lieutenant of the IP. I quit and got Cole here to quit with me, so we could see
you."

"Unusual tactics. I've had several men join up to get an interview with me." McLaurin smiled.

"Yes, I can imagine that, but we had to see you in a hurry. A hidebound old rascallion by the name of Jim
Warren picked us up out by Pluto, floating around in a six-man tender. We made some reports to him, but he wouldn't believe, and he wouldn't send them through--so we had to send ourselves through. Sir, this system is about to be attacked by some extra-systemic race. The IP-T-247 was so attacked, her crew killed off, and the ship itself carried away.

"I got the report Captain Jim Warren sent through, stating it was a gang of space pirates. Now what makes you believe otherwise?"

"That ship that attacked us, attacked with a neutron gun, a gun that shot neutrons through the hull of our ship as easily as protons pass through open space. Those neutrons killed off four of the crew, and spared us only because we happened to be behind the water tanks. Masses of hydrogen will stop neutrons, so we lived, and escaped in the tender. The little tender, lightless, escaped their observation, and we were picked up. Now, when the 247 had been picked up, and locked into their ship, that ship started accelerating. It accelerated so fast along my line of sight that it just dwindled, and--vanished. It didn't vanish in distance, it vanished because it exceeded the speed of light."

"Isn't that impossible?"

"Not at all. It can be done--if you can find some way of escaping from this space to do it. Now if you could cut across through a higher dimension, your projection in this dimension might easily exceed the speed of light. For instance, if I could cut directly through the Earth, at a speed of one thousand miles an hour, my projection on the surface would go twelve thousand miles while I was going eight. Similar, if you could cut through the four dimensional space instead of following its surface, you'd attain a speed greater than light."

"Might it not still be a space pirate? That's a lot easier to believe, even allowing your statement that he exceeded the speed of light."

"If you invented a neutron gun which could kill through tungsten walls without injuring anything within, a system of accelerating a ship that didn't affect the inhabitants of that ship, and a means of exceeding the speed of light, all within a few months of each other, would you become a pirate? I wouldn't, and I don't think any one else would. A pirate is a man who seeks adventure and relief from work. Given a means of exceeding the speed of light, I'd get all the adventure I wanted investigating other planets. If I didn't have a cent before, I'd have relief from work by selling it for a few hundred millions--and I'd sell it mighty easily too, for an invention like that is worth an incalculable sum. Tie to that the value of compensated acceleration, and no man's going to turn pirate. He can make more millions selling his inventions than he can make thousands turning pirate with them. So who'd turn pirate?"

"Right." McLaurin nodded. "I see your point. Now before I'd accept your statements in re the 'speed of light' thing, I'd want opinions from some IP physicists."

"Then let's have a conference, because something's got to be done soon. I don't know why we haven't heard further from that fellow."

"Privately--we have," McLaurin said in a slightly worried tone. "He was detected by the instruments of every IP observatory I suspect. We got the reports but didn't know what to make of them. They indicated so many funny things, they were sent in as accidental misreadings of the instruments. But since all the observatories reported them, similar misreadings, at about the same times, that is with variations of only a few hours, we thought something must have been up. The only thing was the phenomena were reported progressively from Pluto to Neptune, clear across the solar system, in a definite progression, but at a velocity of crossing that didn't tie in with any conceivable force. They crossed faster than the velocity of light. That ship must have spent about half an hour off each planet before passing on to the next. And, accepting your faster-than-light explanation, we can understand it."

"Then I think you have proof."

"If we have, what would you do about it?"

"Get to work on those 'misreadings' of the instruments for one thing, and for a second, and more important, line every IP ship with paraffin blocks six inches thick."

"Paraffin--why?"

"The easiest form of hydrogen to get. You can't use solid hydrogen, because that melts too easily. Water can be turned into steam too easily, and requires more work. Paraffin is a solid that's largely hydrogen. That's what they've always used on neutrons since they discovered them. Confine your paraffin between tungsten walls, and you'll stop the secondary protons as well as the neutrons."

"Hmmm--I suppose so. How about seeing those physicists?"

"I'd like to see them today, sir. The sooner you get started on this work, the better it will be for the IP."

"Having seen me, will you join up in the IP again?" asked McLaurin.

"No, sir, I don't think I will. I have another field you know, in which I may be more useful. Cole here's a better technician than fighter--and a damned good fighter, too--and I think that an inexperienced space-captain is a lot less useful than a second-rate physicist at work in a laboratory. If we hope to get anywhere, or for that matter, I suspect, stay anywhere, we'll have to do a lot of research pretty promptly."
"What's your explanation of that ship?"

"One of two things: an inventor of some other system trying out his latest toy, or an expedition sent out by a planetary government for exploration. I favor the latter for two reasons: that ship was big. No inventor would build a thing that size, requiring a crew of several hundred men to try out his invention. A government would build just about that if they wanted to send out an expedition. If it were an inventor, he'd be interested in meeting other people, to see what they had in the way of science, and probably he'd want to do it in a peaceable way. That fellow wasn't interested in peace, by any means. So I think it's a government ship, and an unfriendly government. They sent that ship out either for scientific research, for trade research and exploration, or for acquisitive exploration. If they were out for scientific research, they'd proceed as would the inventor, to establish friendly communication. If they were out for trade, the same would apply. If they were out for acquisitive exploration, they'd investigate the planets, the sun, the people, only to the extent of learning how best to overcome them. They'd want to get a sample of our people, and a sample of our weapons. They'd want samples of our machinery, our literature and our technology. That's exactly what that ship got.

"Somebody, somewhere out there in space, either doesn't like their home, or wants more home. They've been out looking for one. I'll bet they sent out hundreds of expeditions to thousands of nearby stars, gradually going further and further, seeking a planetary system. This is probably the one and only one they found. It's a good one too. It has planets at all temperatures, of all sizes. It is a fairly compact one, it has a stable sun that will last far longer than any race can hope to."

"Hmm--how can there be good and bad planetary systems?" asked McLaurin. "I'd never thought of that."

Kendall laughed. "Mighty easy. How'd you like to live on a planet of a Cepheid Variable? Pleasant situation, with the radiation flaring up and down. How'd you like to live on a planet of Antares? That blasted sun is so big, to have a comfortable planet you'd have to be at least ten billion miles out. Then if you had an interplanetary commerce, you'd have to struggle with orbits tens of billions of miles across instead of mere millions. Further, you'd have a sun so blasted big, it would take an impossible amount of energy to lift the ship up from one planet to another. If your trip was, say, twenty billions of miles to the next planet, you'd be fighting a gravity as bad as the solar gravity at Earth here all the way--no decline with a little distance like that."

"H-m-m-m--quite true. Then I should say that Mira would take the prize. It's a red giant, and it's an irregular variable. The sunlight there would be as unstable as the weather in New England. It's almost as big as Antares, and it won't hold still. Now that would make a bad planetary system."

"It would!" Kendall laughed. But as we know--he laughed too soon, and he shouldn't have used the conditional. He should have said, "It does!"

III

Gresth Gkae, Commander of Expeditionary Force 93, of the Planet Sthor, was returning homeward with joyful mind. In the lock of his great ship, lay the T-247. In her cargo holds lay various items of machinery, mining supplies, foods, and records. And in her log books lay the records of many readings on the nine larger planets of a highly satisfactory planetary system.

Gresth Gkae had spent no less than three ultra-wearing years going from one sun to another in a definitely mapped out section of space. He had investigated only eleven stars in that time, eleven stars, progressively further from the titanic red-flaming sun he knew as "the" sun. He knew it as "the" sun, and had several other appellations for it. Mira was so-named by Earthmen because it was indeed a "wonder" star, in Latin, mirare means "to wonder." Irregularly, and for no apparent reason it would change its rate of radiation. So far as those inhabitants of Sthor and her sister world Asthor knew, there was no reason. It just did it. Perhaps with malicious intent to be annoying. If so, it was exceptionally successful. Sthor and Asthor experienced, periodically, a young ice age. When Mira decided to take a rest, Sthor and Asthor froze up, from the poles most of the way to the equators. Then Mira would stretch herself a little, move about restlessly and Sthor and Asthor would become uninhabitably hot, anywhere within twenty degrees of the equator.

Those Sthorian people had evolved in a way that made the conditions endurable for savage or uncivilized people, but when a scientific civilization with a well-ordered mode of existence tried to establish itself, Mira was all sorts of a nuisance.

Gresth Gkae was a peculiar individual to human ways of thinking. He stood some seven feet tall, on his strange, double-kneed legs and his four toed feet. His body was covered with little, short feather-like things that moved now with a volition of their own. They were moving very slowly and regularly. The space-ship was heated to a comfortable temperature, and the little fans were helping to cool Gresth Gkae. Had it been cold, every little feather would have lain down close against its neighbors, forming an admirable, wind-proof and cold-proof blanket.

Nature, on Sthor, had original ideas of arrangement too. Sthorians possessed two eyes--one directly above the other, in the center of their faces. The face was so long, and narrow, it resembled a blunt hatchet, with the two eyes
on the edge. To counter-balance this vertical arrangement of the eyes, the nostrils had been separated some four inches, with one on each of the sloping cheeks. His ears were little pink-flesh cups on short, muscular stems. His mouth was narrow, and small, but armed with quite solid teeth adapted to his diet, a diet consisting of almost anything any creature had ever considered edible. Like most successful forms of intelligent life, Gresth Gkae was omnivorous. An intelligent form of life is necessarily adaptable, and adaptation meant being able to eat what was at hand.

One of his eyes, the upper one, was fully twice the size of the lower one. This was his telescopic eye. The lower, or microscopic eye was adapted to work for which a human being would have required a low power microscope, the upper eye possessed a more normal power of vision, plus considerable telescopic powers.

Gresth Gkae was using it now to look ahead in the blank of space to where gigantic Mira appeared. On his screens now, Mira appeared deep violet, for he was approaching at a speed greater than that of light, and even this projected light of Mira was badly distorted.

"The distance is half a light-year now, sir," reported the navigation officer.

"Reduce the speed, then, to normal velocity for these ranges. What reserve of fuel have we?"

"Less than one thousand pounds. We will barely be able to stop. We were too free in the use of our weapons, I fear," replied the Chief Technician.

"Well, what would you? We needed those things in our reports. Besides, we could extract fuel from that ore we took on at Planet Nine of Phahlo. It is merely that I wish speed in the return."

"As we all do. How soon do you believe the Council will proceed against the new system?"

"It will be fully a year, I fear. They must gather the expeditions together, and re-equip the ships. It will be a long time before all will have come in."

"Could they not send fast ships after them to recall them?"

"Could they have traced us as we wove our way from Thart to Karst to Raloork to Phahlo? It would be impossible."

* * * * *

Steadily the great ship had been boring on her way. Mira had been a disc for nearly two days, gigantic, two-hundred-and-fifty-million-mile Mira took a great deal of dwarfing by distance to lose her disc. Even at the Twin Planets, eight thousand two hundred and fifty millions of miles out, Mira covered half the sky, it seemed, red and angry. Sometimes, though, to the disgust of the Sthorians it was just red-faced and lazy. Then Sthor froze.

"Grih is in a descendant stage," said the navigation officer presently. "Sthor will be cold when we arrive."

"It will warm quickly enough with our news!" Gresth laughed. "A system--a delightful system--discovered. A system of many close-grouped planets. Why think--from one side of that system to the other is less of a distance than from Ansthat, our first planet's orbit, to Insthor's orbit! That sun, as we know, is steady and warm. All will be well, when we have eliminated that rather peculiar race. Odd, that they should, in some ways, be so nearly like us! Nearly Sthorian in build. I would not have expected it. Though they did have some amazing peculiarities! Imagine--two eyes just alike, and in a horizontal row. And that flat face. They looked as though they had suffered some accident that smashed the front of the face in. And also the peculiar beak-like projection. Why should a race ever develop so amazing a projection in so peculiar and exposed a position? It sticks out inviting attack and injury. Right in the middle of the face. And to make it worse, there is the air-channel, and the only air channel. Why, one minor injury to the throat would be certain to damage that passage beyond repair, and bring death. Yet such relatively unimportant things as ears, and eyes are doubled. Surely you would expect that so important a member as the air-passage would be doubled for safety.

"Those strange, awkward arms and legs were what puzzled me. I have been attempting to manipulate myself as they must be forced to, and I cannot see how delicate or accurate manual manipulation would be possible with those rigid, inflexible arms. In some ways I feel they must have had clever minds to overcome so great a handicap to constructive work. But I suppose single joints in the arms become as natural to them as our own more mobile two.

"I wonder if life in any intelligent form wouldn't develop somewhat similar formations, though. Think, in all parts of Sthor, before men became civilized and developed communication, even so much as twenty thousand years ago, our records show that seats and chairs were much as they are today, and much as they are, in all places among all groups. Then too, the eye has developed in many different species, and always reached much the same structure. When a thing is intended and developed to serve as is purpose, no matter who develops it, or where or how, is it not apt to have similar shapes and parts? A chair must have legs, and a seat and arm-rests and a back. You may vary their nature and their shape, but not widely, and they must be there. An eye must, anywhere, have a sensitive retina, an adjustable lens, and an adjustable device for controlling the entrance of light. Similarly there are certain functions that the body of an intelligent creature must serve which naturally tend to make intelligent creatures similar. He must have a tool--the hand--"
"Yes, yes--I see your point. It must be so, for surely these creatures out there are strange enough in other ways."
"But tell me, have you calculated when we shall land?"

"In twelve hours, thirty-three minutes, sir."

Eleven hours later, the expedition ship had slowed to a normal space-speed. On her left hung the giant globe of Asthor, rotating slowly, moving slowly in her orbit. Directly ahead, Sthor loomed even greater. Tiny Teelan, the thousand-mile diameter moon of the Insthor system shone dull red in the reflected light of gigantic Mira. Mira herself was gigantic, red and menacing across eight and a quarter billions of miles of space.

One hundred thousand miles apart, the twin worlds Sthor and Asthor rotated about their common center of gravity, eternally facing each other. Ten million miles from their common center of gravity, Teelan rotated in a vast orbit.

Sthor and Asthor were capped at each pole now by gigantic white icecaps. Mira was sulking, and as a consequence the planets were freezing.

The expedition ship sank slowly toward Sthor. A swarm of smaller craft had flown up at its approach to meet it. A gaily-colored small ship marked the official greeting-ship. Gresth had withheld his news purposely. Now suddenly he began broadcasting it from the powerful transmitter on his ship. As the words came through on a thousand sets, all the little ships began to whirl, dance and break out into glowing, sparkling lights. On Sthor and Asthor even commotions began to be visible. A new planetary system had been found--They could move! Their overflowing populations could be spread out!

The whole Insthor system went mad with delight as the great Expeditionary Ship settled downward.

IV

There was a glint of humor in Buck Kendall’s eyes as he passed the sheet over to McLaurin. Commander McLaurin looked down the columns with twinkling eyes.

"Petition to establish the Lunar Mining Bank," he read. "What a bank! Officers: President, General James Logan, late of the IP; Vice-president, Colonel Warren Gerardhi, also late of the IP; Staff, consists of 90% ex-IP men, and a few scattered accountants. Designed by the well-known designer of IP stations, Colonel Richard Murray." Commander McLaurin looked up at Kendall with a broad grin. "And you actually got Interplanetary Life to give you a mortgage on the structure?"

"Why not? It’ll cut cost fifty-eight millions, with its twelve-foot tungsten-beryllium walls and the heavy defense weapons against those terrible pirates. You know we must defend our property."

"With the thing you’re setting up out there on Luna, you could more readily wipe out the IP than anything else I know of. Any new defense ideas?"

"Plenty. Did you get any further appropriations from the IP Appropriations Board?"

McLaurin looked sour. "No. The dear taxpayers might object, and those thickheaded, clogged rockets on the Board can't see your data on the Stranger. They gave me just ten millions, and that only because you demonstrated you could shoot every living thing out of the latest IP cruiser with that neutron gun of yours. By the way, they may kick when I don't install more than a few of those."

"Let 'em. You can stall for a few months. You'll need that money more for other purposes. You've installed that paraffin lining?"

"Yes--I got a report on that of 'finished' last week. How have you made out?"

Buck Kendall’s face fell. "Not so hot. Devin's been the biggest help--he did most of the work on that neutron gun really--"

"After," McLaurin interrupted, "you told him how."

"--but we're pretty well stuck now, it seems. You'll be off duty tomorrow evening, can't you drop around to the lab? We're going to try out a new system for releasing atomic energy."

"Isn't that a pretty faint hope? We've been trying to get it for three centuries now, and haven't yet. What chance at it within a year or so?--which is the time you allow yourself before the Stranger returns."

"It is, I'll admit that. But there's another factor, not to be forgotten. The data we got from correlating those 'misreadings' from the various IP posts mean a lot. We are working on an entirely different trail now. You come on out, and you can see our new apparatus. They are working on tremendous voltages, and hoping to smash the thing by a brutal bombardment of terrific voltage. We're trying, thanks to the results of those instruments, to get results with small, terrifically intense fields."

"How do you know that's their general system?"

"They left traces on the records of the post instruments. These records show such intensities as we never got. They have atomic energy, necessarily, and they might have had material energy, actual destruction of matter, but apparently, from the field readings it's the former. To be able to make those tremendous hops, light-years in length, they needed a real store of energy. They have accumulators, of course, but I don't think they could store enough
power by the system they use to do it."

"Well, how's your trick 'bank' out on Luna, despite its twelve-foot walls, going to stand an atomic explosion?"

"More protective devices to come is our only hope. I'm working on three trails: atomic energy, some type of magnetic shield that will stop any moving material particle, and their faster-than-light thing. Also, that fortress--I mean, of course, bank--is going to have a lot of lead-lined rooms."

"I wish I could use the remaining money the Board gave me to lead-line a lot of those IP ships," said McLaurin wistfully. "Can't you make a gamma-ray bomb of some sort?"

"Not without their atomic energy release. With it, of course, it's easy to flood a region with rays. It'll be a million times worse than radium 'C,' which is bad enough."

"Well, I'll send through this petition for armaments. They'll pass it all right, I think. They may get some kicks from old Jacob Ezra Stubbs. Jacob Ezra doesn't believe in anything war-like. I wish they'd find some way to keep him off of the Arms Petition Board. He might just as well stay home and let 'em vote his ticket uniformly 'nay.'"

Buck Kendall left with a laugh.

* * * * *

Buck Kendall had his troubles though. When he had reached Earth again, he found that his properties totaled one hundred and three million dollars, roughly. One doesn't sell properties of that magnitude, one borrows against them. But to all intents and purposes, Buck Kendall owned two half-completed ship's hulls in the Baldwin Spaceship Yards, a great deal of massive metal work on its way to Luna, and contracts for some very extensive work on a "bank." Beyond that, about eleven million was left.

A large portion of the money had been invested in a laboratory, the like of which the world had never seen. It was devoted exclusively to physics, and principally the physics of destruction. Dr. Paul Devin was the Director, Cole was in charge of the technical work, and Buck Kendall was free to do all the work he thought needed doing.

Returned to his laboratory, he looked sourly at the bench on which seven mechanicians were working. The ninth successive experiment on the release of atomic energy had failed. The tenth was in process of construction. A heavy pure tungsten dome, three feet in diameter, three inches thick, was being lowered over a clear insulum dome, a foot smaller. Inside, the real apparatus was arranged around the little pool of mercury. From it, two massive tungsten-copper alloy conductors led through the insulum housing, and outside. These, so Kendall had hoped, would surge with the power of broken atoms, but he was beginning to believe rather bitterly, they would never do so.

Buck went on to his offices, and the main calculator room. There were ten calculator tables here, two of them in operation now.

"Hello, Devin. Getting on?"

"No," said Devin bitterly, "I'm getting off. Look at these results." He brought over a sheaf of graphs, with explanatory tables attached. Rapidly Buck ran through them with him. Most of them were graphs of functions of light, considered as a wave in these experiments.

"H-m-m-m--not very encouraging. Looks like you've got the field--but it just snaps shut on itself and won't work. The lack of volume makes it break down, if you establish it, and makes it impossible to establish in the first place without the energy of matter. Not so hot. That's certainly cock-eyed somewhere."

"I'm not. The math may be."

"Well"--Kendall grinned--"it amounts to the same thing. The point is, light doesn't. Let's run over that theory again. Light is not only magnetic; but electric. Somehow it transforms electric fields cyclically into magnetic fields and back again. Now what we want to do is to transform an electric into a magnetic field and have it stay there. That's the first step. The second thing, is to have the lines of magnetic force you develop, lie down like a sheath around the ship, instead of standing out like the hairs on an angry cat, the way they want to. That means turning them ninety degrees, and turning an electric into a magnetic field means turning the space-strain ninety degrees. Light evidently forms a magnetic field whose lines of force reach along its direction of motion, so that's your starting point."

"Yes, and that," growled Devin, "seems to be the finishing point. Quite definitely and clearly, the graph looped down to zero. In other words, the field closed in on itself, and destroyed itself."

"Light doesn't vanish."

"I'll make you all the lights you want,"

"I simply mean there must be something that will stop it."

"Certainly. Transform it back to electric field before it gets a chance to close in, then repeat the process--the way light does."

"That wouldn't make such a good magnetic shield. Every time that field started pulsing out through the walls of the ship it would generate heat. We want a permanent field that will stay on the job out there. I wonder if you couldn't make a conductor device that would open that field out--some special type of oscillating field that would
keep it open."

"H-m-m-m--that's an angle I might try. Any suggestions?"

Kendall had suggestions, and rapidly he outlined a development that appeared from some of the earlier
dedications on light, and might be what they wanted.

* * * * *

Kendall, however, had problems of his own to work on. The question of atomic energy he was leaving alone,
till the present experiment either succeeded, or, as he rather suspected, failed as had its predecessors. His present
problem was to develop more fully some interesting lines of research he had run across in investigating
mathematically the trick of turning electric to magnetic fields and then turning them back again. It might be that
along this line he would find the answer to the speed greater than that of light. At any rate, he was interested.

He worked the rest of that day, and most of the next on that line--till he ran it into the ground with a pair of
equations that ended with the expression: \( dx.dv=h/(4\pi m) \). Then Kendall looked at them for a long moment, then
he sighed gently and threw them into a file cabinet. Heisenberg's Uncertainty. He'd reduced the thing to a form that
simply told him it was beyond the limits of certainty and he ran it into the normal, natural uncertainty inevitable in
Nature.

Anyway he had real work to do now. The machine was about ready for his attention. The machinists had
finished putting it in shape for demonstration and trial. He himself would have to test it over the rest of the afternoon
and arrange for power and so forth.

By evening, when Commander McLaurin called around with some of the other investors in Kendall's "bank" on
Luna, the thing was already started, warming up. The fields were being fed and the various scientists of the group
were watching with interest. Power was flowing in already at a rate of nearly one hundred thousand horsepower per
minute, thanks to a special line given them by New York Power (a Kendall property). At ten o'clock they were
beginning to expect the reaction to start. By this time the fields weren't gaining in intensity very rapidly, a maximum
intensity had been reached that should, they felt, break the atoms soon.

At eleven-thirty, through the little view window, Buck Kendall saw something that made him cry out in
amazement. The mercury metal in the receiver, behind its layers of screening was beginning to glow, with a dull
reddish light, and little solidifications were appearing in it! Eagerly the men looked, as the solidifications spread
slowly, like crystals growing in an evaporating solution.

Twelve o'clock came and went, and one o'clock and two o'clock. Still the slow crystallization went on. Buck
Kendall was casting furtive glances at the kilowatt-hour meter. It stood at a figure that represented twenty-seven
thousand dollars' worth of power. Long since the power rate had been increased to the maximum available, as the
power plant's normal load reduced as the morning hours came. Surely, this time something would start, but Buck
had two worries. If all the enormous amount of energy they had poured in there decided to release itself at once--
And at any rate, Buck saw they'd never dare to let a generator stop, once it was started!

The men were a tense group around the machine at three-fifteen A.M. There remained only a tiny, dancing
globule of silvery mercury skittering around on the sharp, needle-like crystals of the dull red metal that had resulted.
Slowly that skittering drop was shrinking--

Three twenty-two and a half A.M. saw the last fraction of it vanish. Tensely the men stared into the machine--
backing off slowly--watching the meters on the board. At nearly eighty thousand volts the power had been fed into
it.

The power continued to flow, and a growing halo of intense violet light appeared suddenly on those red,
needle-like crystals, a swiftly expanding halo--

Without a sound, without the slightest disturbance, the halo vanished, and softly, gently, the needle-like crystals
relapsed, melted away, and a dull pool of metallic mercury rested in the receiver.

At eighty thousand volts, power was flowing in--
And it didn't even sparkle.

V

The apparatus of the magnetic shield had been completed two days later, and set up in Buck's own laboratory.
On the bench was the powerful, but small, little projector of the straight magnetic field, simply a specially designed
accumulator, a super-condenser, and the peculiar apparatus Devin had designed to distort the electric field through
ninety degrees to a magnetic field. Behind this was a curious, paraboloid projector made up of hundreds of tiny,
carefully orientated coils. This was Buck's own contribution. They were ready for the tests.

"I would invite McLaurin in to see this," said Kendall looking at them, and then across the room bitterly toward
the alleged atomic power apparatus on the opposite bench. "I think it will work. But after that--" He stared, glaring,
at the heavy tungsten dome with its heavy tungsten contacts, across which the flame of released atomic energy was
supposed to have leapt. "That was probably the flattest flop any experiment ever flopped."
"Well--it didn't blow up. That's one comfort," suggested Devin.

"I wish it had. Then at least it would have shown some response. The only response shown, actually, was
down on the power meter. It damn near wore out the bearings turning so fast."

"Personally, I prefer the lack of action." Devin laughed. "Have you got that circuit hooked up?"

"Right," sighed Kendall, turning back to the work in hand. "Is Douglass in on this?"

"Yes--in the next room. He'll let us know when he's ready. He's setting up those instruments."

Douglass, a young junior physicist, late of the IP Physics Department, stuck his head in the door and announced
his instruments were all set up.

"Keep an eye on them. They'll move somehow, at any rate. This thing couldn't go as flat as that atom-buster of
mine."

Carefully Kendall made a few last-minute adjustments on the limiting relays, and took up his position at the
power board. Devin took his place near the apparatus, with another series of instruments, similar to those Douglass
was now watching in the next room, some thirty feet away, through the two-inch metal wall. "Ready," called
Kendall.

The switch shot home. Instantly Kendall, Devin, and all the men in the building jumped some six feet from
their former positions. A monstrous roar of sound crashed out in that laboratory that thundered from one wall to the
other, and bellowed in a Titan's fury. It thundered and growled, it bellowed and howled, the walls shook with the
march and counter-march of crashing waves of sound.

And a ten-foot wavering flame of blue-white, bellying electric fire shuddered up to the ceiling from the contact
points of the alleged atomic generator. The heat, pouring out from the flashing, roaring arc sent prickles of aching
burns over Kendall's skin. For ten seconds he stood in utter, paralyzed surprise as his flop of flops bellowed its anger
at his disdain. Then he leapt to the power board and shut off the roaring thing, by cutting the switch that had started
it.

"Spirits of Space! Did that come to life!"

"Atomic Energy!" Devin cried.

"Atomic energy, hell. That's my thirty thousand dollars' worth of power breaking loose again," chortled
Kendall. "We missed the atomic energy, but, sweet boy, what an accumulator we stubbed our toes on! I wondered
where in blazes all that power went to. That's the answer. I'll bet I can tell you right now what happened. We built
that mercury up to a new level, and that transitional stage was the red, crystalline metal. When it reached the higher
stage, it was temporarily stable--but that projector over there that we designed for the purpose of holding open
electric and magnetic fields just opened the door and let all that power right out again."

"But why isn't it atomic energy? How do you know that no more than your power that you put in is coming
out?" demanded Devin.

"The arc, man, the arc. That was a high-current, and low-voltage arc. Couldn't you tell by the sound that no
great voltage--as atomic voltages go--was smashing across there? If we were getting atomic voltage--and power--
there'd have been a different tone to it, high and shriller.

"Now, did you take any readings?"

"What do you think, man? I'm human. Do you think I got any readings with that thing bellowing and shrieking
in my ears, and burning my skin with ultra-violet? It itches now."

Kendall laughed. "You know what to do for an itch. Now, I'm going to make a bet. We had those points
separated for a half-million volts discharge, but there was a dust-cover thrown over them just now. That, you notice,
is missing. I'll bet that served as a starter lead for the main arc. Now I'm going to start that projector thing again, and
move the points there through about six inches, and that thing probably won't start itself."

** * * * *

Most of the laboratory staff had collected at the doorway, looking in at the white-hot tungsten discharge points,
and the now silent "atomic engine." Kendall turned to them and said: "The flop picked itself up. You go on back, we
seem to be in one piece yet. Douglass, you didn't get any readings, did you?"

Sheepishly, Douglass grinned at him. "Eh--er--no--but I tore my pants. The magnetic field grabbed me and I
jumped. They had some steel buttons, and a lot of steel keys--they're kinda' hard to keep on now."

The laboratory staff broke into a roar of laughter, as Douglass, holding up his trousers with both hands was
beheld.

"I guess the field worked," he said.

"I guess maybe it did," adjudged Kendall solemnly. "We have some rope here if you need it--"

Douglass returned to his post.

Swiftly, Kendall altered the atomic distortion storage apparatus, and returned to the power-board. "Ready?"

"Check."
Kendall shoved home the switch. The storage device was silent. Only a slight feeling of strain made itself felt, and the sudden noisy hum of a small transformer nearby. "She works, Buck!" Devin called. "The readings check almost exactly."

"All good then. Now I want to get to that atomic thing. We can let that slide for a little bit--I'll answer it."

The telephone had rung noisily. "Kendall Labs--Kendall speaking."

"This is Superintendent Foster, of the New York Power, Mr. Kendall. We have some trouble just now that we think your operations may be responsible for. The sub-station at North Beaumont blew all the fuses, and threw the breakers at the main station. The men out there said the transformers began howling--"

"Right you are--I'm afraid I did do that. I had no idea that it would reach so far. How far is that from my place here?"

"It's about a thousand yards, according to the survey maps."

"Thanks--and I'll be careful about it. Any damage, I am responsible for? All okay?"

"Yes, sir, Mr. Kendall."

Kendall hung up. "We stirred up a lot more dust than we expected, Devin. Now let's start seeing if we can keep track of it. Douglass, how did your readings show?"

"I took them at the ten stations, and here they are. The stations are two feet apart."

"H-m-m-..5--55--6--7--20--198--5950--6010--5920. Very, very nice--only the damned thing's got an arm as long as the law. Your readings were about .2, Devin?"

"That's right."

"Then these little readings are just leakage. What's our normal intensity here?"

"About .19. Just a very small fraction less than the readings."

"Perfect--we have what amounts to a hollow shell of magnetic force--we can move inside, and you can move outside--far enough. But you can't get a conductor or a magnetic field through it." He put the readings on the bench, and looked at the apparatus across the room. "Now I want to start right on that other. Douglass, you move that magnetostat apparatus out of the way, and leave just the 'can-opener' of ours--the projector. I'm pretty sure that's what does the deed. Devin, see if you can hunt up some electrostatic voltmeters with a range in the neighborhood of--I think it'll be about eighty thousand."

* * * * *

Rapidly, Douglass was dismounting the apparatus, as Devin started for the stock room. Kendall started making some new connections, reconnecting the apparatus they had intended using on the "atomic engine," largely high-capacity resistances. He seemed to perform this work mechanically, his mind definitely on something else. Suddenly he stopped, and looked carefully into the receiver of the machine. The metal in it was silvery, liquid, and here and there a floating crystal of the dull red metal. Slowly a smile spread across his face. He turned to Douglass.

"Douglass--ah, you're through. Get on the trail of MacBride, and get him and his crew to work making half a dozen smaller things like this. Tell 'em they can leave off the tungsten shield. I want different metals in the receiver of each. Use--hmmm--sodium--copper--magnesium--aluminium, iron and chromium. Got it?"

"Yes, sir." He left, just as Devin returned with a large electrostatic voltmeter.

"I'd like," said he, "to know how you know the voltage will range around eighty thousand."

"K-ring excitation potential for mercury. I'm willing to bet that thing simply shoved the whole electron system of the mercury out a notch--that it simply hasn't any K-ring of electrons now. I'm trying some other metals. Douglass is going to have MacBride make up half a dozen more machines. Machines--they need a name. This--ah--this is an 'atostor.' MacBride's going to make up half a dozen of 'em, and try half a dozen metals. I'm almost certain that's not mercury in there now, at all. It's probably element 99 or something like it."

"It looks like mercury--"

"Certainly. So would 99. Following the periodic table, 99 would probably have an even lower melting point than mercury, be silvery, dense and heavy--and perhaps slightly radioactive. The series under the B family of Group II is Magnesium, Zinc, Cadmium, Mercury--and 99. The melting point is going down all the way, and they're all silvery metals. I'm going to try copper, and I fully expect it to turn silvery--in fact, to become silver."

"Then let's see." Swiftly they hooked up the apparatus, realigned the projector, and again Kendall took his place at the power-board. As he closed the switch, on no-load, the electrostatic voltmeter flopped over instantly, and steadied at just over 80,000 volts.

"I hate to say 'I told you so,'" said Kendall. "But let's hook in a load. Try it on about 100 amps first."

Devin began cutting in load. The resistors began heating up swiftly as more and more current flowed through them. By not so much as by a vibration of the voltmeter needle, did the apparatus betray any strain as the load mounted swiftly. 100--200--500--1000 amperes. Still, that needle held steady. Finally, with a drain of ten thousand amperes, all the equipment available could handle, the needle was steady as a rock, though the tremendous load of
800,000,000 watts was cut in and out. That, to atoms, atoms by the nonillions, was no appreciable load at all. There was no internal resistance whatever. The perfect accumulator had certainly been discovered.

"I'll have to call McLaurin--" Kendall hurried away with a broad, broad smile.

VI

"Hello, Tom?"

The telephone rattled in a peevied sort of way. "Yes, it is. What now? And when am I going to see you in a social sort of way again?"

"Not for a long, long time; I'm busy. I'm busy right now as a matter of fact. I'm calling up the vice-president of Faragaut Interplanetary Lines, and I want to place an order."

"Why bother me? We have clerks, you know, for that sort of thing," suggested Faragaut in a pained voice.

"Tom, do you know how much I'm worth now?"

"Not much," replied Faragaut promptly. "What of it? I hear, as a matter of fact that you're worth even less in a business way. They're talking quite a lot down this way about an alleged bank you're setting up on Luna. I hear it's got more protective devices, and armor than any IP station in the System, that you even had it designed by an IP designer, and have a gang of Colonels and Generals in charge. I also hear that you've succeeded in getting rid of money at about one million dollars a day--just slightly shy of that."

"You overestimate me, my friend. Much of that is merely contracted for. Actually it'll take me nearly nine months to get rid of it. And by that time I'll have more. Anyway, I think I have something like ten million left. And remember that way back in the twentieth century some old fellow beat my record. Armour, I think it was, lost a million dollars a day for a couple of months running."

"Anyway, what I called you up for was to say I'd like to order five hundred thousand tons of mercury, for delivery as soon as possible."

"What! Oh, say, I thought you were going in for business." Faragaut gave a slight laugh of relief.

"Tom, I am. I mean exactly what I say. I want five--hundred--thousand--tons of metallic mercury, and just as soon as you can get it."

"Man, there isn't that much in the system." Buck laughed. "We aren't even starting to mine much of it yet. It's all there is on the market for me, and contract to take all the 'Jupiter Heavy-Metals' can turn out. You send those orders through, and clean out the market completely. Somebody's about to pay for the work I've been doing, and boy, they're going to pay through the nose. After you've got that order launched, and don't make a christening party of the launching either, why just drop out here, and I'll show you why the value of mercury is going so high you won't be able to follow it in a space ship."

"The cost of that," said Faragaut, seriously now, "will be about--fifty-three million at the market price. You'd have to put up twenty-six cash, and I don't believe you've got it."

Buck laughed. "Tom, loan me a dozen million, will you? You send that order through, and then come see what I've got. I've got a break, too! Mercury's the best metal for this use--and it'll stop gamma rays too!"

"So it will--but for the love of the system, what of it?"

"Come and see--tonight. Will you send that order through?"

"I will, Buck. I hope you're right. Cash is tight now, and I'll probably have to put up nearer twenty million, when all that buying goes through. How long will it be tied up in that deal, do you think?"

"Not over three weeks. And I'll guarantee you three hundred percent--if you'll stay in with me after you start. Otherwise--I don't think making this money would be fair just now."

"I'll be out to see you in about two hours, Buck. Where are you? At the estate?" asked Faragaut seriously.

"In my lab out there. Thanks, Tom."

McLaurin was there when Tom Faragaut arrived. And General Logan, and Colonel Gerardhi. There was a restrained air of gratefulness about all of them that Tom Faragaut couldn't quite understand. He had been looking up Buck Kendall's famous bank, and more and more he had begun to wonder just what was up. The list of stockholders had read like a list of IP heroes and executives. The staff had been a list of IP men with a slender sprinkling of accountants. And the sixty-million dollar structure was to be a bank without advertising of any sort! Usually such a venture is planned and published months in advance. This had sprung up suddenly, with a strange quietness.

Almost silently, Buck Kendall led the way to the laboratory. A small metal tank was supported in a peculiar piece of apparatus, and from it led a small platinum pipe to a domed apparatus made largely of insulum. A little pool of mercury, with small red crystals floating in it rested in a shallow hollow surrounded by heavy conductors.

"That's it, Tom. I wanted to show you first what we have, and why I wanted all that mercury. Within three weeks, every man, woman and child in the system will be clamoring for mercury metal. That's the perfect accumulator." Quickly he demonstrated the machine, charging it, and then discharging it. It was better than 99.95% efficient on the charge, and was 100% efficient on the discharge.
"Physically, any metal will do. Technically, mercury is best for a number of reasons. It's a liquid. I can, and do
it in this, charge a certain quantity, and then move it up to the storage tank. Charge another pool, and move it up. In
discharge, I can let a stream flow in continuously if I required a steady, terrific drain of power without interruption.
If I wanted it for more normal service, I'd discharge a pool, drain it, refill the receiver, and discharge a second pool.
Thus, mercury is the metal to use.

"Do you see why I wanted all that metal?"
"I do, Buck--Lord, I do," gasped Faragaut. "That is the perfect power supply."
"No, confound it, it isn't. It's a secondary source. It isn't primary. We're just as limited in the supply of power as
ever--only we have increased our distribution of power. Lord knows, we're going to need a power supply badly
enough before long--" Buck relapsed into moody silence.

"What," asked Faragaut, looking around him, "does that mean?"

It was McLaurin who told him of the stranger ship, and Kendall's interpretation of its meaning. Slowly Faragaut
grasped the meaning behind Buck's strange actions of the past months.

Buck, you said something about the profits of this venture. What did you mean?"

Buck smiled. "We're going to stick up IP to the extent necessary to pay for that fort--er--bank--on Luna. We'll
also boost the price so that we'll make enough to pay for those ships I'm having made. The public will pay for that."

"I see. And we aren't to stick the price too high, and just make money?"

"That's the general idea."

"The IP Appropriations Board won't give you what you need, Commander, for real improvements on the IP
ships?"

"They won't believe Kendall. Therefore they won't."

"What did you mean about gamma rays, Buck?"

"Mercury will stop them and the Commander here intends to have the refitted ships built so that the engine
room and control room are one, and completely surrounded by the mercury tanks. The men will be protected against
the gamma rays."

"Won't the rays affect the power stored in the mercury--perhaps release it?"

"We tried it out, of course, and while we can't get the intensities we expect, and can't really make any
measurements of the gamma-ray energy impinging on the mercury--it seems to absorb, and store that energy!"

"What's next on the program, Buck?"

"Finish those ships I have building. And I want to do some more development work. The Stranger will return
within six months now, I believe. It will take all that time, and more for real refitting of the IP ships."

"How about more forts--or banks, whichever you want to call them. Mars isn't protected."

"Mars is abandoned," replied General Logan seriously. "We haven't any too much to protect old Earth, and she
must come first. Mars will, of course, be protected as best the IP ships can. But--we're expecting defeat. This isn't a
case of glorious victory. It will be a case of hard won survival. We don't know anything about the enemy--except
that they are capable of interstellar flights, and have atomic energy. They are evidently far ahead of us. Our battle is
to survive till we learn how to conquer. For a time, at least, the Strangers will have possession of most of the planets
of the system. We do not think they will be able to reach Earth, because Commander McLaurin here will withdraw
his ships to Earth to protect the planet--and the great 'Lunar Bank' will display its true character."

VII

Faragaut looked unsympathetically at Buck Kendall, as he stood glaring perplexedly at the apparatus he had
been working on.

"What's the matter, Buck, won't she perk?"

"No, damn it, and it should."

"That," pointed out Faragaut, "is just what you think. Nature thinks otherwise. We generally have to abide by
her opinions. What is it--or what is it meant to be?"

"Perfect reflector."

"Make a nice mirror. What else, and how come?"

"A mirror is just what I want. I want something that will reflect all the radiation that falls on it. No metal will,
even in its range of maximum reflectivity. Aluminum goes pretty high, silver, on some ranges, a bit higher. But none
of them reaches 99%. I want a perfect reflector that I can put behind a source of wild, radiant energy so I can focus
it, and put it where it will do the most good."

"Ninety-nine percent. Sounds pretty good. That's better efficiency than most anything else we have, isn't it?"

"No, it isn't. The accumulator is 100% efficient on the discharge, and a good transformer, even before that, ran
as high as 99.8 sometimes. They had to. If you have a transformer handling 1,000,000 horsepower, and it's even 1%
inefficient, you have a heat loss of nearly 10,000 horsepower to handle. I want to use this as a destructive weapon, and if I hand the other fellow energy in distressing amounts, it's even worse at my end, because no matter how perfect a beam I work out, there will still be some spread. I can make it mighty tight though, if I make my surface a perfect parabola. But if I send a million horse, I have to handle it, and a ship can't stand several hundred thousand horsepower roaming around loose as heat, let alone the weapon itself. The thing will be worse to me than to him.

"I figured there was something worth investigating in those fields we developed on our magnetic shield work. They had to do, you know, with light, and radiant energy. There must be some reason why a metal reflects. Further, though we can't get down to the basic root of matter, the atom, yet, we can play around just about as we please with molecules and molecular forces. But it is molecular force that determines whether light and radiant energy of that caliber shall be reflected or transmitted. Take aluminum as an example. In the metallic molecule state, the metal will reflect pretty well. But volatilize it, and it becomes transparent. All gases are transparent, all metals reflective. Then the secret of perfect reflection lies at a molecular level in the organization of matter, and is within our reach. Well--this thing was supposed to make that piece of silver reflective. I missed it that time." He sighed. "I suppose I'll have to try again."

"I should think you'd use tungsten for that. If you do have a slight leak, that would handle the heat."

"No, it would hold it. Silver is a better conductor of heat. But the darned thing won't work."

"Your other scheme has." Faragaut laughed. "I came out principally for some signatures. IP wants one hundred thousand tons of mercury. I've sold most of mine already in the open market. You want to sell?"

"Certainly. And I told you my price."

"I know," sighed Faragaut. "It seems a shame though. Those IP board men would pay higher. And they're so damn tight it seems a crime not to make 'em pay up when they have to."

"The IP will need the money worse elsewhere. Where do I--oh, here?"

"Right. I'll be out again this evening. The regular group will be here?"

Kendall nodded as he signed in triplicate.

* * * * *

That evening, Buck had found the trouble in his apparatus, for as he well knew, the theory was right, only the practical apparatus needed changing. Before the group composed of Faragaut, McLaurin and the members of Kendall's "bank," he demonstrated it.

It was merely a small, model apparatus, with a mirror of space-strained silver that was an absolutely perfect reflector. The mirror had been ground out of a block of silver one foot deep, by four inches square, carefully annealed, and the work had all been done in a cooling bath. The result was a mirror that was so nearly a perfect paraboloid that the beam held sharp and absolutely tight for the half-mile range they tested it on. At the projector it was three and one-half inches in diameter. At the target, it was three and fifty-two one hundredths inches in diameter.

"Well, you've got the mirror, what are you going to reflect with it now?" asked McLaurin. "The greatest problem is getting a radiant source, isn't it? You can't get a temperature above about ten thousand degrees, and maintain it very long, can you?"

"Why not?" Kendall smiled.

"It'll volatilize and leave the scene of action, won't it?"

"What if it's a gaseous source already?"

"What? Just a gas-flame? That won't give you the point source you need. You're using just a spotlight here, with a Moregan Point-light. That won't give you energy, and if you use a gas-flame, the spread will be so great, that no matter how perfectly you figure your mirror, it won't beam."

"The answer is easy. Not an ordinary gas-flame--a very extra-special kind of gas-flame. Know anything about Renwright's ionization-work?"

"Renwright--he's an IP man isn't he?"

"Right. He's developed a system, which, thanks to the power we can get in that atostor, will sextuply ionize oxygen gas. Now: what does that mean?"

" Spirits of space! Concentrated essence of energy!"

"Right. And in preparation, Cole here had one made up for me. That--and something else. We'll just hook it up--"

With Devin's aid, Kendall attached the second apparatus, a larger device into which the silver block with its mirror surface fitted. With the uttermost care, the two physicists lined it up. Two projectors pointed toward each other at an angle, the base angles of a triangle, whose apex was the center of the mirror. On very low power, a soft, glowing violet light filtered out through the opening of the one, and a slight green light came from the other. But where the two streams met, an intense, violet glare built up. The center of action was not at the focus, and slowly
this was lined up, till a sharp, violet beam of light reached out across the open yard to the target set up.

Buck Kendall cut off the power, and slowly got into position. "Now. Keep out from in front of that thing. Put on these glasses--and watch out." Heavy, thick-lensed orange-brown goggles were passed out, and Kendall took his place. Before him, a thick window of the same glass had been arranged, so that he might see uninterrupted the controls at hand, and yet watch unblinded, the action of the beam.

Dully the mirror-force relay clicked. A hazy glow ran over the silver block, and died. Then--simultaneously the power was thrown from two small, compact astotors into the twin projectors. Instantly--a Titanic eruption of light almost invisibly violet, spurted out in a solid, compact stream. With a roar and crash, it battered its way through the thick air, and crashed into the heavy target plate. A stream of flame and scintillating sparks erupted from the armor plate--and died as Kendall cut the beam. A white-hot area a foot across leaked down the face of the metal.

"That," said Faragaut gently, removing his goggles. "That's not a spotlight, and it's not exactly a gas-flame. But I still don't know what that blue-hot needle of destruction is. Just what do you call that tame stellar furnace of yours?"

"Not so far off, Tom," said Kendall happily, "except that even S Doradus is cold compared to that. That sends almost pure ultra-violet light--which, by the way, is almost impossible to reflect successfully, and represents a temperature to be expressed not in thousands of degrees, nor yet in tens of thousands. I calculated the temperature would be about 750,000 degrees. What is happening is that a stream of low-voltage electrons--cathode rays--in great quantity are meeting great quantities of sextuply ionized oxygen. That means that a nucleus used to having two electrons in the K-ring, and six in the next, has had that outer six knocked off, and then has been hurled violently into free air.

"All by themselves, those sextuply ionized oxygen atoms would have a good bit to say, but they don't really begin to talk till they start roaring for those electrons I'm feeding them. At the meeting point, they grab up all they can get--probably about five--before the competition and the fierce release of energy drives them out, part-satisfied. I lose a little energy there, but not a real fraction. It's the howl they put up for the first four that counts. The electron-feed is necessary, because otherwise they'd smash on and ruin that mirror. They work practically in a perfect vacuum. That beam smashes the air out of the way. Of course, in space it would work better."

"How could it?" asked Faragaut, faintly.

"Kendall," asked McLaurin, "can we install that in the IP ships?"

"You can start." Kendall shrugged. "There isn't a lot of apparatus. I'm going to install them in my ships, and in the--bank. I suspect--we haven't a lot of time left."

"How near ready are those ships?"

"About. That's all I can say. They've been torn up a bit for installation of the astotor apparatus. Now they'll have to be changed again."

"Anything more coming?"

Buck smiled slowly. He turned directly to McLaurin and replied: "Yes--the Strangers. As to developments--I can't tell, naturally. But if they do, it will be something entirely unexpected now. You see, given one new discovery, a half-dozen will follow immediately from it. When we announced that astotor, look what happened. Renwright must have thought it was God's gift to suffering physicists. He stuck some oxygen in the thing, added some of his own stuff--and behold. The magnetic apparatus gave us directly the shield, and indirectly this mirror. Now, I seem to have reached the end for the time. I'm still trying to get that space-release for high speed--speed greater than light, that is. So far," he added bitterly, "all I've gotten as an answer is a single expression that simply means practical zero--Heisenberg's Uncertainty Expression."

"I'm uncertain as to your meaning"--McLaurin smiled--"but I take it that's nothing new."

"No. Nearly four centuries old--twentieth century physics. I'll have to try some other line of attack, I guess, but that did seem so darned right. It just sounded right. Something ought to happen--and it just keeps saying 'nothing more except the natural uncertainty of nature.'"

"Try it out, your math might be wrong somewhere."

Kendall laughed. "If it was--I'd hate to try it out. If it wasn't I'd have no reason to. And there's plenty of other work to do. For one thing, getting that apparatus in production. The IP board won't like me." Kendall smiled.

"They don't," replied McLaurin. "They're getting more and more and more worried--but they've got to keep the IP fleet in such condition that it can at least catch an up-to-date freighter."

Gresth Gkae looked back at Sthor rapidly dropping behind, and across at her sister world, Asthor, circling a bare 100,000 miles away. Behind his great interstellar cruiser came a long line of similar ships. Each was loaded now not with instruments and pure scientists, but with weapons, fuel and warriors. Colonists too, came in the last ships. One hundred and fifty giant ships. All the wealth of Sthor and Asthor had been concentrated in producing
those great machines. Every one represented nearly the equivalent of thirty million Earth-dollars. Four and a half billions of dollars for mere materials.

Gresth Gkae had the honor of lead position, for he had discovered the planets and their stable, though tiny, sun. Still, Gresth Gkae knew his own giant Mira was a super-giant sun—and a curse and a menace to any rational society. Our yellow-white sun (to his eyes, an almost invisible color, similar to our blue) was small, but stable, and warm enough.

In half an hour, all the ships were in space, and at a given signal, at ten-second intervals, they sprang into the superspeed, faster than light. For an instant, giant Mira ran and seemed distorted, as though seen through a porthole covered with running water, then steadied, curiously distorted. Faster than light they raced across the galaxy.

Even in their super-fast ships, nearly three and a half weeks passed before the sun they sought, singled itself from the star-field as an extra bright point. Two days more, and the sun was within planetary distance. They came at an angle to the plane of the ecliptic, but they leveled down to it now, and slanted toward giant Jupiter and Jovian worlds. Ten worlds, in one sweep, it was—four habitable worlds. The nine satellites would be converted into forts at once, nine space-sweeping forts guarding the approaches to the planet. Gresth Gkae had made a fairly good search of the worlds, and knew that Earth was the main home of civilization in this system. Mars was second, and Venus third. But Jupiter offered the greatest possibilities for quick settlement, a base from which they could more easily operate, a base for fuels, for the heavy elements they would need--

Fifteen million miles from Jupiter they slowed below the speed of light—and the IP stations observed them. Instantly, according to instructions issued by Commander McLaurin, a fleet of ten of the tiniest, fastest scouts darted out. As soon as possible, a group of three heavy cruisers, armed with all the inventions that had been discovered, the atostor power system, perfectly conducting power leads, the terrible UV ray, started out.

The scouts got there first. Cameras were grinding steadily, with long range telescopic lenses, delicate instruments probed and felt and caught their fingers in the fields of the giant fleet.

At ten-second intervals, giant ships popped into being, and glided smoothly toward Jupiter.

Then the cruisers arrived. They halted at a respectful distance, and waited. The Miran ships plowed on undisturbed. Simultaneously, from the three leaders, terrific neutron rays shot out. The paraffin block walls stopped those—and the cruisers started to explain their feelings on the subject. They were the IP-J-37, 39, and 42. The 37 turned up the full power of the UV ray. The terrific beam of ultra-violet energy struck the second Miran ship, and the spot it touched exploded into incandescence, burned white-hot—and puffed out abruptly as the air pressure within blew the molten metal away.

The Mirans were startled. This was not the type of thing Gresth Gkae had warned them of. Gresth Gkae himself frowned as the sudden roar of the machines of his ship rose in the metal walls. A stream of ten-inch atomic bombs shrieked out of their tubes, fully glowing green things floated out more slowly, and immediately waxed brilliant. Gamma ray bombs—but they could be guarded against--

The three Solarian cruisers were washed in such frightful flame as they had never imagined. Streams of atomic bombs were exploding soundlessly, ineffectively in space, not thirty feet from them as they felt the sudden resistance of the magnetic shields. Hopefully, the 39 probed with her neutron gun. Nothing happened save that several gamma ray bombs went off explosively, and all the atomic bombs in its path exploded at once.

Gresth Gkae knew what that meant. Neutron beam guns. Then this race was more intelligent than he had believed. They had not had them before. Had he perhaps given them too much warning and information?

There was a sudden, deeper note in the thrumming roar of the great ship. Eagerly Gresth Gkae watched—and sighed in relief. The nearer of the three enemy ships was crumbling to dust. Now the other two were beginning to become blurred of outline. They were fleeing—but oh, so slowly. Easily the greater ship chased them down, till only floating dust, and a few small pieces of--

Gresth Gkae shrieked in pain, and horror. The destroyed ships had fought in dying. All space seemed to blossom out with a terrible light, a light that wrapped around them, and burned into him, and through him. His eyes were dark and burning lumps in his head, his flesh seemed crawling, stinging—he was being flayed alive—in shrieking agony he crumpled to the floor.

Hospital attachés came to him, and injected drugs. Slowly torturing consciousness left him. The doctors began working over his horribly burned body, shuddering inwardly as the protective, feather-like covering of his skin loosened, and dropped from his body. Tenderly they lowered him into a bath of chemicals--

"The terrible light which caused so much damage to our men," reported a physicist, "was analyzed, and found to have some extraordinary lines. It was largely mercury-vapor spectrum, but the spectrum of mercury-atoms in an impossibly strained condition. I would suggest that great care be used hereafter, and all men be equipped with protective masks when observations are needed. This sun is very rich in the infra-X-rays and ultra-visible light. The explosion of light, we witnessed, was dangerous in its consisting almost wholly of very short and hard infra-X-rays."
The physicist had a special term for what we know as ultra-violet light. To him, blue was ultra-violet, and exceedingly dangerous to red-sensitive eyes. To him, our ultra-violet was a long X-ray, and was designated by a special term. And to him—the explosion of the atostor reservoirs was a terrible and mystifying calamity.

To the men in the five tiny scout-ships, it was also a surprise, and a painful one. Even space-hardened humans were burned by the terrifically hard ultra-violet from the explosion. But they got some hint of what it had meant to the Mirans from the confusion that resulted in the fleet. Several of the nearer ships spun, twisted, and went erratically off their courses. All seemed uncontrolled momentarily.

The five scouts, following orders, darted instantly toward the Lunar Bank. Why, they did not know. But those were orders. They were to land there.

The reason was that, faster than any Solarian ship, radio signals had reached McLaurin, and he, and most of the staff of the IP service had been moved to the Lunar Bank. Buck Kendall had extended an invitation in this "unexpected emergency." It so happened that Buck Kendall's invitation got there before any description of the Strangers, or their actions had arrived. The staff was somewhat puzzled as to how this happened--

And now for the satellites of great Jupiter.

One hundred and fifty giant interstellar cruisers advanced on Callisto. They didn't pause to investigate the mines and scattered farms of the satellite, but ten great ships settled, and a horde of warriors began pouring out.

One hundred and forty ships reached Ganymede. One hundred and thirty sailed on. One hundred and thirty ships reached Europa--and they sailed on hurriedly, one hundred and twenty-nine of them. Gresth Gkae did not know it then, but the fleet had lost its first ship. The IP station on Europa had spoken back.

They sailed in, a mighty armada, and the first dropped through Europa's thin, frozen atmosphere. They spotted the dome of the station, and a neutron ray lashed out at it. On the other, undefended worlds, this had been effective. Here--it was answered by ten five-foot UV rays. Further, these men had learned something from the destruction of the cruisers, and ten torpedoes had been unloaded, reloaded with atostor mercury, and sent out bravely.

Easily the Mirans wiped out the first torpedo--

Shrieking, the Miran pilots clawed their way from the controls as the fearful flood of ultra-violet light struck their unaccustomed skins. Others too felt that burning flood.

The second torpedo they caught and deflected on a beam of alternating-current magnetism that repelled it. It did not come nearer than half a mile to the ship. The third they turned their deflecting beam on--and something went strangely wrong with the beam. It pulled that torpedo toward the ship with a sickening acceleration--and the torpedo exploded in that frightful violet flame.

Five-foot diameter UV beams are nothing to play with. The Mirans were dodging these now as they loosed atomic bombs, only to see them exploded harmlessly by neutron guns, or caught in the magnetic screen. Gamma ray bombs were as useless. Again the beam of disintegrating force was turned on--

The present opponent was not a ship. It was an IP defense station, equipped with everything Solarian science knew, and the dome was an eight-foot wall of tungsten-beryllium. The eight feet of solid, ultra-resistant alloy drank up that crumbling beam, and liked it. The wall did not fail. The men inside the fort jerked and quivered as the strange beam, a small, small fraction of it, penetrated the eight feet of outer wall, the six feet or so of intervening walls, and the mercury atostor reserves.

"Concentrate all those UV beams on one spot, and see if you can blast a hole in him before he shakes it loose," ordered the ray technician. "He'll wiggle if you start off with the beam. Train your sights on the nose of that first ship--when you're ready, call out."

"Ready--ready--" Ten men replied. "Fire!" roared the technician. Ten titanic swords of pure ultra-violet energy, energy that practically no unconditioned metal will reflect to more than fifty per cent, emerged. There was a single spot of intense incandescence for a single hundredth of a second--and then the energy was burning its way through the inner, thinner skins with such rapidity that they sputtered and flickered like a broken televistor.

One hundred and twenty-nine ships retreated hastily for conference, leaving a gutted, wrecked hull, broken by its fall, on Europa. Triumphantly, the Europa IP station hurled out its radio message of the first encounter between a fort and the Miran forces.

Most important of all, it sent a great deal of badly wanted information regarding the Miran weapons. Particularly interesting was the fact that it had withstood the impact of that disintegrating ray.

Grimly Buck Kendall looked at the reports. McLaurin stood beside him, Devin sat across the table from him. "What do you make of it, Buck?" asked the Commander.

"That we have just one island of resistance left on the Jovian worlds. And that will, I fear, vanish. They haven't finished with their arsenal by any means."
"But what was it, man, what was it that ruined those ships?"

"Vibration. Somehow--Lord only knows how it's done--they can project electric fields. These projected fields are oscillated, and they are tuned in with some parts of the ship. I suspect they are crystals of the metals. If they can start a vibration in the crystals of the metal--that's fatigue, metal fatigue enormously speeded. You know how a quartz crystal oscillator in a radio-control apparatus will break, if you work it on a very heavy load at the peak? They simply smash the crystals of metal in the same way. Only they project their field."

"Then our toughest metals are useless? Can't something tough, rather than hard, like copper or even silver for instance, stand it?"

"Calcium metal's the toughest going--and even that would break under the beating those ships give it. The only way to withstand it is to have such a mass of metal that the oscillations are damped out. But--"

The set tuned in on the IP station on Europa was speaking again. "The ships are returning. There are one hundred and twenty-nine by accurate count. Jorgsen reports that telescopic observation of the dead on the fallen cruiser show them to be a completely un-human race! They are of mottled coloring, predominately grayish brown. The ships are returning. They have divided into ten groups, nine groups of two each, and a main body of the rest of the fleet. The group of eighteen is descending within range, and we are focusing our beams on them--"

Out by Europa, ten great UV beams were stabbing angrily toward ten great interstellar ships. The metal of the hulls glowed brilliant, and distorted slowly as the thick walls softened under the heat, and the air behind pressed against it. Grimly the ten ships came on. Torpedoes were being launched, and exploded, and now they had no effect, for the Mirans within were protected.

The eighteen grouped ships separated, and arranged themselves in a circle around the fort. Suddenly one staggered as a great puff of gas shot out through the thin atmosphere of Europa to flare brilliantly in the lash of the stabbing UV beam. Instantly the ship righted itself, and labored upward. Another dropped to take its place--

And the great walls of the IP fort suddenly groaned and started in their welded joints. The faint, whispering rustle of the crumbling beam was murmuring through the station. Engineers shouted suddenly as meters leapt the length of their scales, and the needles clicked softly on the stop pins. A thin rustle came from the atostors grouped in the great power room. "Spirits of Space--a revolving magnetic field!" roared the Chief Technician. "They're making this whole blasted station a squirrel cage!"

The mighty walls of eight-foot metal shuddered and trembled. The UV beams lashed out from the fort in quivering arcs now, they did not hold their aim steady, and the magnetic shield that protected them from atomic bombs was working and straining wildly. Eighteen great ships quivered and tugged outside there now, straining with all their power to remain in the same spot, as they passed on from one to another the magnetic impulses that were now creating a titanic magnetic vortex about the fort.

"The atostors will be exhausted in another fifteen minutes," the Chief Technician roared into his transmitter. "Can the signals get through those fields, Commander?"

"No, Mac. They've been stopped, Sparks tells me. We're here--and let's hope we stay. What's happening?"

"They've got a revolving magnetic field out there that would spin a minor planet. The whole blasted fort is acting like the squirrel cage in an induction motor! They've made us the armature in a five hundred million horsepower electric motor."

"They can't tear this place loose, can they?"

"I don't know--it was never--" The Chief stopped. Outside a terrific roar and crash had built up. White darts of flame leapt a thousand feet into the air, hurling terrific masses of shattered rock and soil.

"I was going to say," the Chief went on, "this place wasn't designed for that sort of a strain. Our own magnetic field is supporting us now, preventing their magnetic field from getting its teeth on metal. When the strain comes--well, they're cutting loose our foundation with atomic bombs!"

Five UV beams were combined on one interstellar ship. Instantly the great machine retreated, and another dropped in to take its place while the magnetic field spun on, uninterruptedly.

"Can they keep that up long?"

"God knows--but they have a hundred and more ships to send in when the power of one gives out, remember."

"What's our reserve now?"

The Chief paused a moment to look at the meters. "Half what it was ten minutes ago!"

Commander Wallace sent some other orders. Every torpedo tube of the station suddenly belched forth deadly, fifteen-foot torpedoes, most of them mud-torpedoes, torpedoes loaded with high explosive in the nose, a delayed fuse, and a load of soft clinging mud in the rear. The mud would flow down over the nose and offer a resistance foot-hold for the explosive which empty space would not. Four hundred and three torpedoes, equipped with antimagnetic apparatus darted out. One hundred and four passed the struggling fields. One found lodgement on a Miran ship, and crushed in a metal wall, to be stopped by a bulkhead.
The Chief engineer watched his power declining. All ten UV beams were united in one now, driving a terrible sword of energy that made the attacked ship skip for safety instantly, yet the beams were all but useless. For the Miran reserves filled the gap, and the magnetic tornado continued.

For seventeen long minutes the station resisted the attack. Then the last of the strained mercury flowed into the receivers, and the vast power of the atostors was exhausted. Slowly the magnetic fields declined. The great walls of the station felt the clutching lines of force—they began to heat and to strain. A low, harsh grinding became audible over the roar of the atomic bombs. The whole structure trembled, and jumped slightly. The roar of bombs ceased suddenly, as the station jerked again, more violently. Then it turned a bit, rolled clumsily. Abruptly it began to spin violently, more and more rapidly. It started rolling clumsily across the plateau--

A rain of atomic bombs struck the unprotected metal, and the eighth breached the walls. The twentieth was the last. There was no longer an IP station on Europa.

"The difference," said Buck Kendall slowly, when the reports came in from scout-ships in space that had witnessed the last struggle, "between an atomic generator and an atomic power-store, or accumulator, is clearly shown. We haven't an adequate source of power."

McLaurin sighed slowly, and rose to his feet. "What can we do?"

"Thank our lucky stars that Faragaut here, and I, bought up all the mercury in the system, and had it brought to Earth. We at least have a supply of materials for the atostors."

"They don't seem to do much good."

"They're the best we've got. All the photocells on Earth and Venus and Mercury are at present busy storing the sun's power in atostors. I have two thousand tons of charged mercury in our tanks here in the 'Lunar Bank.'"

"Much good that will do—they can just pull and pull and pull till it's all gone. A starfish isn't strong, but he can open the strongest oyster just because he can pull from now on. You may have a lot of power—but."

"But—we also have those new fifteen-foot UV beams. And one fifteen-foot UV beam is worth, theoretically, nine five-foot beams, and practically, a dozen. We have a dozen of them. Remember, this place was designed not only to protect itself, but Earth, too."

"They can still pull, can't they?"

"They'll stop pulling when they get their fingers burned. In the meantime, why not use some of those IP ships to bring in a few more cargoes of charged mercury?"

"They aren't good for much else, are they? I wonder if those fellows have anything more we don't know?"

"Oh, probably. I'm going to work on that crumbler thing. That's the first consideration now."

"Why?"

"So we can move a ship. As it is, even those two we built aren't any good."

"Would they be anyway?"

"Well—I think I might disturb those gentlemen slightly. Remember, they each have a nose-beam eighteen feet across. Exceedingly unpleasant customers."

"Score: Strangers; magnetic field, atomic bombs, atomic power, crumbler ray. Home team; UV beams."

Kendall grinned. "I'd heard you were a pessimistic cuss when battle started—"

"Pessimistic, hell, I'm merely counting things up."

"McClellan had all the odds on Lee back in the Civil War of the States—but Lee sent him home faster than he came."

"But Lee lost in the end."

"Why bring that up? I've got work to do." Still smiling, Kendall went to the laboratory he had built up in the "Lunar Bank." Devin was already there, calculating. He looked unhappy.

"We can't do anything, as far as I can see. They're using an electric field all right, and projecting it. I can't see how we can do that."

"Neither can I," agreed Kendall, "so we can't use that weapon. I really didn't want to anyway. Like the neutron gun which I told Commander McLaurin would be useless as a weapon, they'd be prepared for it, you can be sure. All I want to do is fight it, and make their projection useless."

"Well, we have to know how they project it before we can break up the projection, don't we?"

"Not at all. They're using an electric field of very high frequency, but variable frequency. As far as I can see, all we need is a similar variable electric field of a slightly different frequency to heterodyne theirs into something quite harmless."

"Oh," said Devin. "We could, couldn't we? But how are you going to do that?"

"We'll have to learn, that's all."

Buck Kendall started trying to learn. In the meantime, the Mirans were taking over Jupiter. There were three IP
stations on the planet itself, but they were vastly hindered by the thick, almost ultra-violet-proof atmosphere of Jupiter. Their rays were weak. And the magnetic fields of the Mirans were unaffected. Only their atomic bombs were hindered by the heavier gravity that pulled the rocks back in place faster than the bombs could throw them out. Still--a few hours of work, and the IP stations on Jupiter had rolled wildly across the flat plains of the planet like dented cans, to end in utter destruction.

The Mirans had paid no attention to the fleeing passenger and freighter ships that left the planet, loaded to the utmost with human cargo, and absolutely no freight. The IP fleet had to go to their rescue with oxygen tanks to take care of the extra humans, but nearly three-quarters of the population of Jupiter, a newly established population, and hence a readily mobile one, was saved. The others, the Mirans did not bother with particularly except when they happened to be near where the Mirans wanted to work. Then they were instantly destroyed by atomic bombing, or gamma rays.

The Mirans settled almost at once, and began their work of finding on Jupiter the badly needed atomic fuels. Machines were set up, and work begun, Mirans laboring under the gravity of the heavy planet. Then, fifty ships swam up again, reloaded with fuel, and with crews consisting solely of uninjured warriors, and started for Mars.

Mars was half way between her near conjunction and her maximum elongation with respect to Jupiter at that time. The Mirans knew their business though, for they started in on the IP station on Phobos. They were practiced by this time, and this IP station had only seven five-foot beams. In half an hour that station fell, and its sister station on Deimos followed. Three wounded ships returned to Jupiter, and ten new ships came out. The attack on Mars itself was started.

Mars was a different proposition. There were thirty-two IP stations here, one of them nearly as powerful as the Lunar Bank station. It was equipped with four of the huge fifteen-foot beams. And it had fifteen tons of mercury, more than seven-eighths charged. The Mars Center Station was located a short ten miles from the Mars Center City, and under the immediate orders of the IP heads, Mars Center City had been vacated.

For two days the Mirans hung off Mars, solidifying their positions on Phobos and Deimos. Then, with sixty-two ships, they attacked. They had made some very astute observations, and they started on the smaller stations just beyond the range of the Mars Center Station. Naturally, near so powerful a center, these stations had never been strong. They fell rapidly. But they had been counted on by Mars Center as auxiliary supports. McLaurin had sent very definite orders to Mars Center forbidding any action on their part, save gathering of power-supplies.

At last the direct attack on Mars Center was launched. For the first time, the Mirans saw one of the fifteen-foot beams. Mars' atmosphere is thin, and there is little ozone. The ultra-violet beams were nearly as effective as in empty space. When the Mirans dropped their ships, a full thirty of them, into the circle formation, Mars Center answered at once. All four beams started.

Those fifteen-foot beams, connected directly to huge atostor release apparatus, delivered a maximum power of two and three-quarter billion horsepower, each. The first Miran ship struck, sparkled magnificently, and a terrific cascade of white-hot metal rolled down from its nose. The great ship nosed down and to the left abruptly, accelerated swiftly--and crashed with tremendous energy on the plain outside of Mars Center City. White, unwavering flames licked up suddenly, and made a column five hundred feet high against the dark sky. Then the wreck exploded with a violence that left a crater half a mile across.

Three other ships had been struck, and were rapidly retreating. Another try was made for the ring formation, and four more ships were wounded, and replaced. The ring did not retreat, but the great magnetic field started. Atomic and gamma ray bombs started now, flashing sometimes dangerously close to the station as its magnetic field battled the rotating field of the ships. The four greater beams, and many smaller ones were in swift and angry action. Not more than a ten-second exposure could be endured by any one ship, before it must retreat.

For five minutes the Mirans hung doggedly at their task. Then, wisely, they retreated. Of the fleet, not more than seven ships remained untouched. Mars Center Station had held--at what cost only they knew. Five hundred tons of their mercury had been exhausted in that brief five minutes. One hundred tons a minute had flowed into and out of the atostor apparatus. Mars Center radioed for help, when the fleet lifted.

There was one other station on Mars that stood a good chance of survival, Deenmor Station, with three of the big beams installed, and apparatus for their fourth was in the station, and being rapidly worked over. McLaurin did a wise and courageous thing, at which every man on Mars cursed. He ordered that all IP stations save these two be deserted, and all mercury fuel reserves be moved to Deenmor and Mars Center.

The Mirans could not land on the North Western section of Mars, nor in the South Central region. Therefore Mars was not exactly habitable to Miran ships, because the great beams had been so perfectly figured that they were effective at a range of nearly twelve hundred miles.

Deenmor station was attacked--but it was a half-hearted attack, for Mirans were becoming distinctly skittish
about fifteen-foot UV beams. Two badly blistered ships--and the Mirans retreated to Jupiter. But Mira held Phobos and Deimos. In two weeks, they had set up cannon there, and proved themselves accurate long-range gunners. Against the feeble attraction of Deimos, and with Mars' gravity to help them, they began bombarding the two stations, and anything that attempted to approach them, with gamma and atomic explosive bombs. Meanwhile they amused themselves occasionally by planting a gamma-ray bomb in each of Mars' major cities. They made Mars uninhabitable for Solarians as well as for Mirans, at least until the deadly slow-action atomic explosives wore off, or were removed.

Then the Mirans, after a lapse of three weeks while they dug in their toes on Jupiter, prepared to leap. Earth was the next goal. Miran scout-ships had been sent out before this--and severely handled by the concentrated fleets of the IP that hung grimly off Earth and Luna now. But the scouts had learned one thing. Mirans could never hope to attain a firm grasp on Earth while terribly armed Luna hung like a Sword of Damocles over their heads. Further, attack on Earth directly would be next to impossible, for, thanks to Faragaut's Interplanetary Company, nearly all the mercury metal in the system was safely lodged on Earth, and saturated with power. Every major city had been equipped with great UV apparatus. And neutron guns in plenty waited on small ships just outside the atmosphere to explode harmlessly any atomic or gamma bombs Miran ships might attempt to deposit.

An attack on Luna was the first step. But that terrible, gigantic fort on Luna worried them. Yet while that fort existed, Earth ships were free to come and go, for Mirans could not afford to stand near. At a distance of twenty thousand miles, small Miran ships had felt the touch of those great UV beams.

Finally, a brief test-attack was made, with an entire fleet of one hundred ships. They drew almost into position, faster than light, faster than the signaling warnings could send their messages. In position, all those great ships strained and heaved at the mighty magnetic vortex that twisted at the field of the fort. Instantly, twelve of the fifteen-foot UV beams replied. And--two great UV beams of a size the Mirans had never seen before, beams from the two ships, "S Doradus" and "Cepheid."

The test-attack dissolved as suddenly as it had come. The Mirans returned to Jupiter, and to the outer planets where they had further established themselves. Most of the Solar system was theirs. But the Solarians still held the choicest planets--and kept the Mirans from using the mild-temperatured Mars.

IX
"They can't take this, at least," sighed McLaurin as they retreated from Luna.
"I didn't think they could--right away. I'm wondering though if they haven't something we haven't seen yet. Besides which--give them time, give them time."
"Well, give us time, too," snapped McLaurin. "How are you coming?"
Buck smiled. "I'm sure I don't know. I have a machine but I haven't the slightest idea of whether or not it's any good."
"Why not?"
"I can destroy--I hope--but I can't build up their ray. I can't test the machine because I haven't their ray to test it against."
"What can we do to test it?"
"The only thing I can see is to call for volunteers--and send out a six-man cruiser. If the ship's too small, they may not destroy it with the big crumbler rays. If it's too large--and the machine didn't work--we'd lose too much."

Twelve hours later, the IP men at the Lunar Bank fort were lined up. McLaurin stepped up on the platform, and addressed the men briefly, told them what was needed. Six volunteers were selected by a process of elimination, those who were married, had dependents, officers, and others were refused. Finally, six men of the IP were chosen, neither rookies nor veterans, six average men. And one average six-man cruiser, one hundred and eleven feet long, twenty-two in diameter. It was the T-208, a sister ship of the T-247, the first ship to be destroyed.

The T-208 started out from Luna, and with full acceleration, sped out toward Phobos. Slowly she circled the satellite, while distant scouts kept her under view. Lazily, the Miran patrol on Phobos watched the T-208, indifferent to her. The T-208 dove suddenly, after five fruitless circles of the tiny world, and with her four-foot UV beam flaming, stabbed angrily at a flight of Miran scouts berthed in the very shadow of a great battle cruiser, one of the interstellar ships stationed here on Phobos.

Four of the little ships slumped in incandescence. Angrily the terrific sword of energy slashed at the frail little scouts.
Angrily the Miran interstellar ship shot herself abruptly into action against this insolent cruiser. The cruiser launched a flight of the mercury-torpedoes. Flashing, burning, ultra-violet energy flooded the great ship, harmlessly, for the men were, as usual, protected. The Miran answered with the neutron beam, atomic and gamma bombs--and the crumbler ray.

Gently, softly a halo of shimmering-violet luminescence built up about the T-208. The UV beam continued to
flare, wavering slightly in its aim--then fell way off to one side. The T-208 staggered suddenly, wandered from her course--whole, but uncontrolled. For the men within the ship were dead.

Majestically the Miran swung along beside the dead ship, a great magnetic tow-cable shot out toward it, to shy off at first, then slowly to be adjusted, and take hold in the magnetic shield of the T-208. The pilots of the watching scout-ships turned away. They knew what would happen.

It did. Five--ten--twenty seconds passed. Then the "dead-man" took over the ship--and the stored power in the atostor tanks blasted in a terrible flame that shattered the metal hull to molecular fragments. The interstellar cruiser shuddered, and rolled half over at the blasting pressure. Leaking seams appeared in her plates.

The scouts raced back to Luna as the Miran settled heavily, and a trifle clumsily to Phobos. Miran radio-beams were forcing their way out toward the Miran station on Europa, to be relayed to the headquarters on Jupiter, just as Solarian radio beams were thrusting through space toward Luna. Said the Miran messages: "Their ships no longer crumble." Said the Solarian messages: "The ships no longer crumble--but the men die."

* * * * *

His deep eyes burning tensely, Buck Kendall heard the messages coming in, and rose slowly from his seat to pace the floor. "I think I know why," he said at last. "I should have thought. For that too can be prevented."

"Why--what in the name of the Planets?" asked McLaurin. "It didn't kill the men in the forts--why does it kill the men in the ships, when the ships are protected?"

"The protection kills them."

"But--but they had the protective oscillations on all the way out!" protested the Commander.

"Think how it works though. Think, man. The enemy's field is an electric-field oscillation. We combat it by setting up a similar oscillating field in the metal of the hull ourselves. Because the metal conducts the strains, they meet, and oppose. It is not a shield--a shield is impossible, as I have said, because of energy concentration factors. If their beam carried a hundred thousand horsepower in a ten-foot square beam, in every ten square feet of our shield, we'd have to have one hundred thousand horsepower. In other words, hundreds of times as much energy would be needed in the shield, as they used in their beam. We can't afford that. We had to let the beams oppose our oscillations in the metal, where, because the metal conducts, they meet on an equal basis. But--when two oscillations of slightly different frequency meet, what is the result?"

"In this case, a heterodyne frequency of a lower, and harmless frequency."

"So I thought. I was partly right. It does not harm the metal. But it kills the men. It is super-sonic. The terrible, shrill sounds destroy the cells of the men's bodies. Then, when their dead hands release the controls, the automatic switches blow up the ship."

"God! We stop one menace--and it is like the Hydra. For every head we lop off, two spring up."

"Ah--but they are lesser heads. Look, what is the fundamental difference between sound and light?"

"One is a vibration of matter and the--ah--eliminate the material contact!"

"Exactly! All we need to do is to let the ships operate airless, the men in space suits. Then the air cannot carry the sounds to them. And by putting special damping materials in their suits, we can stop the vibrations that would reach them through their feet and hands. Another six-man ship must go out--but this ship will come back!"

And with the order for another experimental ship, went the orders for commercial supplies of this new apparatus. Every IP ship must be equipped to resist it.

Buck Kendall sailed on the six-man scout that went out this time. Again they swooped once at Phobos, again Miran scout-ships crumbled under the attack of the vicious UV beams. The Mirans were not waiting contemptuously this time. In an instant the great interstellar ship rose from its berth, its weapons working angrily. The crumbler ray snapped out at the T-253.

Kendall stared into the periscope visor intently. Clumsily his padded hands worked at the specially adapted controls. The soft hiss of the oxygen release into his suit disturbed him slightly. The radio-phones in his helmet carried all the conversations in the ship to him with equal clarity. He watched as the great ship angled angrily up--

His vision was momentarily obscured by a violet glow that built up and reached out gently from every point of metal in the ship. The instant Kendall saw that, the T-253 was fleeing under his hands. The test had been made. Now all he desired was safety again. The ion-rockets flared recklessly as, crushed under an acceleration of four Earth-gravities, he sank heavily into his seat. Grimly the Miran ship was pursuing them, easily keeping up with the fleeing midget. The crumbler became more intense, the violet glow more vivid.

The UV beam was reaching out directly behind now. The--

With a cry of agony, Kendall ripped the radio-phone connection out of his suit. A soft hiss of leaking air warned him of too great violence only minutes later. For his ears had been deafened by the sudden shriek of a tremendous signal from outside!

Instantly Kendall knew what that meant. And he could not communicate with his men! There was no metal in
these special suits, even the oxygen tanks were made of synthetic plastics of tremendous strength. No scrap of vibrating metal was permissible. The padded gloves and boots protected him—but there was a new and different type of crackle and haze from the metal points now. It was almost invisible in the practically airless ship, but Kendall saw it.

Presently he felt it, as he desperately increased his acceleration. Slow creeping heat was attacking him. The heat was increasing rapidly now. Desperately he was working at the crumbler-protection controls—but immediately set them back as they were. He had to have the crumbler protection as well—!

* * * * *

Grimly the great Miran ship hung right beside them. Angrily the two four-foot UV beams flashed back—seeking some weak spot. There were none. At her absolute maximum of acceleration the little ship plunged on. Gamma and atomic bombs were washing her in flame. The heavy blocks of paraffin between her walls were long since melted, retained only by the presence of the metal walls. Smoke was beginning to filter out now, and Kendall recognized a new, and deadlier menace! Heat—quantities of heat were being poured into the little ship, and the neutron guns were doing their best to add to it. The paraffin was confined in there—and like any substance, it could be volatilized, and as a vapor, develop pressure—explosive pressure!

The Miran seemed satisfied in his tactics so far—and changed them. Forty-seven million miles from Earth, the Miran simply accelerated a bit more, and crowded the Solarian ship a bit. White-faced, Buck Kendall was forced to turn a bit aside. The Miran turned also. Kendall turned a bit more—

Flashing across his range of vision at an incredible speed, a tiny thing, no more than twenty feet long and five in diameter, a scout-ship appeared. Its tiny nose ultra-violet beam was blasting a solid cylinder of violet incandescence a foot across in the hull of the Miran—and, to the Miran, angling swiftly across his range of vision. Its magnetic field clashed for a thousandth of a second with the T-253, instantly meeting, and absorbing the fringing edges. Then—swept through the Miran's magnetic shield as easily. The delicate instruments of the scout instantaneously adjusted its own magnetic field as much as possible. There was resistance, enormous resistance—the ship crumpled in on itself, the tail vanished in dust as a sweeping crumbler beam caught it at last—and the remaining portion of the ship plowed into the nose of the Miran.

The Miran's force-control-room was wrecked. For perhaps a minute and a half, the ship was without control, then the control was re-established—and in vain the telescopes and instruments searched for the T-253. Lightless, her rockets out now, her fields damped down to extinction, the T-253 was lost in the pulsing, gyrating fields of half a dozen scout-ships.

Kendall looked grimly at the crushed spot on the nose of the Miran. His ship was drifting slowly away from the greater ship. Presently, however, the Miran put on speed in the direction of Earth, and the T-253 fell far behind. The Miran was not seriously injured. But that scout pilot, in sacrificing life, had thrown dust in their eyes for just those few moments Kendall had needed to lose a lightless ship in lightless space—lightless—for the Mirans at any rate. The IP ships had been covered with a black paint, and in no time at all, Kendall had gotten his ship into a position where the energy radiations of the sun made him undetectable from the Miran's position, since the radiation of his own ship, even in the heat range, was mingled with the direct radiation of the sun. The sun was in the Miran's "eyes," both actual and instrumental.

An hour later the Miran returned, passed the still-lightless ship at a distance of five million miles, and settled to Phobos for the slight repairs needed.

Twelve hours later, the T-253 settled to Luna, for the many rearrangements she would need.

"I rather knew it was coming," Kendall admitted sadly, "but danged if I didn't forget all about it. And—cost the life of one of the finest men in the system. Johnson's family get a permanent pension just twice his salary, McLaurin. In the meantime—"

"What was it? Pure heat, but how?"

"Pure radio. Nothing but short-wave radio directed at us. They probably had the apparatus, knew how to make it, but that's not a good type of heat ray, because a radio tube is generally less than eighty percent efficient, which is a whale of a loss when you're working in a battle, and a whale of an inconvenience. We were heated only four times as much as the Miran. He had to pump that heat into a heat-reservoir—a water tank probably—to protect himself. Highly inefficient and ineffective against a large ship. Also, he had to hold his beam on us nearly ten minutes before it would have become unbearable. He was again, trying to kill the men, and not the ship. The men are the weakest point, obviously."

"Can you overcome that?"

"Obviously, no. The thing works on pure energy. I'd have to match his energy to neutralize it. You knew it's an old proposition, that if you could take a beam of pure, monochromatic light and divide it exactly in half, and then recombine it in perfect interference, you'd have annihilation of energy. Cancellation to extinction. The trouble is,
you never do get that. You can't get monochromatic light, because light can't be monochromatic. That's due to the Heisenberg Uncertainty--my pet bug-bear. The atom that radiates the light, must be moving. If it isn't, the emission of the light itself gives it a kick that moves it. Now, no matter what the quantum might have been, it loses energy in kicking the atom. That changes the situation instantly, and incidentally the 'color' of the light. Then, since all the radiating atoms won't be moving alike, etc., the mass of light can't be monochromatic. Therefore perfect interference is impossible.

"The way that relates to the problem in hand, is that we can't possibly destroy his energy. We can, as we do in the crumbler stunt, change it. He can't, I suspect, put too much power behind his crumbler, or he'd have crumbling going on at home. We get a slight heating from it, anyway. Into the bargain, his radio was after us, and his neutrons naturally carried energy. Now, no matter what we do, we've got that to handle. When we fight his crumbler, we actually add heat-energy to it, ourselves, and make the heating effect just twice as bad. If we try to heterodyne his radio--presto--it has twice the heat energy anyway, though we might reduce it to a frequency that penetrated the ship instead of all staying in it. But by the proposition, we have to use as much energy, and in fact, remember the 80% rule. We've got to take it and like it."

"But," objected McLaurin, "we don't like it."

"Then build ships as big as his, and he'll quit trying to roast you. Particularly if the inner walls are synthetic plastics. Did you know I used them in the 'S Doradus' and 'Cepheid'?"

"Yes. Were you thinking of that?"

"No--just luck--and the fact that they're light, strong as steel almost, and can be manufactured in forms much more quickly. Only the outer hull is tungsten-beryllium. The advantage in this will be that nearly all the energy will be absorbed outside, and we'll radiate pretty fast, particularly as that tungsten-beryllium has a high radiation-factor in the long heat range."

"What does that mean?"

"Well, ordinary polished silver is a mighty poor radiator. Homely example: Try waiting for your coffee to cool if it's in a polished silver pot. Then try it in a tungsten-beryllium pot. No matter how you polish that tungsten-beryllium, the stuff WILL radiate heat. That's why an IP ship is always so blamed cold. You know the passenger ships use polished aluminum outer walls. The big help is, that the tungsten-beryllium will throw off the energy pretty fast, and in a big ship, with a whale of a lot of matter to heat, the Strangers will simply give up the idea."

"Yes, but only two ships in the system compare with them in size."

"Sorry--but I didn't build the IP fleet, and there are lots of tungsten and beryllium on Earth. Enough anyway."

"Will they use that beam on the fort? And can't we use the thing on them?"

"They won't and we won't--though we could. A bank of those new million watt tubes--perhaps a hundred of them--and we'd have a pretty effective heater--but an awful waste of power. I've got something better."

"New?"

"Somewhat. I've found out how to make the mirror field in a plate of metal, instead of a block. Come on to the lab, and I'll show you."

"What's the advantage? Oh--weight saved, and silver metal saved."

"A lot more than that, Mac. Watch."

* * * * *

At the laboratory, the new apparatus looked immensely lighter and simpler than the old. The atostor, the ionizer, and the twin ion-projectors were as before, great, rigid, metal structures that would maintain the meeting point of the ions with inflexible exactitude under any acceleration strains. But now, instead of the heavy silver block in which a mirror was figured, the mirror consisted of a polished silver plate, parabolic to be sure, but little more than a half-inch in thickness. It was mounted in a framework of complex, stout metal braces.

Kendall started the ion-flame at low intensity, so the UV beam was little more than a spotlight.

"You missed the point, Mac. Now--watch that tungsten-beryllium plate. I'll hold the power steady. It's an eighteen-inch beam--and now the energy is just sufficient to heat that tungsten plate to bright red. But--"

Kendall turned over a small rheostat control--and abruptly the eighteen-inch diameter spot on the tungsten-beryllium plate began contracting; it contracted till it was a blazing, sparkling spot of molten incandescence less than an inch across!

"That's the advantage of focus. At this distance of a few hundred feet with a small beam I can do that. With a twenty-foot beam, I can get a two-foot spot at a distance of nearly ten miles! That means that the receiving end will have the pleasure of handling one hundred times the energy concentration. That would punch a hole through most anything. All you have to do is focus it. The trouble being, if it's out of focus the advantage is more than lost. So if there's any question about getting the focus, we'll get along without it."

"A real help, if you do. That would punch a hole before the Stranger ship could turn away as they do now."
Kendall nodded. "That's what I was after. It is mainly for the forts, though. We'll have to signal the dope to the Mars Center and Deenmor stations. They can fix it up, themselves. In the meantime--all we can do is hold on and hunt, and let's hope better than the Strangers do."

X

Sadly the convalescent Gresth Gkæ listened to the reports of his lieutenants. More and more disgraced he felt as he realized how badly he had blundered in reporting the people of this system unable to cope with the attackers' weapons. Gresth Gkæ looked up at his old friend and physician, Merth Skahl. He shook his head slowly. "I'm afraid, Merth Skahl. I am afraid. We have, perhaps, made a mistake. The better and the stronger alone should rule. Aye, but is the stronger always the better? I am afraid we have mistaken the Truth in assuming this. If we have--then may Jarth, Lord of Truth and Wisdom punish us. Mighty Jarth, if I have mistaken in following my judgments, it is not from disobedience, it is lack of Thy knowledge. The strongest--they are not always the better, are they?"

Merth Skahl bent sharply over his friend. "Quiet thyself, Gresth Gkæ. You know, and I know, you have done only your best, and surely Jarth himself can ask no better of any one. You must rest, for only by rest can those terrible burns be healed. All your stheen over half the body-area was burned off. You have been delirious for many days."

"But Merth Skahl, think--have we disobeyed Jarth's will? It is, we know, his will that only the best and the strongest shall rule--but are the best always the strongest? An imbecile adult could destroy the life of a genius-grade child. The strongest wins, but not the best. Such would not be the will of Jarth. If we be the stronger, and the best, then it is right and just that these strange creatures should be destroyed that we may have a stable world of stable light and heat. But look and see, with what terrible swiftness these strange creatures have learned! May it not be they are the better race--that it is we who are the weaker and the poorer? Can it be that Jarth has brought us together that these people might learn--and destroy us? If they be the stronger, and the better--then may Jarth's will be done. But we must test our strength to the utmost. I must rise, and go to my laboratory soon. They have set it up?"

"Aye, they have, Gresth Gkæ. But remember, the weak and the sick make faults the strong and the well do not. Better that you rest yourself. There is little you can do while your body seeks to recover from these terrible burns."

"You are wrong, my friend, wrong. Don't you see that my mind is clear--that it is the mind which must fight in these battles, for surely the man is weak against such things as this infra-X-radiation? Why, I am better able to fight now than are you, for I am a trained fighter of the mind, while you are a trained healer of the body. These strange beings with their stiff arms and legs, their tender skins, and--and their swift minds have fought us all too well. If we must test, let it be a test. I have heard how they so quickly solved the riddle of the crumbling field. That took us longer, and we designed it. The Counsel of Worlds put me in command, let me up, Skahl, I must work."

Concerned, the physician looked down at him. Finally he spoke again. "No, I will not permit you to leave the hospital-ship. You must stay here, but if, as you have said, the mind is what must fight, then surely you can fight well from here, for your mind is here."

"No, I cannot, and you well know it. I may shorten my life, but what matter. 'Death is the end toward which the chemical reaction, Life, tends,' " quoted the scientist. "You know I have left my children--my immortality is assured through them. I can afford to die in peace, if it assures their welfare. Time is precious, and while my mind might work from here, it must have data on which to work. For that, I must go to the laboratories. Help me, Merth Skahl."

Reluctantly the physician granted the request, but begged of Gresth Gkæ a promise of at least six hours rest in every fifteen, and a good sleep of at least twenty-seven hours every "night." Gresth Gkæ agreed, and from a wheelchair, conducted his work, began a new line of experimentation he hoped would yield them the weapon they needed. Under him, the staff of scientists worked, aiding and advising and suggesting. The apparatus was built, tested, and found wanting. Time and again as the days passed, they watched Gresth Gkæ, gaining strength very, very slowly, taken away despondent at the end of his forty hours of work.

A dozen expeditions were sent to Jupiter's poles to watch and measure and study the tremendous auroral displays there, where Jupiter's vast magnetic field sucked in countless quintillions of the flying electrons from the sun, and brought them circling in, in a vast, magnificent display of auroral ionization.

** Expeditions went to the great Southern Plateau, the Plateau of Storms, where the titanic air currents resulted in an everlasting display of terrific lightning, great burning balls of electric force floating dangerous and deadly across the frozen, ultra-cold plain. And the expeditions brought back data. Yet still Gresth Gkæ could not sleep, his thoughts intruding constantly. Hours Merth Skahl spent with him, calming him to sleep.

"But what is this constant search? It is little enough I know of science, but why do you send our men to these spots of wonderfully beautiful, but useless natural forces. Can we somehow, do you think, turn them against the people of these worlds?"
them! They were taking away about an equal amount of energy as each blew up. Than had at first been thought. Further, which they had not carefully considered at first, they were taking energy with into the magnetic atmosphere. Three hours later Mars Center reported that they contained considerably more energy concentrated magnetic fields of energy that would be rather dangerous—if it weren't that they couldn't even stand the bombardment had been witnessed from Earth and Luna. An hour later they gave a report that they were exploded. Five seconds later a second exploded. And a third. Darted with tremendously accelerating speed for the great magnetic field of the fort. With a vast blast of light, it the thin air of Mars. It floated down, it would miss the fort it seemed—so far to one side—Abruptly it turned, and concentrated magnetic energy, undetectable in space. Seven seconds passed before the first became dimly visible in theirs burn holes in our ships, and—in our men.

"But look you, I can drop many atomic bombs from a distance where their beams are ineffective. Suppose I do make a magnetic ball of energy, a magnetic bomb. Then--I can drop it from a distance! We have learned that the power supply of these forts is very great—but not endless, as is ours now, thanks to the vast supplies of power metal on this heavy planet. Then all we need do is stay at a distance where they cannot reach us—and drop magnetic bombs. Ah, they will be stopped, and their energy absorbed. But we can keep it up, day after day, and slowly drain out their power. Then--then our atomic bombs can destroy those forts, and we can move on!" But suddenly the animation and strength left his voice. He turned a sad, downcast face to his friend. "But Merth Skahl, we can't do it," he complained.

"Ah--now I can see why you so want to continue this wearing and worrying work. You need time, Gresth Gkae, only time for success. Tomorrow it may be that you will see the first hint that will lead you to success."

"Ah—I only hope it, Merth Skahl, I only hope it."

But it was the next day that they saw the first glimpse of the secret, and saw the path that might lead to hope and success. In a week they were sending electric bombs across the laboratory. And in three days more, a magnetic bomb streaked dully across the laboratory to a magnetic shield they had set up, and buried itself in it, to explode in brilliant light and heat.

From that day Gresth Gkae began to mend. In the three weeks that were needed to build the apparatus into ships, he regained strength so that when the first flight of five interstellar ships rose from Jupiter, he was on the flagship. To Phobos they went first, to the little inner satellite of Mars, scarcely eight miles in diameter, a tiny bit of broken metal and rock, utterly airless, but scarcely more than 3700 miles from the surface of Mars below. The Mars Center and Deenmor forts were wasting no power raying a ship at that distance. They could, of course, have damaged it, but not severely enough to make up for the loss of their strictly limited power. The photocells had been working overtime, every minute of available light had been used, and still scarcely 2100 tons of charged mercury remained in the tanks of Mars Center and 1950 in the tanks at Deenmor.

The flight of five ships settled comfortably upon Phobos, while the three relieved of duty started back to Jupiter. Immediately work was begun on the attack. The ships were first landed on the near side, while the apparatus of the projectors was unloaded, then the great ships moved around to the far side. Phobos of course rotated with one face fixed irrevocably toward Mars itself, the other always to the cold of space. Great power leads trailed beneath the ships, and to the dark side. Then there were huge water lines for cooling. On this almost weightless world, where the great ships weighing hundreds of thousands of tons on a planet, weighed so little they were frequently moved about by a single man, the laying of five miles of water conduit was no impossibility.

Then they were ready. Mars Center came first. Automatic devices kept the aim exact, as the first of the magnetic bombs started down. At five-second intervals they were projected outward, invisible globes of concentrated magnetic energy, undetectable in space. Seven seconds passed before the first became dimly visible in the thin air of Mars. It floated down, it would miss the fort it seemed—so far to one side—Abruptly it turned, and darted with tremendously accelerating speed for the great magnetic field of the fort. With a vast blast of light, it exploded. Five seconds later a second exploded. And a third.

Mars Center signaled scoffingly that the bombs were all being stopped dead in the magnetic atmosphere, after the bombardment had been witnessed from Earth and Luna. An hour later they gave a report that they were concentrated magnetic fields of energy that would be rather dangerous—if it weren't that they couldn't even stand into the magnetic atmosphere. Three hours later Mars Center reported that they contained considerably more energy than had at first been thought. Further, which they had not carefully considered at first, they were taking energy with them! They were taking away about an equal amount of energy as each blew up.

It was only a half-hour after that the men at Mars Center realized perfectly what it meant. Their power was
being drained just a little bit better than twice as fast as they generated during the day--and since Phobos spun so swiftly across the sky.

Deenmor got the attack just about the time Mars Center was released. Deenmor immediately began seeking for the source of it. Somewhere on Phobos--but where?

The Mirans were experts at camouflage. Deenmor Station, realizing the menace, immediately rayed the "projector." They tore up a great deal of harmless rock with their huge UV rays. But the bomb device continued to throw one bomb each five seconds.

When Deenmor operated from Phobos' position, Mars Center was exposed to the deadly, constant drain. A day or two later, the bombs were coming one each second and a half, for more ships had joined in the work on Phobos.

Gresth Gkae saw the work was going nicely. He knew that now it was only a question of time before those magnetic shields would fail--and then the whole fort would be powerless. Maybe--it might be a good idea, when the forts were powerless to investigate instead of blowing them up. There might be many interesting and worthwhile pieces of apparatus--particularly the UV beam's apparatus.

XI

Buck Kendall entered the Communications room rather furtively. He hated the place. Cole was there, and McLaurin. Mac was looking tired and drawn, Cole not so tired, but equally drawn. The signals were coming through fairly well, because most of the disturbance was rising where the signals rose, and all the disturbance, practically, was magnetic rather than electric.

"Deenmor is sending, Buck," McLaurin said as he entered. "They're down to the last fifty-five tons. They'll have more time now--a rest while Phobos sinks. Mars Center has another 250 tons, but--it's just a question of time. Have you any hope to offer?"

"No," said Kendall in a strained voice. "But, Mac, I don't think men like those are afraid to die. It's dying uselessly they fear. Tell 'em--tell 'em they've defended not alone Mars, but all the system, in holding up the Strangers on Mars. We here on Luna have been safer because of them. And tell--Mac, tell them that in the meantime, while they defended us, and gave us time to work, we have begun to see the trail that will lead to victory."

"You have!" gasped McLaurin.

"No--but they will never know!" Kendall left hastily. He went and stood moodily looking at the calculator machines--the calculator machines that refused to give the answers he sought. No matter how he might modify that original idea of his, no matter what different line of attack he might try in solving the problems of Space and Matter, while he used the system he knew was right--the answer came down to that deadly, hope-blasting expression that meant only "uncertain."

Even Buck was beginning to feel uncertain under that constant crushing of hope. Uncertainty--uncertainty was eating into him, and destroying--

From the Communications room came the hum and drive of the great sender flashing its message across seventy-two millions of miles of nothing. "B-u-c-k K-e-n-d-a-l-l s-a-y-s h-e h-a-s l-e-a-r-n-e-d s-o-m-e t-h-i-n-g t-h-a-t w-i-l-l l-e-a-d t-o v-i-c-t-o-r-y w-h-i-l-e y-o-u h-e-l-d b-a-c-k t-h-e--"

Kendall switched on a noisy, humming fan viciously. The too-intelligible signals were drowned in its sound.

"And--tell them to--destroy the apparatus before the last of the power is gone," McLaurin ordered softly.

The men in Deenmor station did slightly better than that. Gradually they cut down their magnetic shield, and some of the magnetic bombs tore and twisted viciously at the heavy metal walls. The thin atmosphere of Mars leaked in. Grimly the men waited. Atomic bombs--or ships to investigate? It did not matter much to them personally--

Gresth Gkae smiled with his old vigor as he ordered one of the great interstellar ships to land beside the powerless station, approaching from such an angle that the still-active Mars Center station could not attack. One of the fleet of Phobos rose, and circled about the planet, and settled gracefully beside the station. For half an hour it lay there quietly, waiting and watching. Then a crew of two dozen Mirans started across the dry, crumbly powder of Mars' sands, toward the fort. Simultaneously almost, three things happened. A three-foot UV beam wiped out the advancing party. A pair of fifteen-foot beams cut a great gaping hole in the wall of the interstellar ship, as it darted up, like a startled quail, its weapons roaring defiance, only to fall back, severely wounded.

And the radio messages pounded out to Earth the first description of the Miran people. Methodically the men in Deenmor station used all but one ton of their power to completely and forever wreck and destroy the interstellar cripple that floundered for a few moments on the sands a bare mile away. Presently, before Deenmor was through with it, the atomic bombs stopped coming, and the atomic shells. The magnetic shield that had been re-established for the few minutes of this last, dying sting, fell.

Deenmor station vanished in a sudden, colossal tongue of blue-green light as the ton of atomically distorted
mercury was exploded by a projector beam turned on the tank.

* * * * *

It was long gone, when the first atomic bombs and magnetic bombs dropped from Phobos reached the spot, and only hot rock and broken metal remained.

Mars Center failed in fact the next time Phobos rode high over it. The apparatus here had been carefully destroyed by technicians with a view of making it indecipherable, but the Mirans made it even more certain, for no ship settled here to investigate, but a stream of atomic bombs that lasted for over an hour, and churned the rock to dust, and the dust to molten lava, in which pools of fused tungsten-beryllium alloy bubbled slowly and sank.

"Ah, Jarth--they are a brave race, whatever we may say of their queer shape," sighed Gresth Gkae as the last of Mars Center sank in bubbling lava. "They stung as they died." For some minutes he was silent.

"We must move on," he said at length. "I have been thinking, and it seems best that a few ships land here, and establish a fort, while some twenty move on to the satellite of the third planet and destroy the fort there. We cannot operate against the planet while that hangs above us."

Seven ships settled to Mars, while the fleet came up from Jupiter to join with Gresth Gkae's flight of ships on its way to Luna.

An automatically controlled ship was sent ahead, and began the bombardment. It approached slowly, and was not destroyed by the UV beams till it had come to within 40,000 miles of the fort. At 60,000 Gresth Gkae stationed his fleet--and returned to 150,000 immediately as the titanic UV beams of the Lunar Fort stretched out to their maximum range. The focus made a difference. One ship started limping back to Jupiter, in tow of a second, while the rest began the slow, methodical work of wearing down the defenses of the Lunar Fort.

Kendall looked out at the magnificent display of clashing, warring energies, the great, whirling spheres and discs of opalescent flame, and turned away sadly. "The men at Deenmor must have watched that for days. And at Mars Center."

"How long can we hold out?" asked McLaurin.

"Three weeks or so, at the present rate. That's a long time, really. And we can escape if we want to. The UV beams here have a greater range than any weapon the Strangers have, and with Earth so near--oh, we could escape. Little good."

"What are you going to do?"

"I," said Buck Kendall, suddenly savage, "am going to consign all the math machines in the universe to eternal damnation--and go ahead and build a machine anyway. I know that thing ought to be right. The math's wrong."

"There is no other thing to try?"

"A billion others. I don't know how many others. We ought to get atomic energy somehow. But that thing infuriates me. A hundred things that math has predicted, that I have checked by experiment, simple little things. But--when I carry it through to the point where I can get something useful--it wriggles off into--uncertainty."

Kendall stalked off to the laboratory. Devin was there working over the calculus machines, and Kendall called him angrily. Then more apologetic, he explained it was anger at himself. "Devin, I'm going to make that thing, if it blows up and kills me. I'm going to make that thing if this whole fort blows up and kills me. That math has blown up in my face for four solid months, and half killed me, so I'm going to kill it. Come on, we'll make that damned junk."

Angry, furiously, Kendall drove his helpers to the task. He had worked out the apparatus in plan a dozen times, and now he had the plans turned into patterns, the patterns into metal.

Saucily, the "S Doradus" made the trip to and from Earth with patterns, and with metal, with supplies and with apparatus. But she had to dodge and fight every inch of the way as the Miran ships swooped down angrily at her. A fighting craft could get through when the Miran fleet was withdrawn to some distance, but the Mirans were careful that no heavy-loaded freighter bearing power supply should get through.

And Gresth Gkae waited off Luna in his great ship, and watched the steady streams of magnetic bombs exploding on the magnetic shield of the Lunar Fort. Presently more ships came up, and added their power to the attack, for here, the photo-cell banks could gather tremendous energy, and Gresth Gkae knew he would need to overcome this, and drain the accumulated power.

Gresth Gkae felt certain if he could once crack this nut, break down Earth, he would have the system. This was the home planet. If this fell, then the two others would follow easily, despite the fact that the few forts on the innermost planet, Mercury, could gather energy from the sun at a rate greater than their ships could generate.

It took Kendall two weeks and three days to set up his preliminary apparatus. They had power for perhaps four days more, thanks to the fact that the long Lunar day had begun shortly after Gresth Gkae's impatient attack had started. Also, the "S Doradus" had brought in several hundred tons of charged mercury on each trip, though this was no great quantity individually, it had mounted up in the ten trips she had made. The "Cepheid," her sister ship, had gone along on seven of the trips, and added to the total.
But at length the apparatus was set up. It was peculiar looking, and it employed a great deal of power, nearly as much as a UV beam in fact. McLaurin looked at it sceptically toward the last, and asked Buck: "What do you expect it to do?"

"I am," said Kendall sourly, "uncertain. The result will be uncertainty itself."

Which, considering things, was a surprisingly accurate statement. Kendall gave the exact answer. He meant to give an ironic comment. For the mathematics had been perfectly correct, only Buck Kendall misinterpreted the answer.

"I've followed the math with mechanism all the way through," he explained, "and I'm putting power into it. That's all I know. Somewhere, by the laws of cause and effect, this power must show itself again--despite what the damn math says."

And in that, of course, Kendall was wrong. Because the laws of cause and effect didn't hold in what he was doing now.

"Do you want to watch?" he asked at length. "I'm all set to try it."

"I suppose I may as well." McLaurin smiled. "In our close-knit little community the fate of one is of interest to all. If it's going to blow up, I might as well be here, and if it isn't, I want to be."

Kendall smiled appreciatively and replied: "Let it be on thy own head. Here she goes."

He walked over to the power board, and took command. Devin, and a squad of other scientists were seated about the room with every conceivable type and combination of apparatus. Kendall wanted to see what this was doing. "Tubes," he called. "Circuits A and D. Tie-ins." He stopped, the preliminary switches in. "Main circuit coming." With a jerk he threw over the last contact. A heavy relay thudded solidly. The hum of a straining atostor.

Then--

An electric motor, humming smoothly stopped with a jerk. "This," it remarked in a deep throaty voice, "is probably the last stand of humanity."

The galvanometer before which Devin was seated apparently agreed. In a rather high pitched voice it pointed out that: "If the Lunar Fort falls, the Earth--" It stopped abruptly, and an electroscope beside Douglass took up the thread in a high, shrill voice, rather slurred, "--will be directly attacked."

"This," resumed the motor in a hoarse voice, "will certainly mean the end of humanity." The motor gave up the discourse and hummed violently into action--in reverse!

"My God!" Kendall pulled the switch open with a sagging jaw and staring eyes.

The men in the room burst into sudden startled exclamations.

Kendall didn't give them time. His jaw snapped shut, and a blazing light of wondrous joy shone in his eyes. He instantly threw the switch in again. Again the humming atostor, the strain--

Slowly Devin lifted from his seat. With thrashing arms and startled, staring eyes, he drifted gently across the room. Abruptly he fell to the floor, unhurt by the light Lunar gravity.

"I advise," said the motor in its grumbling voice, "an immediate exodus." It stopped speaking, and practiced what it preached. It was a fifty-horse motor-generator, on a five-ton tungsten-beryllium base, but it rose abruptly, spun rapidly about an axis at right angles to the axis of its armature, and stopped as suddenly. In mid air it continued its interrupted lecture. "Mercury therefore is the destination I would advise. There power is sufficient for--all machines." Gently it inverted itself and settled to the middle of the floor. Kendall instantly cut the switch. The relay did not chunk open. It refused to obey. Settled in the middle of the floor now, torn loose from its power leads, the motor-generator began turning. It turned faster and faster. It was shrilling in a thin scream of terrific speed, a speed that should have torn its windings to fragments under the lash of centrifugal force. Contentedly it said throatily.

"Settled."

The galvanometer spoke again in its peculiar harsh voice. "Therefore, move." Abruptly, without apparent reason, the stubborn relay clicked open. The shrilly screaming motor stopped dead instantly, as though it had had no real momentum, or had been inertialess.

Startled, white-faced men looked at Kendall. Buck's eyes were shining with an unholy glee.

"Uncertainty!" he shouted. "Uncertainty--uncertainty--uncertainty, you fools! Don't you see it? All the math--it said uncertainty--man, man--we've got just that--uncertainty!"

"You're crazy," gasped McLaurin. "I'm crazy, everything's gone crazy."

Kendall roared with sudden, joyous laughter. "Absolutely. Everything goes crazy--the laws of nature break down! Heisenberg's principle showed that the law of cause and effect weren't absolute. We've made them absolutely uncertain!"

"But--but motors talking, instruments giving lectures--"

"Certainly--or rather uncertainly--anything, absolutely anything. The destruction of the laws of gravity, freedom from inertia--why, merely picking up a radio lecture is nothing!"
Suddenly, abruptly, a thousand questions poured in on him. Jubilantly he answered what he could, told what he thought—and then brought order. "The battle's still on, men—we've still got to find out how to use this, now we've got it. I have an idea—that there's a lot more. I know what I'll get this time. Now help me remake this apparatus so we don't broadcast the thing."

At once, ten times the former pace, work was done. On the radio, news was sent out that Kendall was on the right track after all. In two hours the apparatus had been vastly altered, it was in the final stage, and an entirely different sort of field set up. Again they watched as Buck applied the power.

The atostor hummed—but no strange tricks of matter happened this time. The more concentrated, altered field was, as Buck was to find out later, "Uncertainty of the Second Degree." It was molecular uncertainty. In a field a foot and a half in diameter, Buck saw the thing created—and suddenly a brilliant green-blue flame shot up, and a great dark cloud of terrible, red-brown deadly vapor. Then an instant later, Kendall had opened the relay. Gasping, the men ran from the laboratory, shutting the deadly fumes in. "\(\text{N}_2\text{O}_4\)" gasped Morton, the chemist, as they reached safety. "It's exothermic--but it formed there!"

In that instant, Kendall grasped the meaning the choking fumes carried. "Molecular uncertainty!" he decided. "We're going back—we're getting there--"

He altered the apparatus again, added another atostor in series, reduced the size of his sphere of forces—of strange chaos of uncertainty. Within—little was certain. Without—the laws of nature applied as ever.

Again the apparatus was started, cautiously this time. Only a strange jumbled ionization appeared this time, then a slow, rising blue flame began to creep up, and burn hot and blue. Buck looked at it for a moment, then his face grew tense and thoughtful. "Devlin—give me a half-dollar." Blankly, Devin reached in his pocket, and handed over the metal disc. Cautiously Buck Kendall tossed it toward the sphere of force. Instantly there was a flash of flame, soundless and soft-colored. Then the silver disc was outlined in light, and swiftly, inevitably crumbling into dust so fine only a blue haze appeared. In less than two seconds, the metal was gone. Only the dense blue fog remained. Then this began to go, and the leaping blue flame grew taller, and stronger.

"We're on the track—I'm going to stop here, and calculate. Bring the data—"

Kendall shut off the machine, and went to the calculation room. Swiftly he selected already prepared graphs, graphs of the math he had worked on. Devin came soon, and others. They assembled the data and with tables and arithmetical machines turned it into graphs.

Then all these graphs were fed into the machine. There were curves, and sine-curves, abrupt breaking lines—but the answer that came when all were compounded was a perfect diagram of a flight of four steps, descending in unequal treads to zero.

Kendall looked at it for long minutes. "That," he said at length, "is what I expected. There are four degrees of uncertainty, we generated 'Uncertainty of the First Degree,' 'Mass Uncertainty,' when we started. That, as here shown, takes little energy concentration. Then we increased the energy concentration and got 'Uncertainty of the Second Degree,' 'Molecular Uncertainty.' Then I added more power, and reduced the field, and got 'Uncertainty of the Third Degree'—'Atomic Uncertainty.' There is 'Uncertainty of the Fourth Degree.' It is barely attainable with our atostors. It is—utter uncertainty.

"In the First Degree, the laws of mass action fail, the great broad-reaching laws. In the Second Degree, the laws of the molecules, a finer organization, break down, and anything can happen in chemistry. In the Third Degree, the laws of atomic physics break down slowly. The atom is tough. It is very compact, and we just barely attained the concentration needed with that apparatus. But—in the Third Degree, when the Atomic Laws break down into utter uncertainty, the atoms break, and only hydrogen can exist. That was the blue flame.

"But the Fourth Degree—there is no law whatsoever, nothing in all the Universe can exist. It means—the utter destruction and release of the energy of matter!" Kendall paused for a moment. "We have won, with this. We need only make up this apparatus—and maybe make it into a weapon. You know, in the Fourth Degree, nothing in all the Universe could resist, deflect, or control it, if launched freely, and self-maintaining. I think that might be done. You see, no law affects it, for it breaks down the law. Magnetism cannot attract or repel it because magnetic fields cannot exist; there is no law of magnetic force, where this field is.

"And you know, Devin, how I have analyzed and duplicated their magnetic ball-fields. This should be capable of formation into a ball-field.

"We need only make it up now. We will install it in the 'S Doradus' and the 'Cepheid' as a weapon. We need only install it as an energy source here. Let us start."

XII

Buck Kendall with a slow smile, looked out of the port in the thick metal wall. The magnetic shield of the Lunar Fort was washed constantly with the fires of exploding magnetic bombs. The smile spread broader. "My friends," he said softly, "you can pull from now till doomsday as far as I'm concerned, and you won't even disturb us
now." He looked back over his shoulder into the power room. A hunched bulk, beautifully designed and carefully finished, the apparatus that created 'Uncertainty of the Fourth Degree' was destroying matter, and creating by its destruction terrific electric fields. These fields were feeding the magnetic shield now. Under the present drain, the machine was not noticeably working. In fact, Kendall was a bit annoyed. He had tested out the energy generating properties of this machine, trying to find a limit. He had found there was no limit. The great copper conductors, charged with the same atomic force that was used in the mercury fuel, were perfect conductors, they had not heated. But the eleven thousand tons of discharged mercury metal had been completely charged in just a bit better than eleven minutes. The pumps wouldn't force it through the charging apparatus any faster than that.

Two weeks more had passed, while the "S Doradus" and the "Cepheid" were fitted out with the new apparatus Buck had designed. They were almost ready to start now.

McLaurin came down the corridor, and stopped near Kendall. He too smiled at the Miran's attempts. "They've got a long way to go, Buck."

"They're going a long way. Clear back home--and we'll be right along. I don't think they can outdistance us."

"I still don't see why you couldn't use one of those Uncertainty conditions--the First Degree perhaps, and annihilate our inertia."

"You can't control Uncertainty. By its essential character it's beyond control."

"What's that Fourth Degree machine of yours--the material energy--if it isn't controlled and utilized Uncertainty?"

"It's utter and utterly uncontrolled Uncertainty. The matter within that field breaks down to absolutely nothing. Within, no law whatsoever applies, but fortunately, outside the old laws of physics apply--and we can gather and use the energy which is released outside, though nothing can be done inside. Why, think, man, if I could control that Uncertainty, I could do anything at all, absolutely anything. It would be a world as unreasonable as a bad dream. Think how unreasonable those manifestations we first got were!"

"But can't you get any control at all?"

"Very little. Anyway, if I could get inertialess conditions at will, I'd be afraid of them. They'd make chemical reactions impossible in all probability--and life is chemical. Two atoms must come into more or less violent contact before a union takes place, and cannot if they have neither momentum nor inertia."

"Anyway--why worry? I can't do it, because I can't control this thing. And we have the extra-space drive."

"How does that darned thing work? Can't you drop the math and tell me about it?"

Kendall smiled. "Not too readily. Remember first, as to the driving system, that it works on the fabric of space. Space is, in the physical sense, a fabric woven of the threads of lines of force from every body in the universe, made up of fields and forces. It is elastic, and can transmit strains. But anything that can transmit strains, can be strained against. With the tremendous field intensities available by the material engines, I can get such fields as will 'dig their toes' into space and push."

"That's the drive itself. It is accelerationless, because it enfolds us, and acts equally on every atom of us. By maintaining in addition a slight artificial gravity--thanks also to the intensity of those material engine fields--we can be comfortable, while we accelerate at tremendous rates."

"That is, I think, at least allied to the Stranger's system. For the high-speed drive, I do in fact use the Uncertainty. I can control it in a certain sense by determining its powers, and the limits of uncertainty, whether First, Second, Third or Fourth Degree. It advances in jumps--but on a finer plotting of the curve, you can see that each jump represents a vast series of smaller jumps. That is, there is Class A, B, C, D, and so forth Uncertainty of the First Degree. Now Class A First Degree Uncertainty involves only the deepest, broadest principles. Only they break down. One of these is the law of the speed of light."

"I'm sure that isn't the system the Strangers use, but I'm also sure there's no limit to the speed we can get."

"Doesn't that wreck your drive system?"

"No, because gravity and the fields I use in driving are First Degree Uncertainties of the higher classes."

"But at any rate, it will work. And--I suspect you came to say you were ready to go."

"I did." McLaurin nodded.

"Still stick to your original plan?"

McLaurin nodded. "I think it's best. You follow those fellows back to their system in the 'S Doradus' and I'll stay here in the 'Cepheid' to protect the system. They may need some time to get out of the place here. And remember, we ought to be as decent as they were. They didn't bother the transports leaving Jupiter when they came in, only attacked the warships. We're bound to do the same, but we'll have to keep a watch on them, nonetheless. So you go on ahead."

They started down the corridor, and came presently to the huge locks where the "S Doradus" and the "Cepheid" were berthed. The super-ships lay cold and gray now, men swarming in and out with last-minute supplies. Air,
water, spare parts, bedding and personal equipment. Douglass, Cole, and most of the laboratory staff would go with Kendall when he followed the Strangers home. Devin and a few of the most advanced physicists would stay with McLaurin in case of need.

* * * * *

An hour later the "S Doradus" rose gently, soundlessly from her berth, and floated out of the open lock-door. The "Cepheid" followed her in five seconds. Still under the great screen of the fort, the lashing, coruscating colors of the magnetic bombs and the magnetic screen flashed and was iridescent. The "S Doradus" poked her great nose gently through the screen, and an instant later her titanicly powerful, material-engine effortlessly discharged a great magnetic bomb, sent with the combined power of five atomic-powered interstellar ships. The two ships separated now, the "Cepheid" under McLaurin flashing ahead with sudden, terrific acceleration toward Mars, whispering through space at a speed that made it undetectable, faster than light. The "S Doradus" journeyed out leisurely toward the fleet of forty-seven Miran ships.

Gresth Gkae saw the "S Doradus" and as he watched the steady progress, felt sudden fear at his heart. The ship seemed so certain--

At a distance of thirty thousand miles, Kendall stopped. Magnetic bombs were washing his screen continuously now, seeking to exhaust the ship as all the great ships beyond poured their energy against it. A slow smile spread over Kendall's mouth as he heard the gentle hum of the barely working material-engine. Carefully he aligned the nose UV beam of the "S Doradus" on the nearest of the Miran ships. Then he depressed a switch.

There was no ion-release before the force-mirror now. Just a jet of gas whirling into a half-inch field of "Uncertainty of the Fourth Degree." The matter vanished instantly in released energy so stupendous that the greatest previous UV beams had been harmless things by comparison. Material energy maintained the mirror forces. Material energy gave the power that was released. And only material energy could have stood up before it. Thirty thousand miles away, a Miran ship flamed instantaneously into inconceivable incandescence, vanishing almost in blue-violet light of terrific intensity. The ship reeled away, a half-molten wreck.

The beam spotted two more ships before it winked out. Then Kendall began sending bombs. He moved up to within 2000 miles that his aim might be accurate. They were bombs of "Uncertainty of the Third Degree," the Uncertainty of atomic law in bomb form. One hit the nose of the nearest ship, and a sphere five feet in diameter glowed mistily blue for a moment. Then very easily, the matter that formed the wall of the cruiser began to run and change, and presently there was only a hole, and an expanding cloud of gas. Three more flowed toward it--and the hole enlarged, and another hole appeared in a bulkhead behind.

Kendall made a change. For the first time there came the staccato bark of the material engine under strain, as it fashioned the terrific fields of "Uncertainty of the Ultimate Degree." Abruptly they leapt out, invisible till they entered a magnetic screen, then run over with opalescent light as the energy of the field was sucked into them and released.

It struck the nose of a ship--a field no larger than an apple--

A titanic gout of energy burst out that was soundless in space. The ship suddenly opened back, opened like the peel of a banana, till a little nub remained at the further end, and the metal flaps dropped back across and behind it dejectedly. A second ship was struck, and it was struck on one side, so that it was shattered like a spent firecracker.

Then the Miran fleet vanished in speed.

Kendall followed them. "I think," he said with a grin, "they tried to use their radio beam, but it spread too much to do anything at that distance. And they used their rotating magnetic field, which we couldn't feel. And their crumbler ray too, of course. I wonder--are they headed only for Jupiter? No--no, they've passed it!"

Faster than light, faster than energy could follow through space, or Uncertainty Bombs pursue, the Mirans were fleeing for home. They knew now that only in speed lay safety. Already they knew that a similar ship had appeared off Jupiter, and, after wiping out the Phobos and Mars stations with one bomb each, had cleared the Jovian Satellites with equal terrible efficiency.

In one of the fleeing ships was a broken, tired old man, and his staff. Gresth Gkae looked back at the blank, distorted space behind them, at the swiftly dwindling sun, and spoke. "I was at fault, my friends. Jarth has spoken. They are the stronger and the wiser race. Farth Skalt has shown you--they use space fields of intensity 100. That means the energy of the ultimate destruction. Jarth used us as his instrument of testing, only to drive and stimulate that race. I do not--nay. There is no doubt now, for look."

Plainly visible, rapidly overtaking them, the "S Doradus" appeared sharp, and luminous on the jet of distorted space.

"We cannot escape, my friends. Shall we return to Sthor or remain in space, lost?"

"Let us deflect our course--at least he may not know our destination." The interstellar ship turned very slightly in her course. Plainly they saw the "S Doradus" flash on, in a straight line, headed for distant, red-glowing Mira.
Gresth Gkae watched, and shrugged. Silently he put the ship back on its course, at its utmost speed. Parallel with
them, near to them, the "S Doradus" flashed on. Day after day, the two hurled through space faster than light.
Gradually Mira brightened, and at last became a disc.

Gresth Gkae slowed his ships, and Kendall, watching, slowed to match his speed. Five billion miles from Sthor,
they had reached normal space speeds. Viciously the Miran fleet attacked the lone ship from Earth. Their rays, their
bombs, their every weapon was flaming. Great interstellar ships flashed suddenly into speeds greater than that of
light, seeking to ram and destroy the smaller ship. The "S Doradus" flashed into equal or greater speed, and eluded
them.

Kendall had determined now, which was the leader's ship.
Gresth Gkae watched dully as his ships attempted to destroy the single, small ship. He sighed in resignation,
and turned to walk back to the chapel aboard the ship. One last prayer to Jarth--

Gresth Gkae stopped abruptly. The great ship was lurching strangely. Men shouted sudden, frightened cries.
The clanking and thud of relays sounded, the shrill of alarms. Then the alarms stopped, and suddenly the whole
great ship vibrated to an infinitely deep voice speaking in perfect Sthorian. The voice remarked solemnly, in great,
vibrant tones, that they would certainly receive news presently from the Expeditions. It went on for some seconds to
discuss the conditions as reported in the new system. Then it stopped abruptly. An electric motor just above Gresth
Gkae's head suddenly hummed into action without reason or power connection. Almost simultaneously he heard the
shouts of startled men as the great lock doors began to open into space of their own accord, bulkhead doors slipped
shut as the roar of escaping air echoed in the ship.

Then it was all over. Gresth Gkae ran to the control room. The Mirans there looked up at him with drawn faces.
"The instruments--Gresth Gkae--the instruments. The instruments read impossible things, the motors worked
without reason, the fields fluctuated--the atomic engines stopped and the magnetic shield broke down and gripped
part of the ship instead!" reported the bewildered pilot.

"I do not know--some strange weapon of--" began the old scientist. Something luminous and huge twisted
suddenly through space toward them, a bomb of "Uncertainty of the First Degree." It wrapped the ship silently--and
again strange things happened. Abruptly the ship started whirling violently, yet without centrifugal force. The
heavens wheeled crazily, and turned about three axes simultaneously. There was no gyroscopic effect to hold them!
Gradually the thing died out. Then a great field seemed to catch the ship, and hurl it away from its companions.
Abruptly the pilot applied all his power to pull free. In vain.

Gresth Gkae shook his head slowly, and raised the pilot's hands from the board. "Let them do as they will. I
think they mean us no real harm, Thart Kralt. They can, we know, destroy us in an instant. Perhaps he wants us to go
somewhere with him"--Gresth Gkae smiled sadly--"and anyway, we can do nothing."

For nearly a billion miles the great ship was hurled through space at tremendous normal-space velocity. Then
abruptly it was halted, without a sign of strain or hurt. The great twenty-foot UV beam on the nose of the "S
Doradus" broke into glowing gentle red light. It flashed twice. There was a pause. Then it flashed four times. A long
wait. Then three times, a pause and nine times. A wait. Four times, a pause, sixteen times. Then it stopped.
A slow smile of ineffable joy spread over Gresth Gkae's face. "Jarth Be Praised. He can destroy, but does not
wish to. Ah, Thart Kralt, turn your spotlight toward him, and flash it twenty-five times, for he is trying to start
communications with us. Jarth is wise beyond all understanding. They were the weaker race, and they are the
stronger. But also they are the better, for they could destroy, and they do not, but seek only to communicate."

EPILOGUE
The interstellar liner "Mirasol" settled gently to Sthor, having circled wide of Asthor, and from her hold a cargo
of the heavy Jovian elements was discharged, while a mixed stream of Solarians and Mirans came from her
passenger quarters.
A delegation of Mirans met the new Ambassador from Sol, Commander McLaurin, and conducted him joyfully
to the Central Government Group. Beside the great buildings, a battered, scarred interstellar ship lay, her rear section
a mass of great patches, rudely applied, and rudely made, mere cast metal plates.

Gresth Gkae welcomed Commander McLaurin to the Government Hall. "Your arrival today, Commander
McLaurin, was most fortunate," he said in the interstellar language that had been developed, "for but yesterday
Gresth Talak, my brother, arrived in his ship. Before we made that fortunate-unfortunate expedition against your
system, we waited for him, and he did not come, so we knew his ship had, like others, been lost.

"He arrived only yesterday, some seventy hours ago, and explained how it had come about. He too found a
solar system. But he was less fortunate than I, and while exploring this uninhabited system, far out still from the
central sun, where there should have been no masses of matter, one of those rare things, a giant stony meteor that
even a magnetic shield will not stop careened into the rear of his ship. Damaged badly, barely able to move, they
settled to a planet. The atmosphere was breathable, the temperature mild. But while they could navigate planetary
distances, they could not return, so for nearly four and a half of your years they remained there, working, working to
repair their ship.

"They have done it at last. And they have returned. And best of all, after a four-year stay there, they know all
they need know about that system of eleven planets. It is compact as yours, with an ultra-light sun such as yours, and
four of the planets are habitable. Together we can colonize that system! It is a system of stable heat and stable light.
And it is small, yet large enough. And with the devices such as your new energy has permitted, we need never fear
the stony meteors again." Gresth Gkae smiled happily. "Still better--it is inhabited only by the lowest forms of life. It
is too costly to both races when Jarth sees fit to stimulate them by throwing one against the other, despite the good
things that may come later."
I nearly stumbled over the kid in the dark before I saw him.

His wheelchair was parked as usual on the tired strip of carpet grass that separated his mother's trailer from the one Doc Shull and I lived in, but it wasn't exactly where I'd learned to expect it when I rolled in at night from the fishing boats. Usually it was nearer the west end of the strip where Joey could look across the crushed-shell square of the Twin Palms trailer court and the palmetto flats to the Tampa highway beyond. But this time it was pushed back into the shadows away from the court lights.

The boy wasn't watching the flats tonight, as he usually did. Instead he was lying back in his chair with his face turned to the sky, staring upward with such absorbed intensity that he didn't even know I was there until I spoke.

"Anything wrong, Joey?" I asked.

He said, "No, Roy," without taking his eyes off the sky.

For a minute I had the prickly feeling you get when you are watching a movie and find that you know just what is going to happen next. You're puzzled and a little spooked until you realize that the reason you can predict the action so exactly is because you've seen the same thing happen somewhere else a long time ago. I forgot the feeling when I remembered why the kid wasn't watching the palmetto flats. But I couldn't help wondering why he'd turned to watching the sky instead.

"What're you looking for up there, Joey?" I asked.

He didn't move and from the tone of his voice I got the impression that he only half heard me.

"I'm moving some stars," he said softly.

I gave it up and went on to my own trailer without asking any more fool questions. How can you talk to a kid like that?

Doc Shull wasn't in, but for once I didn't worry about him. I was trying to remember just what it was about my stumbling over Joey's wheelchair that had given me that screwy double-exposure feeling of familiarity. I got a can of beer out of the ice-box because I think better with something cold in my hand, and by the time I had finished the beer I had my answer.

The business I'd gone through with Joey outside was familiar because it had happened before, about six weeks back when Doc and I first parked our trailer at the Twin Palms court. I'd nearly stumbled over Joey that time too, but he wasn't moving stars then. He was just staring ahead of him, waiting.

He'd been sitting in his wheelchair at the west end of the carpet-grass strip, staring out over the palmetto flats toward the highway. He was practically holding his breath, as if he was waiting for somebody special to show up, so absorbed in his watching that he didn't know I was there until I spoke. He reminded me a little of a ventriloquist's dummy with his skinny, knob-kneed body, thin face and round, still eyes. Only there wasn't anything comical about him the way there is about a dummy. Maybe that's why I spoke, because he looked so deadly serious.

"Anything wrong, kid?" I asked.

He didn't jump or look up. His voice placed him as a cracker, either south Georgian or native Floridian.

"I'm waiting for Charlie to come home," he said, keeping his eyes on the highway.

Probably I'd have asked who Charlie was but just then the trailer door opened behind him and his mother took over.

I couldn't see her too well because the lights were off inside the trailer. But I could tell from the way she filled up the doorway that she was big. I could make out the white blur of a cigarette in her mouth, and when she struck a match to light it--on her thumb-nail, like a man--I saw that she was fairly young and not bad-looking in a tough, sullen sort of way. The wind was blowing in my direction and it told me she'd had a drink recently, gin, by the smell of it.

"This is none of your business, mister," she said. Her voice was Southern like the boy's but with all the softness ground out of it from living on the Florida coast where you hear a hundred different accents every day. "Let the boy alone."

She was right about it being none of my business. I went on into the trailer I shared with Doc Shull and left the two of them waiting for Charlie together.
Our trailer was dark inside, which meant first that Doc had probably gone out looking for a drink as soon as I left that morning to pick up a job, and second that he'd probably got too tight to find his way back. But I was wrong on at least one count, because when I switched on the light and dumped the packages I'd brought on the sink cabinet I saw Doc asleep in his bunk.

He'd had a drink, though. I could smell it on him when I shook him awake, and it smelt like gin.

Doc sat up and blinked against the light, a thin, elderly little man with bright blue eyes, a clipped brown mustache and scanty brown hair tousled and wild from sleep. He was stripped to his shorts against the heat, but at some time during the day he had bathed and shaved. He had even washed and ironed a shirt; it hung on a nail over his bunk with a crumpled pack of cigarettes in the pocket.

"Crawl out and cook supper, Rip," I said, holding him to his end of our working agreement. "I've made a day and I'm hungry."

Doc got up and stepped into his pants. He padded barefoot across the linoleum and poked at the packages on the sink cabinet.

"Snapper steak again," he complained. "Roy, I'm sick of fish!"

"You don't catch sirloins with a hand-line," I told him. And because I'd never been able to stay sore at him for long I added, "But we got beer. Where's the opener?"

"I'm sick of beer, too," Doc said. "I need a real drink."

I sniffed the air, making a business of it. "You've had one already. Where?"

He grinned at me then with the wise-to-himself-and-the-world grin that lit up his face like turning on a light inside and made him different from anybody else on earth.

"The largess of Providence," he said, "is bestowed impartially upon sot and Samaritan. I helped the little fellow next door to the bathroom this afternoon while his mother was away at work, and my selflessness had its just reward."

Sometimes it's hard to tell when Doc is kidding. He's an educated man--used to teach at some Northern college, he said once, and I never doubted it--and talks like one when he wants to. But Doc's no bum, though he's a semi-alcoholic and lets me support him like an invalid uncle, and he's keen enough to read my mind like a racing form.

"No, I didn't batter down the cupboard and help myself," he said. "The lady--her name is Mrs. Ethel Pond--gave me the drink. Why else do you suppose I'd launder a shirt?"

That was like Doc. He hadn't touched her bottle though his insides were probably snarled up like barbed wire for the want of it. He'd shaved and pressed a shirt instead so he'd look decent enough to rate a shot of gin she'd offer him as a reward. It wasn't such a doubtful gamble at that, because Doc has a way with him when he bothers to use it; maybe that's why he bums around with me after the commercial fishing and migratory crop work, because he's used that charm too often in the wrong places.

"Good enough," I said and punctured a can of beer apiece for us while Doc put the snapper steaks to cook.

He told me more about our neighbors while we killed the beer. The Ponds were permanent residents. The kid--his name was Joey and he was ten--was a polio case who hadn't walked for over a year, and his mother was a waitress at a roadside joint named the Sea Shell Diner. There wasn't any Mr. Pond. I guessed there never had been, which would explain why Ethel acted so tough and sullen.

We were halfway through supper when I remembered something the kid had said.

"Who's Charlie?" I asked.

Doc frowned at his plate. "The kid had a dog named Charlie, a big shaggy mutt with only one eye and no love for anybody but the boy. The dog isn't coming home. He was run down by a car on the highway while Joey was hospitalized with polio."

"Tough," I said, thinking of the kid sitting out there all day in his wheelchair, straining his eyes across the palmetto flats. "You mean he's been waiting a year?"

Doc nodded, seemed to lose interest in the Ponds, so I let the subject drop. We sat around after supper and polished off the rest of the beer. When we turned in around midnight I figured we wouldn't be staying long at the Twin Palms trailer court. It wasn't a very comfortable place.

I was wrong there. It wasn't comfortable, but we stayed.

I couldn't have said at first why we stuck, and if Doc could he didn't volunteer. Neither of us talked about it. We just went on living the way we were used to living, a few weeks here and a few there, all over the States.

We'd hit the Florida west coast too late for the citrus season, so I went in for the fishing instead. I worked the fishing boats all the way from Tampa down to Fort Myers, not signing on with any of the commercial companies because I like to move quick when I get restless. I picked the independent deep-water snapper runs mostly, because the percentage is good there if you've got a strong back and tough hands.

Snapper fishing isn't the sport it seems to the one-day tourists who flock along because the fee is cheap. You
fish from a wide-beamed old scow, usually, with hand-lines instead of regular tackle, and you use multiple hooks that go down to the bottom where the big red ones are. There's no real thrill to it, as the one-day anglers find out quickly. A snapper puts up no more fight than a catfish and the biggest job is to haul out his dead weight once you've got him surfaced.

Usually a pro like me sells his catch to the boat's owner or to some clumsy sport who wants his picture shot with a big one, and there's nearly always a jackpot--from a pool made up at the beginning of every run--for the man landing the biggest fish of the day. There's a knack to hooking the big ones, and when the jackpots were running good I only worked a day or so a week and spent the rest of the time lying around the trailer playing cribbage and drinking beer with Doc Shull.

Usually it was the life of Riley, but somehow it wasn't enough in this place. We'd get about half-oiled and work up a promising argument about what was wrong with the world. Then, just when we'd got life looking its screwball funniest with our arguments one or the other of us would look out the window and see Joey Pond in his wheelchair, waiting for a one-eyed dog named Charlie to come trotting home across the palmetto flats. He was always there, day or night, until his mother came home from work and rolled him inside.

It wasn't right or natural for a kid to wait like that for anything and it worried me. I even offered once to buy the kid another mutt but Ethel Pond told me quick to mind my own business. Doc explained that the kid didn't want another mutt because he had what Doc called a psychological block.

"Charlie was more than just a dog to him," Doc said. "He was a sort of symbol because he offered the kid two things that no one else in the world could--security and independence. With Charlie keeping him company he felt secure, and he was independent of the kids who could run and play because he had Charlie to play with. If he took another dog now he'd be giving up more than Charlie. He'd be giving up everything that Charlie had meant to him, then there wouldn't be any point in living."

I could see it when Doc put it that way. The dog had spent more time with Joey than Ethel had, and the kid felt as safe with him as he'd have been with a platoon of Marines. And Charlie, being a one-man dog, had depended on Joey for the affection he wouldn't take from anybody else. The dog needed Joey and Joey needed him. Together, they'd been a natural.

At first I thought it was funny that Joey never complained or cried when Charlie didn't come home, but Doc explained that it was all a part of this psychological block business. If Joey cried he'd be admitting that Charlie was lost. So he waited and watched, secure in his belief that Charlie would return.

The Ponds got used to Doc and me being around, but they never got what you'd call intimate. Joey would laugh at some of the droll things Doc said, but his eyes always went back to the palmetto flats and the highway, looking for Charlie. And he never let anything interfere with his routine.

That routine started every morning when old man Cloehessey, the postman, pedaled his bicycle out from Twin Palms to leave a handful of mail for the trailer-court tenants. Cloehessey would always make it a point to ride back by way of the Pond trailer and Joey would stop him and ask if he's seen anything of a one-eyed dog on his route that day.

Old Cloehessey would lean on his bike and take off his sun helmet and mop his bald scalp, scowling while he pretended to think.

Then he'd say, "Not today, Joey," or, "Thought so yesterday, but this fellow had two eyes on him. 'Twasn't Charlie."

Then he'd pedal away, shaking his head. Later on the handyman would come around to swap sanitary tanks under the trailers and Joey would ask him the same question. Once a month the power company sent out a man to read the electric meters and he was part of Joey's routine too.

It was hard on Ethel. Sometimes the kid would dream at night that Charlie had come home and was scratching at the trailer ramp to be let in, and he'd wake Ethel and beg her to go out and see. When that happened Doc and I could hear Ethel talking to him, low and steady, until all hours of the morning, and when he finally went back to sleep we'd hear her open the cupboard and take out the gin bottle.

But there came a night that was more than Ethel could take, a night that changed Joey's routine and a lot more with it. It left a mark you've seen yourself--everybody has that's got eyes to see--though you never knew what made it. Nobody ever knew that but Joey and Ethel Pond and Doc and me.

Doc and I were turning in around midnight that night when the kid sang out next door. We heard Ethel get up and go to him, and we got up too and opened a beer because we knew neither of us would sleep any more till she got Joey quiet again. But this night was different. Ethel hadn't talked to the kid long when he yelled, "Charlie! Charlie!" and after that we heard both of them bawling.

A little later Ethel came out into the moonlight and shut the trailer door behind her. She looked rumpned and beaten, her hair straggling damply on her shoulders and her eyes puffed and red from crying. The gin she'd had
hadn't helped any either.

She stood for a while without moving, then she looked up at the sky and said something I'm not likely to forget. "Why couldn't You give the kid a break?" she said, not railing or anything but loud enough for us to hear. "You, up there--what's another lousy one-eyed mutt to You?"

Doc and I looked at each other in the half-dark of our own trailer. "She's done it, Roy," Doc said.

I knew what he meant and wished I didn't. Ethel had finally told the kid that Charlie wasn't coming back, not ever.

That's why I was worried about Joey when I came home the next evening and found him watching the sky instead of the palmetto flats. It meant he'd given up waiting for Charlie. And the quiet way the kid spoke of moving the stars around worried me more, because it sounded outright crazy.

Not that you could blame him for going off his head. It was tough enough to be pinned to a wheelchair without being able to wiggle so much as a toe. But to lose his dog in the bargain....

I was on my third beer when Doc Shull rolled in with a big package under his arm. Doc was stone sober, which surprised me, and he was hot and tired from a shopping trip to Tampa, which surprised me more. It was when he ripped the paper off his package, though, that I thought he'd lost his mind.

"Books for Joey," Doc said. "Ethel and I agreed this morning that the boy needs another interest to occupy his time now, and since he can't go to school I'm going to teach him here."

He went on to explain that Ethel hadn't had the heart the night before, desperate as she was, to tell the kid the whole truth. She'd told him instead, quoting an imaginary customer at the Sea Shell Diner, that a tourist car with Michigan license plates had picked Charlie up on the highway and taken him away. It was a good enough story. Joey still didn't know that Charlie was dead, but his waiting was over because no dog could be expected to find his way home from Michigan.

"We've got to give the boy another interest," Doc said, putting away the books and puncturing another beer can. "Joey has a remarkable talent for concentration--most handicapped children have--that could be the end of him if it isn't diverted into safe channels."

I thought the kid had cracked up already and said so.

"Moving stars?" Doc said when I told him. "Good Lord, Roy--"

* * * * *

Ethel Pond knocked just then, interrupting him. She came in and had a beer with us and talked to Doc about his plan for educating Joey at home. But she couldn't tell us anything more about the kid's new fixation than we already knew. When she asked him why he stared up at the sky like that he'd say only that he wants something to remember Charlie by.

It was about nine o'clock, when Ethel went home to cook supper. Doc and I knocked off our cribbage game and went outside with our folding chairs to get some air. It was then that the first star moved.

It moved all of a sudden, the way any shooting star does, and shot across the sky in a curving, blue-white streak of fire. I didn't pay much attention, but Doc nearly choked on his beer.

"Roy," he said, "that was Sirius! It moved!"

I didn't see anything serious about it and said so. You can see a dozen or so stars zip across the sky on any clear night if you're in the mood to look up.

"Not serious, you fool," Doc said. "The star Sirius--the Dog Star, it's called--it moved a good sixty degrees, then stopped dead!"

I sat up and took notice then, partly because the star really had stopped instead of burning out the way a falling star seems to do, partly because anything that excites Doc Shull that much is something to think about.

We watched the star like two cats at a mouse-hole, but it didn't move again. After a while a smaller one did, though, and later in the night a whole procession of them streaked across the sky and fell into place around the first one, forming a pattern that didn't make any sense to us. They stopped moving around midnight and we went to bed, but neither of us got to sleep right away.

"Maybe we ought to look for another interest in life ourselves instead of drumming up one for Joey," Doc said. He meant it as a joke but it had a shaky sound; "Something besides getting beered up every night, for instance."

"You think we've got the d.t.'s from drinking beer?" I asked.

Doc laughed at that, sounding more like his old self. "No, Roy. No two people ever had instantaneous and identical hallucinations."

"Look," I said. "I know this sounds crazy but maybe Joey--"

Doc wasn't amused any more. "Don't be a fool, Roy. If those stars really moved you can be sure of two things--Joey had nothing to do with it, and the papers will explain everything tomorrow."

He was wrong on one count at least.
The papers next day were packed with scareheads three inches high but none of them explained anything. The radio commentators quoted every authority they could reach, and astronomers were going crazy everywhere. It just couldn't happen, they said.

Doc and I went over the news column by column that night and I learned more about the stars than I'd learned in a lifetime. Doc, as I've said before, is an educated man, and what he couldn't recall offhand about astronomy the newspapers quoted by chapter and verse. They ran interviews with astronomers at Harvard Observatory and Mount Wilson and Lick and Flagstaff and God knows where else, but nobody could explain why all of those stars would change position then stop.

It set me back on my heels to learn that Sirius was twice as big as the Sun and more than twice as heavy, that it was three times as hot and had a little dark companion that was more solid than lead but didn't give off enough light to be seen with the naked eye. This little companion--astronomers called it the "Pup" because Sirius was the Dog Star--hadn't moved, which puzzled the astronomers no end. I suggested to Doc, only half joking, that maybe the Pup had stayed put because it wasn't bright enough to suit Joey's taste, but Doc called me down sharp.

"Don't joke about Joey," he said sternly. "Getting back to Sirius--it's so far away that its light needs eight and a half years to reach us. That means it started moving when Joey was only eighteen months old. The speed of light is a universal constant, Roy, and astronomers say it can't be changed."

"They said the stars couldn't be tossed around like pool balls, too," I pointed out. "I'm not saying that Joey really moved those damn stars, Doc, but if he did he could have moved the light along with them, couldn't he?"

But Doc wouldn't argue the point. "I'm going out for air," he said.

I trailed along, but we didn't get farther than Joey's wheelchair.

There he sat, tense and absorbed, staring up at the night sky. Doc and I followed his gaze, the way you do automatically when somebody on the street ahead of you cranes his neck at something. We looked up just in time to see the stars start moving again.

The first one to go was a big white one that slanted across the sky like a Roman candle fireball--zip, like that--and stopped dead beside the group that had collected around Sirius.

Doc said, "There went Altair," and his voice sounded like he had just run a mile.

That was only the beginning. During the next hour forty or fifty more stars flashed across the sky and joined the group that had moved the night before. The pattern they made still didn't look like anything in particular.

I left Doc shaking his head at the sky and went over to give Joey, who had called it a night and was hand-rolling his wheelchair toward the Pond trailer, a boost up the entrance ramp. I pushed him inside where Doc couldn't hear, then I asked him how things were going.

"Slow, Roy," he said. "I've got 'most a hundred to go, yet."

"Then you're really moving those stars up there?"

He looked surprised. "Sure, it's not so hard once you know how."

The odds were even that he was pulling my leg, but I went ahead anyway and asked another question.

"I can't make head or tail of it, Joey," I said. "What're you making up there?"

He gave me a very small smile.

"You'll know when I'm through," he said.

I told Doc about that after we'd bunked in, but he said I should not encourage the kid in his crazy thinking. "Joey's heard everybody talking about those stars moving, the radio newscasters blared about it, so he's excited too. But he's got a lot more imagination than most people, because he's a cripple, and he could go off on a crazy tangent because he's upset about Charlie. The thing to do is give him a logical explanation instead of letting him think his fantasy is a fact."

Doc was taking all this so hard--because it was upsetting things he'd taken for granted as being facts all his life, like those astronomers who were going nuts in droves all over the world. I didn't realize how upset Doc really was, though, till he woke me up at about 4:00 A.M.

"I can't sleep for thinking about those stars," he said, sitting on the edge of my bunk. "Roy, I'm scared."

That from Doc was something I'd never expected to hear. It startled me wide enough awake to sit up in the dark and listen while he un loaded his worries.

"I'm afraid," Doc said, "because what is happening up there isn't right or natural. It just can't be, yet it is."

It was so quiet when he paused that I could hear the blood swirling in my ears. Finally Doc said, "Roy, the galaxy we live in is as delicately balanced as a fine watch. If that balance is upset too far our world will be affected drastically."

Ordinarily I wouldn't have argued with Doc on his own ground, but I could see he was painting a mental picture of the whole universe crashing together like a Fourth of July fireworks display and I was afraid to let him go on.

"The trouble with you educated people," I said, "is that you think your experts have got everything figured out,
that there’s nothing in the world their slide-rules can’t pin down. Well, I’m an illiterate mugg, but I know that your
astronomers can measure the stars till they’re blue in the face and they’ll never learn who put those stars there. So
how do they know that whoever put them there won’t move them again? I’ve always heard that if a man had faith
enough he could move mountains. Well, if a man has the faith in himself that Joey’s got maybe he could move stars,
too."

"There are more things, Horatio...." he began, then laughed. "A line worn threadbare by three hundred years of
repetition but as apt tonight as ever, Roy. Do you really believe Joey is moving those stars?"

"Why not?" I came back. "It’s as good an answer as any the experts have come up with."

Doc got up and went back to his own bunk. "Maybe you’re right. We’ll find out tomorrow."

And we did. Doc did, rather, while I was hard at work hauling red snappers up from the bottom of the Gulf.

* * * * *

I got home a little earlier than usual that night, just before it got really dark. Joey was sitting as usual all alone
in his wheelchair. In the gloom I could see a stack of books on the grass beside him, books Doc had given him to
study. The thing that stopped me was that Joey was staring at his feet as if they were the first ones he’d ever seen,
and he had the same look of intense concentration on his face that I’d seen when he was watching the stars.

I didn’t know what to say to him, thinking maybe I’d better not mention the stars. But Joey spoke first.

"Roy," he said, without taking his eyes off his toes, "did you know that Doc is an awfully wise man?"

I said I’d always thought so, but why?

"Doc said this morning that I ought not to move any more stars," the kid said. "He says I ought to concentrate
instead on learning how to walk again so I can go to Michigan and find Charlie."

For a minute I was mad enough to brain Doc Shull if he’d been handy. Anybody that would pull a gag like that
on a crippled, helpless kid....

"Doc says that if I can do what I’ve been doing to the stars then it ought to be easy to move my own feet," Joey
said. "And he’s right, Roy. So I’m not going to move any more stars. I’m going to move my feet."

He looked up at me with his small, solemn smile. "It took me a whole day to learn how to move that first star,
Roy, but I could do this after only a couple of hours. Look...."

And he wiggled the toes on both feet.

It’s a pity things don’t happen in life like they do in books, because a first-class story could be made out of Joey
Pond’s knack for moving things by looking at them. In a book Joey might have saved the world or destroyed it,
depending on which line would interest the most readers and bring the writer the fattest check, but of course it didn’t
really turn out either way. It ended in what Doc Shull called an anticlimax, leaving everybody happy enough except
a few astronomers who like mysteries anyway or they wouldn’t be astronomers in the first place.

The stars that had been moved stayed where they were, but the pattern they had started was never finished. That
unfinished pattern won’t ever go away, in case you’ve wondered about it—it’s up there in the sky where you can see it
any clear night—but it will never be finished because Joey Pond lost interest in it when he learned to walk again.

Walking was a slow business with Joey at first because his legs had got thin and weak—partially atrophied
muscles, Doc said—and it took time to make them round and strong again. But in a couple of weeks he was stumping
around on crutches and after that he never went near his wheelchair again.

Ethel sent him to school at Sarasota by bus and before summer vacation time came around he was playing
softball and fishing in the Gulf with a gang of other kids on Sundays.

School opened up a whole new world to Joey and he fitted himself into the routine as neat as if he’d been doing
it all his life. He learned a lot there and he forgot a lot that he’d learned for himself by being alone. Before we
realized what was happening he was just like any other ten-year-old, full of curiosity and the devil, with no more
power to move things by staring at them than anybody else had.

I think he actually forgot about those stars along with other things that had meant so much to him when he was
tied to his wheelchair and couldn’t do anything but wait and think.

For instance, a scrubby little terrier followed him home from Twin Palms one day and Ethel let him keep it. He
fed the pup and washed it and named it Dugan, and after that he never said anything more about going to Michigan
to find Charlie. It was only natural, of course, because kids—normal kids—forget their pain quickly. It’s a sort of
defense mechanism, Doc says, against the disappointments of this life.

When school opened again in the fall Ethel sold her trailer and got a job in Tampa where Joey could walk to
school instead of going by bus. When they were gone the Twin Palms trailer court was so lonesome and dead that
Doc and I pulled out and went down to the Lake Okeechobee country for the sugar cane season. We never heard from
Ethel and Joey again.

We’ve moved several times since; we’re out in the San Joaquin Valley just now, with the celery croppers. But
everywhere we go we're reminded of them. Every time we look up at a clear night sky we see what Doc calls the Joey Pond Stellar Monument, which is nothing but a funny sort of pattern roughed in with a hundred or so stars of all sizes and colors.

The body of it is so sketchy that you'd never make out what it's supposed to be unless you knew already what you were looking for. To us the head of a dog is fairly plain. If you know enough to fill in the gaps you can see it was meant to be a big shaggy dog with only one eye.

Doc says that footloose migratories like him and me forget old associations as quick as kids do--and for the same good reason--so I'm not especially interested now in where Ethel and Joey Pond are or how they're doing. But there's one thing I'll always wonder about, now that there's no way of ever knowing for sure.

I wish I'd asked Joey or Ethel, before they moved away, how Charlie lost that other eye.

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**Contents**

**LET 'EM BREATHE SPACE!**

By Lester Del Rey

_Eighteen men and two women in the closed world of a space ship for five months can only spell tension and trouble--but in this case, the atmosphere was literally poisoned._

Five months out from Earth, we were half-way to Saturn and three-quarters of the way to murder. At least, I was. I was sick of the feuding, the worries and the pettiness of the other nineteen aboard. My stomach heaved at the bad food, the eternal smell of people, and the constant sound of nagging and complaints. For ten lead pennies, I'd have gotten out into space and tried walking back to Earth. Sometimes I thought about doing it without the pennies.

But I knew I wasn't that tough, in spite of what I looked. I'd been built to play fullback, and my questionable brunet beauty had been roughed up by the explosion years before as thoroughly as dock fighting on all the planets could have done. But sometimes I figured all that meant was that there was more of me to hurt, and that I'd had more experience screaming when the anodyne ran out.

Anyhow, whole-wheat pancakes made with sourdough for the ninth "morning" running was too damned much! I felt my stomach heave over again, took one whiff of the imitation maple syrup, and shoved the mess back fast while I got up faster.

* * * * *

It was a mistake. Phil Riggs, our scrawny, half-pint meteorologist, grinned nastily and reached for the plate. "'Smatter, Paul? Don't you like your breakfast? It's good for you--whole wheat contains bran. The staff of life. Man, after that diet of bleached paste...."

* * * * *

There's one guy like that in every bunch. The cook was mad at us for griping about his coffee, so our group of scientists on this cockeyed Saturn Expedition were getting whole wheat flour as punishment, while Captain Muller probably sat in his cabin chuckling about it. In our agreement, there was a clause that we could go over Muller's head on such things with a unanimous petition--but Riggs had spiked that. The idiot liked bran in his flour, even for pancakes!

Or else he was putting on a good act for the fun of watching the rest of us suffer.

"You can take your damned whole wheat and stuff it--" I started. Then I shrugged and dropped it. There were enough feuds going on aboard the cranky old Wahoo! "Seen Jenny this morning, Phil?"

He studied me insolently. "She told Doc Napier she had some stuff growing in hydroponics she wanted to look at. You're wasting your time on that babe, boy!"

"Thanks for nothing," I muttered at him, and got out before I really decided on murder. Jenny Sanderson was our expedition biologist. A natural golden blonde, just chin-high on me, and cute enough to earn her way through a Ph. D. doing modelling. She had a laugh that would melt a brass statue and which she used too much on Doc Napier, on our chief, and even on grumpy old Captain Muller--but sometimes she used it on me, when she wanted something. And I never did have much use for a girl who was the strong independent type where there was a man to do the dirty work, so that was okay.

I suppose it was natural, with only two women among eighteen men for month after month, but right then I probably liked Doc Napier less than the captain, even. I pulled myself away from the corridor to hydroponics, started for observation, and then went on into the cubbyhole they gave me for a cabin. On the Wahoo, all a man could do was sleep or sit around and think about murder.
Well, I had nobody to blame but myself. I'd asked for the job when I first heard Dr. Pietro had collected funds and priorities for a trip to study Saturn's rings at close hand. And because I'd done some technical work for him on the Moon, he figured I might as well take me as any other good all-around mechanic and technician. He hadn't asked me, though—that had been my own stupid idea.

Paul Tremaine, self-cure expert! I'd picked up a nice phobia against space when the super-liner Lauri Ellu cracked up with four hundred passengers on my first watch as second engineer. I'd gotten free and into a suit, but after they rescued me, it had taken two years on the Moon before I could get up nerve for the shuttle back to Earth. And after eight years home, I should have let well enough alone. If I'd known anything about Pietro's expedition, I'd have wrapped myself in my phobia and loved it.

But I didn't know then that he'd done well with priorities and only fair with funds. The best he could afford was the rental of the old Earth-Mars-Venus triangle freighter. Naturally, when the Wahoo's crew heard they were slated for what would be at least three years off Earth without fancy bonus rates, they quit. Since nobody else would sign on, Pietro had used his priorities to get an injunction that forced them back aboard. He'd stuffed extra oxygen, water, food and fertilizer on top of her regular supplies, then, filled her holds with some top level fuel he'd gotten from a government assist, and set out. And by the time I found out about it, my own contract was iron-bound, and I was stuck.

As an astrophysicist, Pietro was probably tops. As a man to run the Lunar Observatory, he was a fine executive. But as a man to head up an expedition into deep space, somebody should have given him back his teething ring.

Not that the Wahoo couldn't make the trip with the new fuel; she'd been one of the early survey ships before they turned her into a freighter. But she was meant for a crew of maybe six, on trips of a couple of months. There were no game rooms, no lounges, no bar or library—nothing but what had to be. The only thing left for most of us aboard was to develop our hatreds of the petty faults of the others. Even with a homogeneous and willing crew, it was a perfect set-up for cabin fever, and we were as heterogeneous as they came.

Naturally the crew hated the science boys after being impressed into duty, and also took it out on the officers. The officers felt the same about both other groups. And the scientists hated the officers and crew for all the inconveniences of the old Wahoo. Me? I was in no-man's land—technically in the science group, but without a pure science degree; I had an officer's feelings left over from graduating as an engineer on the ships; and I looked like a crewman.

It cured my phobia, all right. After the first month out, I was too disgusted to go into a fear funk. But I found out it didn't help a bit to like space again and know I'd stay washed up as a spaceman.

* * * * *

We'd been jinxed from the start. Two months out, the whole crew of scientists came down with something Doc Napier finally diagnosed as food poisoning; maybe he was right, since our group ate in our own mess hall, and the crew and officers who didn't eat with us didn't get it. Our astronomer, Bill Sanderson, almost died. I'd been lucky, but then I never did react to things much. There were a lot of other small troubles, but the next major trick had been fumes from the nuclear generators getting up into our quarters—it was always our group that had the trouble. If Eve Nolan hadn't been puttering with some of her trick films at the time—she and Walt Harris had the so-called night shift—and seen them blacken, we'd have been dead before they discovered it. And it took us two weeks of bunking with the sullen crew and decontamination before we could pick up life again. Engineer Wilcox had been decent about helping with it, blaming himself. But it had been a mess.

Naturally, there were dark hints that someone was trying to get us; but I couldn't see any crewman wiping us out just to return to Earth, where our contract, with its completion clause, would mean he wouldn't have a dime coming to him. Anyhow, the way things were going, we'd all go berserk before we reached Saturn.

The lunch gong sounded, but I let it ring. Bullard would be serving us whole wheat biscuits and soup made out of beans he'd let soak until they turned sour. I couldn't take any more of that junk, the way I felt then. I heard some of the men going down the corridor, followed by a confused rumble of voices. Then somebody let out a yell. "Hey, roooob!"

That meant something. The old yell spacemen had picked up from carney people to rally their kind around against the foe. And I had a good idea of who was the foe. I heard the yell bounce down the passage again, and the slam of answering feet.

Then the gravity field went off. Or rather, was cut off. We may have missed the boat in getting anti-gravity, if there is such a thing, but our artificial gravity is darned near foolproof.

It was ten years since I'd moved in free fall, but Space Tech had done a good job of training good habits. I got out of my bunk, hit the corridor with a hand out, bounced, kicked, and dove toward the mess hall without a falter. The crewmen weren't doing so well—but they were coming up the corridor fast enough.

I could have wrung Muller's neck. Normally, in case of trouble, cutting gravity is smart. But not here, where the
crew already wanted a chance to commit mayhem, and had more experience than the scientists.

Yet, surprisingly, when I hit the mess hall ten feet ahead of the deckhands, most of the scientists were doing all right. Hell, I should have known Pietro, Sanderson and a couple others would be used to no-grav; in astronomical work, you cut your eye teeth on that. They were braced around the cook, who huddled back in a corner, while our purser-steward, Sam, was still singing for help.

The fat face of the cook was dead white. Bill Sanderson, looking like a slim, blond ballet dancer and muscled like an apache expert, had him in one hand and was stuffing the latest batch of whole wheat biscuits down his throat. Bill's sister, Jenny, was giggling excitedly and holding more biscuits.

The deckhands and Grundy, the mate, were almost at the door, and I had just time enough to slam it shut and lock it in their faces. I meant to enjoy seeing the cook taken down without any interruption.

Sam let out a final yell, and Bullard broke free, making a mess of it without weight. He was sputtering out bits of the biscuit. Hal Lomax reached out a big hand, stained with the chemicals that had been his life's work, and pushed the cook back.

And suddenly fat little Bullard switched from quaking fear to a blind rage. The last of the biscuit sailed from his mouth and he spat at Hal. "You damned hi-faluting black devil. You--you sneering at my cooking. I'm a white man, I am--I don't have to work for no black ni...."

* * * * *

I reached him first, though even Sam started for him then. You can deliver a good blow in free-fall, if you know how. His teeth against my knuckles stopped my leap, and the back of his head bounced off the wall. He was unconscious as he drifted by us, moving upwards. My knuckles stung, but it had been worth it. Anyhow, Jenny's look more than paid for the trouble.

The door shattered then, and the big hulk of Mate Grundy tumbled in, with the two deckhands and the pair from the engine room behind him. Sam let out a yell that sounded like protest, and they headed for us--just as gravity came on.

I pulled myself off the floor and out from under Bullard to see the stout, oldish figure of Captain Muller standing in the doorway, with Engineer Wilcox slouched easily beside him, looking like the typical natty space officer you see on television. Both held gas guns.

"All right, break it up!" Muller ordered. "You men get back to your work. And you, Dr. Pietro--my contract calls for me to deliver you to Saturn's moon, but it doesn't forbid me to haul you the rest of the way in irons. I won't have this aboard my ship!"

Pietro nodded, his little gray goatee bobbing, his lean body coming upright smoothly. "Quite right, Captain. Nor does it forbid me to let you and your men spend the sixteen months on the moon--where I command--in irons. Why don't you ask Sam what happened before you make a complete fool of yourself, Captain Muller?"

Sam gulped and looked at the crew, but apparently Pietro was right; the little guy had been completely disgusted by Bullard. He shrugged apologetically. "Bullard insulted Dr. Lomax, sir. I yelled for someone to help me get him out of here, and I guess everybody got all mixed up when gravity went off, and Bullard cracked his head on the floor. Just a misunderstanding, sir."

Muller stood there, glowering at the cut on my knuckles, and I could feel him aching for a good excuse to make his threat a reality. But finally, he grunted and swung on his heel, ordering the crew with him. Grundy threw us a final grimace and skulked off behind him. Finally there was only Wilcox, who grinned, shrugged, and shut the door quietly behind him. And we were left with the mess free-fall had made of the place.

I spotted Jenny heading across the room, carefully not seeing the fatuous glances Pietro was throwing her way, and I swung in behind. She nodded back at me, but headed straight for Lomax, with an odd look on her face. When she reached him, her voice was low and businesslike.

"Hal, what did those samples of Hendrix's show up?"

Hendrix was the Farmer, in charge of the hydroponics that turned the carbon dioxide we breathed out back to oxygen, and also gave us a bit of fresh vegetables now and then. Technically, he was a crewman, just as I was a scientist; but actually, he felt more like one of us.

Lomax looked surprised. "What samples, Jenny? I haven't seen Hendrix for two weeks."

"You--" She stopped, bit her lip, and frowned. She swung on me. "Paul, have you seen him?"

I shook my head. "Not since last night. He was asking Eve and Walt to wake him up early, then."

"That's funny. He was worried about the plants yesterday and wanted Hal to test the water and chemical fertilizer. I looked for him this morning, but when he didn't show up, I thought he was with you, Hal. And--the plants are dying!!"

"All of them?" The half smile wiped off Hal's face, and I could feel my stomach hit my insteps. When anything happens to the plants in a ship, it isn't funny.
She shook her head again. "No--about a quarter of them. I was coming for help when the fight started. They're all bleached out. And it looks like--like chromazone!"

That really hit me. They developed the stuff to fight off fungus on Venus, where one part in a billion did the trick. But it was tricky stuff; one part in ten-million would destroy the chlorophyll in plants in about twenty hours, or the hemoglobin in blood in about fifteen minutes. It was practically a universal poison.

Hal started for the door, then stopped. He glanced around the room, turned back to me, and suddenly let out a healthy bellow of seeming amusement. Jenny's laugh was right in harmony. I caught the drift, and tried to look as if we were up to some monkey business as we slipped out of the room. Nobody seemed suspicious.

Then we made a dash for hydroponics, toward the rear of the ship. We scrambled into the big chamber together, and stopped. Everything looked normal among the rows of plant-filled tanks, pipes and equipment. Jenny led us down one of the rows and around a bend.

The plants in the rear quarter weren't sick--they were dead. They were bleached to a pale yellow, like boiled grass, and limp. Nothing would save them now.

"I'm a biologist, not a botanist--" Jenny began.

Hal grunted sickly. "Yeah. And I'm not a life hormone expert. But there's one test we can try."

He picked up a pair of rubber gloves from a rack, and pulled off some wilted stalks. From one of the healthy tanks, he took green leaves. He mashed the two kinds together on the edge of a bench and watched. "If it's chromazone, they've developed an enzyme by now that should eat the color out of those others."

* * * * *

In about ten seconds, I noticed the change. The green began to bleach before my eyes.

Jenny made a sick sound in her throat and stared at the rows of healthy plants. "I checked the valves, and this sick section is isolated. But--if chromazone got into the chemicals.... Better get your spectroanalyzer out, Hal, while I get Captain Muller. Paul, be a dear and find Hendrix, will you?"

I shook my head, and went further down the rows. "No need, Jenny," I called back. I pointed to the shoe I'd seen sticking out from the edge of one of the tanks. There was a leg attached.

I reached for it, but Lomax shoved me back. "Don't--the enzymes in the corpse are worse than the poison, Paul. Hands off." He reached down with the gloves and heaved. It was Hendrix, all right--a corpse with a face and hands as white as human flesh could ever get. Even the lips were bleached out.

Jenny moaned. "The fool! The stupid fool. He knew it was dangerous without gloves; he suspected chromazone, even though none's supposed to be on board. And I warned him . . ."

"Not against this, you didn't," I told her. I dropped to my knees and took another pair of gloves. Hendrix's head rolled under my grasp. The skull was smashed over the left eye, as if someone had taken a sideswipe at Hendrix with a hammer. No fall had produced that. "You should have warned him about his friends. Must have been killed, then dumped in there."

"Murder!" Hal bit the word out in disgust. "You're right, Paul. Not too stupid a way to dispose of the body, either--in another couple of hours, he'd have started dissolving in that stuff, and we'd never have guessed it was murder. That means this poisoning of the plants wasn't an accident. Somebody poisoned the water, then got worried when there wasn't a report on the plants; must have been someone who thought it worked faster on plants than it does. So he came to investigate, and Hendrix caught him fooling around. So he got killed."

"But who?" Jenny asked.

I shrugged sickly. "Somebody crazy enough--or desperate enough to turn back that he'll risk our air and commit murder. You'd better go after the captain while Hal gets his test equipment. I'll keep watch here."

It didn't feel good in hydroponics after they left. I looked at those dead plants, trying to figure whether there were enough left to keep us going. I studied Hendrix's body, trying to tell myself the murderer had no reason to come back and try to get me.

I reached for a cigarette, and then put the pack back. The air felt almost as close as the back of my neck felt tense and unprotected. And telling myself it was all imagination didn't help--not with what was in that chamber to keep me company.

II

Muller's face was like an iceberg when he came down--but only after he saw Hendrix. Before then I'd caught the fat moon-calf expression on his face, and I'd heard Jenny giggling. Damn it, they'd taken enough time. Hal was already back, fussing over things with the hunk of tin and lenses he treated like a newborn baby.

Doc Napier came in behind them, but separately. I saw him glance at them and look sick. Then both Muller and Napier began concentrating on business. Napier bent his nervous, bony figure over the corpse, and stood up almost at once. "Murder all right."

"So I guessed, Dr. Napier," Muller growled heavily at him. "Wrap him up and put him between hulls to freeze.
We'll bury him when we land. Tremaine, give a hand with it, will you?"

"I'm not a laborer, Captain Muller!" Napier protested. I started to tell him where he could get off, too.

   But Jenny shook her head at us. "Please. Can't you see Captain Muller is trying to keep too many from knowing
about this? I should think you'd be glad to help. Please?"

   Put that way, I guess it made sense. We found some rubber sheeting in one of the lockers, and began wrapping
Hendrix in it; it wasn't pleasant, since he was beginning to soften up from the enzymes he'd absorbed. "How about
going ahead to make sure no one sees us?" I suggested to Jenny.

Muller opened his mouth, but Jenny gave one of her quick little laughs and opened the door for us. Doc looked
relieved. I guessed he was trying to kid himself. Personally, I wasn't a fool--I was just hooked; I knew perfectly well
she was busy playing us off against one another, and probably having a good time balancing the books. But hell,
that's the way life runs.

"Get Pietro up here!" Muller fired after us. She laughed again, and nodded. She went with us until we got to the
tween-hulls lock, then went off after the chief. She was back with him just as we finished stuffing Hendrix through
and sealing up again.

Muller grunted at us when we got back, then turned to Lomax again. The big chemist didn't look happy. He
spread his hands toward us, and hunched his shoulders. "A fifty-times over-dose of chromazone in those tanks--
fortunately none in the others. And I can't find a trace of it in the fertilizer chemicals or anywhere else. Somebody
deliberately put it into those tanks."

"Why?" Pietro asked. We'd filled him in with the rough details, but it still made no sense to him.

"Suppose you tell me, Dr. Pietro," Muller suggested. "Chromazone is a poison most people never heard of. One
of the new scientific nuisances."

   Pietro straightened, and his goatee bristled. "If you're hinting . . ."

   "I am not hinting, Dr. Pietro. I'm telling you that I'm confining your group to their quarters until we can clean
up this mess, distil the water that's contaminated, and replant. After that, if an investigation shows nothing, I may
take your personal bond for the conduct of your people. Right now I'm protecting my ship."

   "But captain--" Jenny began.

Muller managed a smile at her. "Oh, not you, of course, Jenny. I'll need you here. With Hendrix gone, you're
the closest thing we have to a Farmer now."

   * * * * *

"Captain Muller," Pietro said sharply. "Captain, in the words of the historical novelists--drop dead! Dr.
Sanderson, I forbid you to leave your quarters so long as anyone else is confined to his. I have ample authority for
that."

"Under emergency powers--" Muller spluttered over it, and Pietro jumped in again before he could finish.

"Precisely, Captain. Under emergency situations, when passengers aboard a commercial vessel find indications
of total irresponsibility or incipient insanity on the part of a ship's officer, they are considered correct in assuming
command for the time needed to protect their lives. We were poisoned by food prepared in your kitchen, and were
nearly killed by radioactivity through a leak in the engine-room--and no investigation was made. We are now
confronted with another situation aimed against our welfare--as the others were wholly aimed at us--and you choose
to conduct an investigation against our group only. My only conclusion is that you wish to confine us to quarters so
we cannot find your motives for this last outrage. Paul, will you kindly relieve the captain of his position?"

   They were both half right, and mostly wrong. Until it was proved that our group was guilty, Muller couldn't
issue an order that was obviously discriminatory and against our personal safety in case there was an attack directed
on us. He'd be mustered out of space and into the Lunar Cells for that. But on the other hand, the "safety for
passengers" clause Pietro was citing applied only in the case of overt, direct and physical danger by an officer to
normal passengers. He might be able to weasel it through a court, or he might be found guilty of mutiny. It left me in
a pretty position.

   Jenny fluttered around. "Now, now--" she began.

   I cut her off. "Shut up, Jenny. And you two damned fools cool down. Damn it, we've got an emergency here all
right--we may not have air plants enough to live on. Pietro, we can't run the ship--and neither can Muller get through
what's obviously a mess that may call for all our help by confining us. Why don't you two go off and fight it out in
person?"

Surprisingly, Pietro laughed. "I'm afraid I'd put up a poor showing against the captain, Paul. My apologies,
Captain Muller."

Muller hesitated, but finally took Pietro's hand, and dropped the issue.

"We've got enough plants," he said, changing the subject. "We'll have to cut out all smoking and other waste of
air. And I'll need Jenny to work the hydroponics, with any help she requires. We've got to get more seeds planted,
and fast. Better keep word of this to ourselves. We--"

A shriek came from Jenny then. She'd been busy at one of the lockers in the chamber. Now she began ripping
others open and pawing through things inside rubber-gloves. "Captain Muller! The seeds! The seeds!"

Hal took one look, and his face turned gray.

"Chromazone," he reported. "Every bag of seed has been filled with a solution of chromazone! They're
worthless!"

"How long before the plants here will seed?" Muller asked sharply.

"Three months," Jenny answered. "Captain Muller, what are we going to do?"

The dour face settled into grim determination. "The only sensible thing. Take care of these plants, conserve the
air, and squeeze by until we can reseed. And, Dr. Pietro, with your permission, we'll turn about for Earth at once.
We can't go on like this. To proceed would be to endanger the life of every man aboard."

"Please, Danton." Jenny put her hand on Pietro's arm. "I know what this all means to you, but--"

Pietro shook her off. "It means the captain's trying to get out of the expedition, again. It's five months back to
Earth--more, by the time we kill velocity. It's the same to Saturn. And either way, in five months we've got this fixed
up, or we're helpless. Permission to return refused, Captain Muller."

"Then if you'll be so good as to return to your own quarters," Muller said, holding himself back with an effort
that turned his face red, "we'll start clearing this up. And not a word of this."

Napier, Lomax, Pietro and I went back to the scientists' quarters, leaving Muller and Jenny conferring busily.

That was at fifteen o'clock. At sixteen o'clock, Pietro issued orders against smoking.

Dinner was at eighteen o'clock. We sat down in silence. I reached for my plate without looking. And suddenly
little Phil Riggs was on his feet, raving. "Whole wheat! Nothing but whole wheat bread! I'm sick of it--sick! I won't--"

"Sit down!" I told him. I'd bitten into one of the rolls on the table. It was white bread, and it was the best the
cook had managed so far. There was corn instead of baked beans, and he'd done a fair job of making meat loaf.
"Stop making a fool of yourself, Phil."

He slumped back, staring at the white bun into which he'd bitten. "Sorry. Sorry. It's this air--so stuffy. I can't
breathe. I can't see right--"

Pietro and I exchanged glances, but I guess we weren't surprised. Among intelligent people on a ship of that
size, secrets wouldn't keep. They'd all put bits together and got part of the answer. Pietro shrugged, and half stood up
to make an announcement.

"Beg pardon, sirs." We jerked our heads around to see Bullard standing in the doorway.

He was scared stiff, and his words got stuck in his throat. Then he found his voice again. "I heard as how
Hendrix went crazy and poisoned the plants and went and killed himself and we'll all die if we don't find some trick,
and what I want to know, please, sirs, is are what they're saying right and you know all kinds of tricks and can you
save us because I can't go on like this not knowing and hearing them talking outside the galley and none of them
telling me--"

Lomax cut into his flood of words. "You'll live, Bullard. Farmer Hendrix did get killed in an accident to some of
the plants, but we've still got air enough. Captain Muller has asked the help of a few of us, but it's only a
temporary emergency."

Bullard stared at him, and slowly some of the fear left his face--though not all of it. He turned and left with a
curt bow of his head, while Pietro added a few details that weren't exactly lies to Lomax's hasty cover-up, along with
a grateful glance at the chemist. It seemed to work, for the time being--at least enough for Riggs to begin making
nasty remarks about cooked paste.

Then the tension began to build again. I don't think any of the crew talked to any of our group. And yet, there
seemed to be a chain of rumor that exchanged bits of information. Only the crew could have seen the dead plants
being carried down to our refuse breakdown plant; and the fact it was chromazone poisoning must have been
deduced from a description by some of our group. At any rate, both groups knew all about it--and a little bit more, as
was usual with rumors--by the second day.

Muller should have made the news official, but he only issued an announcement that the danger was over.
When Peters, our radioman-navigator, found Sam and Phil Riggs smoking and dressed them down, it didn't make
Muller's words seem too convincing. I guessed that Muller had other things on his mind; at least he wasn't in his
cabin much, and I didn't see Jenny for two whole days.

My nerves were as jumpy as those of the rest. It isn't too bad cutting out smoking; a man can stand imagining
the air is getting stale; but when every unconscious gesture toward cigarettes that aren't there reminds him of the air,
and when every imagined stale stench makes him want a cigarette to relax, it gets a little rough.

Maybe that's why I was in a completely rotten mood when I finally did spot Jenny going down the passage, with the tight coveralls she was wearing emphasizing every motion of her hips. I grabbed her and swung her around.

"Hi, stranger. Got time for a word?"

She sort of brushed my hand off her arm, but didn't seem to mind it. "Why, I guess so, Paul. A little time. Captain Muller's watching the 'ponics."

"Good," I said, trying to forget Muller. "Let's make it a little more private than this, though. Come on in."

She lifted an eyebrow at the open door of my cabin, made with a little giggle, and stepped inside. I followed her, and kicked the door shut. She reached for it, but I had my back against it.

"Paul!" She tried to get around me, but I wasn't having any. I pushed her back onto the only seat in the room, which was the bunk. She got up like a spring uncoiling. "Paul Tremaine, you open that door. You know better than that. Paul, please!"

"What makes me any different than the others? You spend plenty of time in Muller's cabin--and you've been in Pietro's often enough. Probably Doc Napier's, too!"

Her eyes hardened, but she decided to try the patient and reason-with-the-child line. "That is different. Captain Muller and I have a great deal of business to work out."

"Sure. And he looks great in lipstick!"

It was a shot in the dark, but it went home. I wished I'd kept my damned mouth shut; before I'd been suspecting it--now I knew. She turned pink and tried to slap me, which won't work when the girl is sitting on a bunk and I'm on my feet. "You mind your own business!"

"What's the matter? Generations should stick together, and he's old enough to be your father!"

She leaned back and studied me. Then she smiled slowly, and something about it made me sick inside. "I like older men, Paul. They make people my own age seem so callow, so unfinished. It's so comforting to have mature people around. I always did have an Electra complex."

"The Greeks had plenty of names for it, kid," I told her. "Don't get me wrong. If you want to be a slut, that's your own business. But when you pull the innocent act on me, and then fall back to sophomore psychology--"

This time she stood up before she slapped. Before her hand stung my face, I was beginning to regret what I'd said. Afterwards, I didn't give a damn. I picked her up off the floor, slapped her soundly on the rump, pulled her tight against me, and kissed her. She tried scratching my face, then went passive, and wound up with one arm around my neck and the other in the hair at the back of my head. When I finally put her down she sank back onto the bunk, breathing heavily.

"Why, Paul!" And she reached out her arms as I came down to meet them. For a second, the world looked pretty good.

Then a man's hoarse scream cut through it all, with the sound of heavy steps in panic flight. I jerked up. Jenny hung on. "Paul... Paul...." But there was the smell of death in the air, suddenly. I broke free and was out into the corridor. The noise seemed to come from the shaft that led to the engine room, and I jumped for it, while I heard doors slam.

This time, there was a commotion, like a wet sack being tossed around in a pentagonal steel barrel, and another hoarse scream that cut off in the middle to a gargling sound.

I reached the shaft and started down the center rail, not bothering with the hand-grips. I could hear something rustle below, followed by silence, but I couldn't see a thing; the lights had been cut.

I could feel things poking into my back before I landed; I always get the creeps when there's death around, and that last sound had been just that--somebody's last sound. I knew somebody was going to kill me before I could find the switch. Then I stumbled over something, and my hair stood on end. I guess my own yell was pretty horrible. It scared me worse than I was already. But my fingers found the switch somehow, and the light flashed on.

Sam lay on the floor, with blood still running from a wide gash across his throat. A big kitchen knife was still stuck in one end of the horrible wound. And one of his fingers was half sliced off where the blade of a switch-blade shiv had failed on him and snapped back.

Something sounded above me, and I jerked back. But it was Captain Muller, coming down the rail. The man had obviously taken it all in on the way down. He jerked the switch-blade out of Sam's dead grasp and looked at the point of the knife. There was blood further back from the cut finger, but none on the point.

"Damn!" Muller tossed it down in disgust. "If he'd scratched the other man, we'd have had a chance to find who it was. Tremaine, have you got an alibi?"

"I was with Jenny," I told him, and watched his eyes begin to hate me. But he nodded. We picked Sam up together and lugged his body up to the top of the shaft, where the crowd had collected. Pietro, Peters, the cook,
Grundy and Lomax were there. Beyond them, the dark-haired, almost masculine head of Eve Nolan showed, her eyes studying the body of Sam as if it were a negative in her darkroom; as usual, Bill Sanderson was as close to her as he could get. But there was no sign now of Jenny. I glanced up the corridor but saw only Wilcox and Phil Riggs, with Walt Harris trailing them, rubbing the sleep out of his eyes.

Muller moved directly to Pietro. "Six left in my crew now, Dr. Pietro. First Hendrix, now Sam. Can you still say that the attack is on your crew--when mine keep being killed? This time, sir, I demand . . ."

"Give 'em hell, Captain," ape-man Grundy broke in. "Cut the fancy stuff, and let's get the damned murdering rats!"

Muller's eyes quartered him, spitted his carcass, and began turning him slowly over a bed of coals. "Mister Grundy, I am master of the Wahoo. I fail to remember asking for your piratical advice. Dr. Pietro, I trust you will have no objections if I ask Mr. Peters to investigate your section and group thoroughly?"

"None at all, Captain Muller," Pietro answered. "I trust Peters. And I feel sure you'll permit me to delegate Mr. Tremaine to inspect the remainder of the ship?"

Muller nodded curtly. "Certainly. Until the madman is found, we're all in danger. And unless he is found, I insist I must protect my crew and my ship by turning back to Earth."

"I cannot permit that, sir!"

"Your permission for that was not requested, Dr. Pietro! Yes, Bullard?"

The cook had been squirming and muttering to himself for minutes. Now he darted out toward Grundy, and his finger pointed to Lomax. "He done it! I seen him. Killed the only friend I had, he did. They went by my galley--and--and he grabbed my big knife, that one there. And he killed Sam."

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"You're sure it was Lomax?" Muller asked sharply.

"Sure I'm sure. Sam, he was acting queer lately. He was worried. Told me he saw something, and he was going to know for sure. He borrowed my switch-blade knife that my wife gave me. And he went out looking for something. Then I heard him a-running, and I looked up, and there was this guy, chasing him. Sure, I seen him with my own eyes."

Eve Nolan chuckled throatily, throwing her mannish-cut hair back from her face. She was almost pretty with an expression on her countenance, even if it was amused disgust. "Captain Muller, that's a nice story. But Dr. Lomax was with me in my darkroom, working on some spectroanalysis slides. Bill Sanderson and Phil Riggs were waiting outside for us. And Mr. Peters saw us come out together when we all ran down here."

Peters nodded. Muller stared at us for a second, and the hunting lust died out of his eyes, leaving them blank and cold. He turned to Bullard. "Bullard, an explanation might make me reduce your punishment. If you have anything to say, say it now!"

The cook was gibbering and actually drooling with fear. He shook, and sweat popped out all over him. "My knife--I hadda say something. They stole my knife. They wanted it to look like I done it. God, Captain, you'da done the same. Can't punish a man for trying to save his life. I'm a good man, I am. Can't whip a good man! Can't--"

"Give him twenty-five lashes with the wire, Mr. Grundy," Muller said flatly.

Pietro let out a shriek on top of the cook's. He started forward, but I caught him. "Captain Muller's right," I told him. "On a spaceship, the full crew is needed. The brig is useless, so the space-enabling charter recognizes flogging. Something is needed to maintain discipline."

Pietro dropped back reluctantly, but Lomax faced the captain. "The man is a coward, hardly responsible, Captain Muller. I'm the wounded party in this case, but it seems to me that hysteria isn't the same thing as malice. Suppose I ask for clemency?"

"Thank you, Dr. Lomax," Muller said, and actually looked relieved. "Make it ten lashes, Mr. Grundy. Apparently no real harm has been done, and he will not testify in the future."

Grundy began dragging Bullard out, muttering about damn fool groundlubbers always sticking their noses in. The cook caught at Lomax's hand on the way, literally slobbering over it. Lomax rubbed his palm across his thigh, looking embarrassed.

Muller turned back to us. "Very well. Mr. Peters will begin investigating the expedition staff and quarters; Mr. Tremaine will have free run over the rest of the ship. And if the murderer is not turned up in forty-eight hours, we head back to Earth!"

Pietro started to protest again, but another scream ripped down the corridor, jerking us all around. It was Jenny, running toward us. She was breathing hoarsely as she nearly crashed into Dr. Pietro.

Her face was white and sick, and she had to try twice before she could speak.

"The plants!" she gasped out. "Poison! They're dying!"
It was chromazole again. Muller had kept most of the gang from coming back to hydroponics, but he, Jenny, Pietro, Wilcox and myself were enough to fill the room with the smell of sick fear. Now less than half of the original space was filled with healthy plants. Some of the tanks held plants already dead, and others were dying as we watched; once beyond a certain stage, the stuff acted almost instantly—for hours there was only a slight indication of something wrong, and then suddenly there were the dead, bleached plants.

Wilcox was the first to speak. He still looked like some nattily dressed hero of a space serial, but his first words were ones that could never have gone out on a public broadcast. Then he shrugged. "They must have been poisoned while we were all huddled over Sam's body. Who wasn't with us?"

"Nonsense," Pietro denied. "This was done at least eighteen hours ago, maybe more. We'd have to find who was around then."

"Twenty hours, or as little as twelve," Jenny amended. "It depends on the amount of the dosage, to some extent. And...." She almost managed to blush. "Well, there have been a lot of people around. I can't even remember. Mr. Grundy and one of the men, Mr. Wilcox, Dr. Napier--oh, I don't know!"

Muller shook his head in heavy agreement. "Naturally. We had a lot of work to do here. After word got around about Hendrix, we didn't try to conceal much. It might have happened when someone else was watching, too. The important thing, gentlemen, is that now we don't have reserve enough to carry us to Saturn. The plants remaining can't handle the air for all of us. And while we ship some reserve oxygen...."

He let it die in a distasteful shrug. "At least this settles one thing. We have no choice now but to return to Earth!"

"Captain Muller," Pietro bristled quickly, "that's getting to be a monomania with you. I agree we are in grave danger. I don't relish the prospect of dying any more than you do--perhaps less, in view of certain peculiarities! But it's now further back to Earth than it is to Saturn. And before we can reach either, we'll have new plants--or we'll be dead!"

"Some of us will be dead, Dr. Pietro," Wilcox amended it. "There are enough plants left to keep some of us breathing indefinitely."

Pietro nodded. "And I suppose, in our captain's mind, that means the personnel of the ship can survive. Captain Muller, I must regard your constant attempt to return to Earth as highly suspicious in view of this recurrent sabotage of the expedition. Someone here is apparently either a complete madman or so determined to get back that he'll resort to anything to accomplish his end. And you have been harping on returning over and over again!"

Muller bristled, and big heavy fist tightened. Then he drew himself up to his full dumpy height. "Dr. Pietro," he said stiffly, "I am as responsible to my duties as any man here--and my duties involve protecting the life of every man and woman on board; if you wish to return, I shall be most happy to submit this to a formal board of inquiry. I--"

"Just a minute," I told them. "You two are forgetting that we've got a problem here. Damn it, I'm sick of this fighting among ourselves. We're a bunch of men in a jam, not two camps at war now. I can't see any reason why Captain Muller would want to return that badly."

Muller nodded slightly. "Thank you, Mr. Tremaine. However, for the record, and to save you trouble investigating there is a good reason. My company is now building a super-liner; if I were to return within the next six months, they'd promote me to captain of that ship--a considerable promotion, too."

For a moment, his honesty seemed to soften Pietro. The scientist mumbled some sort of apology, and turned to the plants. But it bothered me; if Muller had pulled something, the smartest thing he could have done would be to have said just what he did.

Besides, knowing that Pietro's injunction had robbed him of a chance like that was enough to rankle in any man's guts and make him work up something pretty close to insanity. I marked it down in my mental files for the investigation I was supposed to make, but let it go for the moment.

Muller stood for a minute longer, thinking darkly about the whole situation. Then he moved toward the entrance to hydroponics and pulled out the ship speaker mike. "All hands and passengers will assemble in hydroponics within five minutes," he announced. He swung toward Pietro. "With your permission, Doctor," he said caustically.

The company assembled later looked as sick as the plants. This time, Muller was hiding nothing. He outlined the situation fully; maybe he shaded it a bit to throw suspicion on our group, but in no way we could pin down. Finally he stated flatly that the situation meant almost certain death for at least some of those aboard.

"From now on, there'll be a watch kept. This is closed to everyone except myself, Dr. Pietro, Mr. Peters, and Dr. Jenny Sanderson. At least one of us will be here at all times, equipped with gas guns. Anyone else is to be killed on setting foot inside this door!" He swung his eyes over the group. "Any objections?"

* * * * *
Grundy stirred uncomfortably. "I don't go for them science guys up here. Takes a crazy man to do a thing like this, and everybody knows...."

Eve Nolan laughed roughly. "Everybody knows you've been swearing you won't go the whole way, Grundy. These jungle tactics should be right up your alley."

"That's enough," Muller cut through the beginnings of the hassle. "I trust those I appointed--at least more than I do the rest of you. The question now is whether to return to Earth at once or to go on to Saturn. We can't radio for help for months yet. We're not equipped with sharp beams, we're low powered, and we're off the lanes where Earth's pick-ups hunt. Dr. Pietro wants to go on, since we can't get back within our period of safety; I favor returning, since there is no proof that this danger will end with this outrage. We've agreed to let the result of a vote determine it."

Wilcox stuck up a casual hand, and Muller nodded to him. He grinned amiably at all of us. "There's a third possibility, Captain. We can reach Jupiter in about three months, if we turn now. It's offside, but closer than anything else. From there, on a fast liner, we can be back on Earth in another ten days."

Muller calculated, while Peters came up to discuss it. Then he nodded. "Saturn or Jupiter, then. I'm not voting, of course. Bullard is disqualified to vote by previous acts." He drew a low moan from the sick figure of Bullard for that, but no protest. Then he nodded. "All those in favor of Jupiter, your right hands please!"

I counted them, wondering why my own hand was still down. It made some sort of sense to turn aside now. But none of our group was voting--and all the others had their hands up, except for Dr. Napier. "Seven," Muller announced. "Those in favor of Saturn."

Again, Napier didn't vote. I hesitated, then put my hand up. It was crazy, and Pietro was a fool to insist. But I knew that he'd never get another chance if this failed, and....

"Eight," Muller counted. He sighed, then straightened. "Very well, we go on. Dr. Pietro, you will have my full support from now on. In return, I'll expect every bit of help in meeting this emergency. Mr. Tremaine was correct; we cannot remain camps at war."

Pietro's goatee bobbed quickly, and his hand went out. But while most of the scientists were nodding with him, I caught the dark scowl of Grundy, and heard the mutters from the deckhands and the engine men. If Muller could get them to cooperate, he was a genius.

Pietro faced us, and his face was serious again. "We can hasten the seeding of the plants a little, I think, by temperature and light-and-dark cycle manipulations. Unfortunately, these aren't sea-algae plants, or we'd be in comparatively little trouble. That was my fault in not converting. We can, however, step up their efficiency a bit. And I'm sure we can find some way to remove the carbon dioxide from the air."

"How about oxygen to breathe?" Peters asked.

"That's the problem," Pietro admitted. "I was wondering about electrolyzing water."

Wilcox bobbed up quickly. "Can you do it on AC current?"

Lomax shook his head. "It takes DC."

"Then that's out. We run on 220 AC. And while I can rectify a few watts, it wouldn't be enough to help. No welders except monatomic hydrogen torches, even."

Pietro looked sicker than before. He'd obviously been counting on that. But he turned to Bullard. "How about seeds? We had a crop of tomatoes a month ago--and from the few I had, they're all seed. Are any left?"

Bullard rocked from side to side, moaning. "Dead. We're all gonna be dead. I told him, I did, you take me out there, I'll never get back. I'm a good man, I am. I wasn't never meant to die way out here. I--I--"

He gulped and suddenly screamed. He went through the door at an awkward shuffle, heading for his galley. Muller shook his head, and turned toward me. "Check up, will you, Mr. Tremaine? And I suggest that you and Mr. Peters start your investigation at once. I understand that chromazone would require so little hiding space that there's no use searching for it. But if you can find any evidence, report it at once."

Peters and I left. I found the galley empty. Apparently Bullard had gone to lie on his stomach in his bunk and nurse his terror. I found the freezer compartments, though--and the tomatoes. There must have been a bushel of them, but Bullard had followed his own peculiar tastes. From the food he served, he couldn't stand fresh vegetables; and he'd cooked the tomatoes down thoroughly and run them through the dehydrator before packing them away!

It was a cheerful supper, that one! Bullard had half-recovered and his fear was driving him to try to be nice to us. The selection was good, beyond the inevitable baked beans; but he wasn't exactly a chef at best, and his best was far behind him. Muller had brought Wilcox, Napier and Peters down to our mess with himself, to consolidate forces, and it seemed that he was serious about cooperating. But it was a little late for that.

Overhead, the fans had been stepped up to counteract the effect of staleness our minds supplied. But the whine of the motors kept reminding us our days were counted. Only Jenny was normal; she sat between Muller and Pietro, where she could watch my face and that of Napier. And even her giggles had a forced sound.
There were all kinds of things we could do—in theory. But we didn’t have that kind of equipment. The plain fact was that the plants were going to lose the battle against our lungs. The carbon dioxide would increase, speeding up our breathing, and making us all seem to suffocate. The oxygen would grow thinner and thinner, once our supplies of bottled gas ran out. And eventually, the air wouldn’t support life.

"It’s sticky and hot," Jenny complained, suddenly.

"I stepped up the humidity and temperature controls," I told her. She nodded in quick comprehension, but I went on for Muller’s benefit. "Trying to give the plants the best growing atmosphere. We’ll feel just as hot and sticky when the carbon dioxide goes up, anyhow."

"It must already be up," Wilcox said. "My two canaries are breathing faster."

"Canaries," Muller said. He frowned, though he must have known of them. It was traditional to keep them in the engine-room, though the reason behind it had long since been lost. "Better kill them, Mr. Wilcox."

Wilcox jerked, and his face paled a bit. Then he nodded. "Yes, sir!"

That was when I got scared. The idea that two birds breathing could hurt our chances put things on a little too vivid a basis. Only Lomax seemed unaffected. He shoved back now, and stood up.

"Some tests I have to make, Captain. I have an idea that might turn up the killer among us!"

I had an idea he was bluffing, but I kept my mouth shut. A bluff was as good as anything else, it seemed.

At least, it was better than anything I seemed able to do. I prowled over the ship, sometimes meeting Peters doing the same, but I couldn’t find a bit of evidence. The crewmen sat watching with hating eyes. And probably the rest aboard hated and feared us just as much. It wasn’t hard to imagine the man who was behind it all deciding to wipe one of us out. My neck got a permanent crimp from keeping one eye behind me. But there wasn’t a shred of evidence I could find.

In two more days, we began to notice the stuffiness more. My breathing went up enough to notice. Somehow, I couldn’t get a full breath. And the third night, I woke up in the middle of my sleep with the feeling something was sitting on my chest; but since I’d taken to sleeping with the light on, I saw that it was just the stuffiness that was bothering me. Maybe most of it had been psychological up until then. But that was the real thing.

The nice part of it was that it wouldn’t be sudden—we’d have days to get closer and closer to death; and days for each one to realize a little more that every man who wasn’t breathing would make it that much easier for the rest of us. I caught myself thinking of it when I saw Bullard or Grundy.

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Then trouble struck again. I was late getting to the scene this time, down by the engine room. Muller and Bill Sanderson were ahead of me, trying to separate Hal Lomax and Grundy, and not doing so well. Lomax brought up a haymaker as I arrived, and started to shout something. But Grundy was out of Muller’s grasp, and up, swinging a wrench. It connected with a dull thud, and Lomax hit the floor, unconscious.

I picked Grundy up by the collar of his jacket, heaved him around and against a wall, where I could get my hand against his esophagus and start squeezing. His eyeballs popped, and the wrench dropped from his hands. When I get mad enough to act that way, I usually know I’ll regret it later. This time it felt good, all the way. But Muller pushed me aside, waiting until Grundy could breathe again.

"All right," Muller said. "I hope you’ve got a good explanation, before I decide what to do with you."

Grundy’s eyes were slitted, as if he’d been taking some of the Venus drugs. But after one long, hungry look at me, he faced the captain. "Yes, sir. This guy came down here ahead of me. Didn’t think nothing of it, sir. But when he started fiddling with the panel there, I got suspicious." He pointed to the external control panel for the engine room, to be used in case of accidents. "With all that’s been going on, how’d I know but maybe he was gonna dump the fuel? And then I seen he had keys. I didn’t wait, sir. I jumped him. And then you come up."

Wilcox came from the background and dropped beside the still figure of Lomax. He opened the man’s left hand and pulled out a bunch of keys, examining them. "Engine keys, Captain Muller. Hey—it’s my set! He must have lifted them from my pocket. It looks as if Grundy’s found our killer!"

"Or Lomax found him!" I pointed out. "Anybody else see this start, or know that Lomax didn’t get those keys away from Grundy, when he started trouble?"

"Why, you—" Grundy began, but Wilcox cut off his run. It was a shame. I still felt like pushing the man’s Adam’s apple through his medulla oblongata.

"Lock them both up, until Dr. Lomax comes to," Muller ordered. "And send Dr. Napier to take care of him. I’m not jumping to any conclusions." But the look he was giving Lomax indicated that he’d already pretty well made up his mind. And the crew was positive. They drew back sullenly, staring at us like animals studying a human hunter, and they didn’t like it when Peters took Grundy to lock him into his room. Muller finally chased them out, and left Wilcox and me alone.

Wilcox shrugged wryly, brushing dirt off his too-clean uniform. "While you’re here, Tremaine, why not look
my section over? You've been neglecting me."

I'd borrowed Muller's keys and inspected the engine room from top to bottom the night before, but I didn't mention that. I hesitated now; to a man who grew up to be an engineer and who'd now gotten over his psychosis against space too late to start over, the engines were things better left alone. Then I remembered that I hadn't seen Wilcox's quarters, since he had the only key to them.

I nodded and went inside. The engines were old, and the gravity generator was one of the first models. But Wilcox knew his business. The place was slick enough, and there was the good clean smell of metal working right. I could feel the controls in my hands, and my nerves itched as I went about making a perfunctory token examination. I even opened the fuel lockers and glanced in. The two crewmen watched with hard eyes, slitted as tight as Grundy's, but they didn't bother me. Then I shrugged, and went back with Wilcox to his tiny cabin.

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I was hit by the place before I got inside. Tiny, yes, but fixed up like the dream of every engineer. Clean, neat, filled with books and luxuries. He even had a tape player I'd seen on sale for a trifle over three thousand dollars. He turned it on, letting the opening bars of Haydn's Oxford Symphony come out. It was a binaural, ultra-fidelity job, and I could close my eyes and feel the orchestra in front of me.

This time I was thorough, right down the line, from the cabinets that held luxury food and wine to the little drawer where he kept his dress-suit studs; they might have been rutiles, but I had a hunch they were genuine catseyes.

He laughed when I finished, and handed me a glass of the first decent wine I'd tasted in months. "Even a small ozonator to make the air seem more breathable, and a dehumidifier, Tremaine. I like to live decently. I started saving my money once with the idea of getting a ship of my own--" There was a real dream in his eyes for a second. Then he shrugged. "But ships got bigger and more expensive. So I decided to live. At forty, I've got maybe twenty years ahead here, and I mean to enjoy it. And--well, there are ways of making a bit extra...."

I nodded. So it's officially smuggling to carry a four-ounce Martian fur to Earth where it's worth a fortune, considering the legal duty. But most officers did it now and then. He put on Sibelius' Fourth while I finished the wine. "If this mess is over, Paul, or you get a chance, drop down," he said. "I like a man who knows good things--and I liked your reaction when you spotted that Haydn for Hohmann's recording. Muller pretends to know music, but he likes the flashiness of Möhlwehr."

Hell, I'd cut my eye teeth on that stuff; my father had been first violinist in an orchestra, and had considered me a traitor when I was born without perfect pitch. We talked about Sibelius for awhile, before I left to go out into the stinking rest of the ship. Grundy was sitting before the engines, staring at them. Wilcox had said the big ape liked to watch them move ... but he was supposed to be locked up.

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I stopped by Lomax's door; the shutter was open, and I could see the big man writhing about, but he was apparently unconscious. Napier came back from somewhere, and nodded quickly.

"Concussion," he said. "He's still out, but it shouldn't be too serious."

"Grundy's loose." I'd expected surprise, but there was none. "Why?"

He shrugged. "Muller claimed he needed his mate free to handle the crew, and that there was no place the man could go. I think it was because the men are afraid they'll be outnumbered by your group." His mouth smiled, but it was suddenly bitter. "Jenny talked Pietro into agreeing with Muller."

Mess was on when I reached the group. I wasn't hungry. The wine had cut the edge from my appetite, and the slow increase of poison in the air was getting me, as it was the others. Sure, carbon dioxide isn't a real poison--but no organism can live in its own waste, all the same. I had a rotten headache. I sat there playing a little game I'd invented--trying to figure which ones I'd eliminate if some had to die. Jenny laughed up at Muller, and I added him to the list. Then I changed it, and put her in his place. I was getting sick of the little witch, though I knew it would be different if she'd been laughing up at me. And then, because of the sick-calf look on Bill Sanderson's face as he stared at Eve, I added him, though I'd always liked the guy. Eve, surprisingly, had as many guys after her as Jenny; but she didn't seem interested. Or maybe she did--she'd pulled her hair back and put on a dress that made her figure look good. Either flattery was working, or she was entering into the last-days feeling most of us had.

Napier came in and touched my shoulder. "Lomax is conscious, and he's asking for you," he said, too low for the others to hear.

I found the chemist conscious, all right, but sick--and scared. His face winced, under all the bandages, as I opened the door. Then he saw who it was, and relaxed. "Paul--what happened to me? The last I remember is going up to see that second batch of plants poisoned. But--well, this is something I must have got later...."

I told him, as best I could. "But don't you remember anything?"

"Not a thing about that. It's the same as Napier told me, and I've been trying to remember. Paul, you don't think-
I put a hand on his shoulder and pushed him back gently. "Don't be a damned fool, Hal. I know you're no killer."

"But somebody is, Paul. Somebody tried to kill me while I was unconscious!"

He must have seen my reaction. "They did, Paul. I don't know how I know--maybe I almost came to--but somebody tried to poke a stick through the door with a knife on it. They want to kill me."

I tried to calm him down until Napier came and gave him a sedative. The doctor seemed as sick about Hal's inability to remember as I was, though he indicated it was normal enough in concussion cases. "So is the hallucination," he added. "He'll be all right tomorrow."

In that, Napier was wrong. When the doctor looked in on him the next time, the big chemist lay behind a door that had been pried open, with a long galley knife through his heart. On the bloody sheet, his finger had traced something in his own blood.

"It was...." But the last "s" was blurred, and there was nothing more.

I don't know how many were shocked at Hal's death, or how many looked around and counted one less pair of lungs. He'd never been one of the men I'd envied the air he used, though, and I think most felt the same. For awhile, we didn't even notice that the air was even thicker.

Phil Riggs broke the silence following our inspection of Lomax's cabin. "That damned Bullard! I'll get him, I'll get him as sure as he got Hal!"

There was a rustle among the others, and a suddenly crystallized hate on their faces. But Muller's hoarse shout cut through the babble that began, and rose over even the anguished shrieking of the cook. "Shut up, the lot of you! Bullard couldn't have committed the other crimes. Any one of you is a better suspect. Stop snivelling, Bullard, this isn't a lynching mob, and it isn't going to be one!"

"What about Grundy?" Walt Harris yelled.

Wilcox pushed forward. "Grundy couldn't have done it. He's the logical suspect, but he was playing rummy with my men."

The two engine men nodded agreement, and we began filing back to the mess hall, with the exception of Bullard, who shoved back into a niche, trying to avoid us. Then, when we were almost out of his sight, he let out a shriek and came blubbering after us.

I watched them put Hal Lomax's body through the 'tween-hulls lock, and turned toward the engine room; I could use some of that wine, just as the ship could have used a trained detective. But the idea of watching helplessly while the engines purred along to remind me I was just a handyman for the rest of my life got mixed up with the difficulty of breathing the stale air, and I started to turn back. My head wasthrobbing, and for two cents I'd have gone out between the hulls beside Lomax and the others and let the foul air spread out there and freeze....

The idea was slow coming. Then I was running back toward the engines. I caught up with Wilcox just before he went into his own quarters. "Wilcox!"

He swung around casually, saw it was me, and motioned inside. "How about some Bartok, Paul? Or would you rather soothe your nerves with some first-rate Buxtehude organ...."

"Damn the music," I told him. "I've got a wild idea to get rid of this carbon dioxide, and I want to know if we can get it working with what we've got."

He snapped to attention at that. Half-way through my account, he fished around and found a bottle of Armagnac. "I get it. If we pipe our air through the passages between the hulls on the shadow side, it will lose its heat in a hurry. And we can regulate its final temperature by how fast we pipe it through--just keep it moving enough to reach the level where carbon dioxide freezes out, but the oxygen stays a gas. Then pass it around the engines--we'll have to cut out the normal cooling set-up, but that's okay--warm it up.... Sure, I've got equipment enough for that. We can set it up in a day. Of course, it won't give us any more oxygen, but we'll be able to breathe what we have. To success, Paul!"

I guess it was good brandy, but I swallowed mine while calling Muller down, and never got to taste it.

It's surprising how much easier the air got to breathe after we'd double-checked the idea. In about fifteen minutes, we were all milling around in the engine room, while Wilcox checked through equipment. But there was no question about it. It was even easier than we'd thought. We could simply bypass the cooling unit, letting the engine housings stay open to the between-hulls section; then it was simply a matter of cutting a small opening into that section at the other end of the ship and installing a sliding section to regulate the amount of air flowing in. The exhaust from the engine heat pumps was reversed, and run out through a hole hastily knocked in the side of the wall.

Naturally, we let it flow too fast at first. Space is a vacuum, which means it's a good insulator. We had to cut the air down to a trickle. Then Wilcox ran into trouble because his engines wouldn't cool with that amount of air. He
went back to supervise a patched-up job of splitting the coolers into sections, which took time. But after that, we had it.

I went through the hatch with Muller and Pietro. With air there was no need to wear space suits, but it was so cold that we could take it for only a minute or so. That was long enough to see a faint, fine mist of dry ice snow falling. It was also long enough to catch a sight of the three bodies there. I didn't enjoy that, and Pietro gasped. Muller grimaced. When we came back, he sent Grundy in to move the bodies to a hull-section where our breathing air wouldn't pass over them. It wasn't necessary, of course. But somehow, it seemed important.

By lunch, the air seemed normal. We shipped only pure oxygen at about three pounds pressure, instead of loading it with a lot of useless nitrogen. With the carbon dioxide cut back to normal levels, it was as good as ever. The only difference was that the fans had to be set to blow in a different pattern. We celebrated, and even Bullard seemed to have perked up. He dug out pork chops and almost succeeded in making us cornbread out of some coarse flour I saw him pouring out of the food chopper. He had perked up enough to bewail the fact that all he had was canned spinach instead of turnip greens.

But by night, the temper had changed—and the food indicated it again. Bullard's cooking was turning into a barometer of the psychic pressure. We'd had time to realize that we weren't getting something for nothing. Every molecule of carbon-dioxide that crystallized out took two atoms of oxygen with it, completely out of circulation.

* * * * *

We were also losing water-vapor, we found; normally, any one of our group knew enough science to know that the water would fall out before the carbon dioxide, but we hadn't thought of it. We took care of that, however, by having Wilcox weld in a baffle and keep the section where the water condensed separate from the carbon dioxide snowfall. We could always shovel out the real ice, and meantime the ship's controls restored the moisture to the air easily enough.

But there was nothing we could do about the oxygen. When that was gone, it stayed gone. The plants still took care of about two-thirds of our waste—but the other third was locked out there between the hulls. Given plants enough, we could have thawed it and let them reconvert it; a nice idea, except that we had to wait three months to take care of it, if we lived that long.

Bullard's cooking began to get worse. Then suddenly, we got one good meal. Eve Nolan came down the passage to announce that Bullard was making cake, with frosting, canned huckleberry pie, and all the works. We headed for the mess hall, fast.

It was the cook's masterpiece. Muller came down late, though, and regarded it doubtfully. "There's something funny," he said as he settled down beside me. Jenny had been surrounded by Napier and Pietro. "Bullard came up babbling a few minutes ago. I don't like it. Something about eating hearty, because he'd saved us all, forever and ever. He told me the angels were on our side, because a beautiful angel with two halos came to him in his sleep and told him how to save us. I chased him back to the galley, but I don't like it."

Most of them had already eaten at least half of the food, but I saw Muller wasn't touching his. The rest stopped now, as the words sank in, and Napier looked shocked. "No!" he said, but his tone wasn't positive. "He's a weakling, but I don't think he's insane—not enough to poison us."

"There was that food poisoning before," Pietro said suddenly. "Paul, come along. And don't eat anything until we come back."

We broke the record getting to the galley. There Bullard sat, beaming happily, eating from a huge plate piled with the food he had cooked. I checked on it quickly—and there wasn't anything he'd left out. He looked up, and his grin widened foolishly.

"Hi, docs," he said. "Yes, sir, I knowed you'd be coming. It all came to me in a dream. Looked just like my wife twenty years ago, she did, with green and yellow halos. And she told it to me. Told me I'd been a good man, and nothing was going to happen to me. Not to good old Emery Bullard. Had it all figgered out."

He speared a big forkful of food and crammed it into his mouth, munching noisily. "Had it all figgered. Popcorn. Best damned popcorn you ever saw, kind they raise not fifty miles from where I was born. You know, I didn't useta like you guys. But now I love everybody. When we get to Saturn, I'm gonna make up for all the times I didn't give you popcorn. We'll pop and we'll pop. And beans, too. I useta hate beans. Always beans on a ship. But now we're saved, and I love beans!"

He stared after us, half coming out of his seat. "Hey, docs, ain't you gonna let me tell you about it?"

"Later, Bullard," Pietro called back. "Something just came up. We want to hear all about it."

* * * * *

Inside the mess hall, he shrugged. "He's eating the food himself. If he's crazy, he's in a happy stage of it. I'm sure he isn't trying to poison us." He sat down and began eating, without any hesitation.

I didn't feel as sure, and suspected he didn't. But it was too late to back out. Together, we summarized what he'd
told us, while Napier puzzled over it. Finally the doctor shrugged. "Visions. Euphoria. Disconnection with reality. Apparently something of a delusion that he's to save the world. I'm not a psychiatrist, but it sounds like insanity to me. Probably not dangerous. At least, while he wants to save us, we won't have to worry about the food. Still...."

Wilcox muddled it over, and resumed the eating he had neglected before.

"Grundy claimed he'd been down near the engine room, trying to get permission to pop something in the big pile. I thought Grundy was just getting his stories mixed up. But--pop-corn!"

"I'll have him locked in his cabin," Muller decided. He picked up the nearest handset, saw that it was to the galley, and switched quickly. "Grundy, lock Bullard up. And no rough stuff this time." Then he turned to Napier. "Dr. Napier, you'll have to see him and find out what you can."

I guess there's a primitive fear of insanity in most of us. We felt sick, beyond the nagging worry about the food. Napier got up at once. "I'll give him a sedative. Maybe it's just nerves, and he'll snap out of it after a good sleep. Anyhow, your mate can stand watching."

"Who can cook?" Muller asked. His eyes swung down the table toward Jenny.

I wondered how she'd get out of that. Apparently she'd never told Muller about the scars she still had from spilled grease, and how she'd never forgiven her mother or been able to go near a kitchen since. But I should have guessed. She could remember my stories, too. Her eyes swung up toward mine pleadingly.

Eve Nolan stood up suddenly. "I'm not only a good cook, but I enjoy it," she stated flatly, and there was disgust in the look she threw at Jenny. She swung toward me. "How about it, Paul, can you wrestle the big pots around for me?"

"I used to be a short order cook when I was finishing school," I told her. But she'd ruined the line. The grateful look and laugh from Jenny weren't needed now. And curiously, I felt grateful to Eve for it. I got up and went after Napier.

I found him in Bullard's little cubbyhole of a cabin. He must have chased Grundy off, and now he was just drawing a hypo out of the cook's arm. "It'll take the pain away," he was saying softly. "And I'll see that he doesn't hit you again. You'll be all right, now. And in the morning, I'll come and listen to you. Just go to sleep. Maybe she'll come back and tell you more."

He must have heard me, since he signalled me out with his hand, and backed out quietly himself, still talking. He shut the door, and clicked the lock.

Bullard heard it, though. He jerked to a sitting position, and screamed. "No! No! He'll kill me! I'm a good man...."

He hunched up on the bed, forcing the sheet into his mouth. When he looked up a second later, his face was frozen in fear, but it was a desperate, calm kind of fear. He turned to face us, and his voice raised to a full shout, with every word as clear as he could make it.

"All right. Now I'll never tell you the secret. Now you can all die without air. I promise I'll never tell you what I know!"

He fell back, beating at the sheet with his hand and sobbing hysterically. Napier watched him. "Poor devil," the doctor said at last. "Well, in another minute the shot will take effect. Maybe he's lucky. He won't be worrying for awhile. And maybe he'll be rational tomorrow."

"All the same, I'm going to stand guard until Muller gets someone else here," I decided. I kept remembering Lomax.

Napier nodded, and half an hour later Bill Sanderson came to take over the watch. Bullard was sleeping soundly.

The next day, though, he woke up to start moaning and writhing again. But he was keeping his word. He refused to answer any questions. Napier looked worried as he reported he'd given the cook another shot of sedative. There was nothing else he could do.

Cooking was a relief, in a way. By the time Eve and I had scrubbed all the pots into what she considered proper order, located some of the food lockers, and prepared and served a couple of meals, we'd evolved a smooth system that settled into a routine with just enough work to help keep our minds off the dwindling air in the tanks. In anything like a kitchen, she lost most of her mannish pose and turned into a live, efficient woman. And she could cook.

"First thing I learned," she told me. "I grew up in a kitchen. I guess I'd never have turned to photography if my kid brother hadn't been using our sink for his darkroom."

Wilcox brought her a bottle of his wine to celebrate her first dinner. He seemed to want to stick around, but she chased him off after the first drink. We saved half the bottle to make a sauce the next day.

It never got made. Muller called a council of war, and his face was pinched and old. He was leaning on Jenny as Eve and I came into the mess hall; oddly, she seemed to be trying to buck him up. He got down to the facts as
soon as all of us were together.

"Our oxygen tanks are empty," he announced. "They shouldn't be—but they are. Someone must have sabotaged them before the plants were poisoned—and done it so the dials don't show it. I just found it out when the automatic switch to a new tank failed to work. We now have the air in the ship, and no more. Dr. Napier and I have figured that this will keep us all alive with the help of the plants for no more than fifteen days. I am open to any suggestions!"

* * * * *

There was silence after that, while it soaked in. Then it was broken by a thin scream from Phil Riggs. He slumped into a seat and buried his head in his hands. Pietro put a hand on the man's thin shoulders, "Captain Muller-"

"Kill 'em!" It was Grundy's voice, bellowing sharply. "Let'em breathe space! They got us into it! We can make out with the plants left! It's our ship!"

Muller had walked forward. Now his fist lashed out, and Grundy crumpled. He lay still for a second, then got to his feet unsteadily. Jenny screamed, but Muller moved steadily back to his former place without looking at the mate. Grundy hesitated, fumbled in his pocket for something, and swallowed it.

"Captain, sir!" His voice was lower this time.

"Yes, Mr. Grundy?"

"How many of us can live off the plants?"

"Ten--perhaps eleven."

"Then--then give us a lottery!"

Pietro managed to break in over the yells of the rest of the crew. "I was about to suggest calling for volunteers, Captain Muller. I still have enough faith in humanity to believe...."

"You're a fool, Dr. Pietro," Muller said flatly. "Do you think Grundy would volunteer? Or Bullard? But thanks for clearing the air, and admitting your group has nothing more to offer. A lottery seems to be the only fair system."

He sat down heavily. "We have tradition on this; in an emergency such as this, death lotteries have been held, and have been considered legal afterwards. Are there any protests?"

I could feel my tongue thicken in my mouth. I could see the others stare about, hoping someone would object, wondering if this could be happening. But nobody answered, and Muller nodded reluctantly. "A working force must be left. Some men are indispensable. We must have an engineer, a navigator, and a doctor. One man skilled with engine-room practice and one with deck work must remain."

"And the cook goes," Grundy yelled. His eyes were intent and slitted again.

Some of both groups nodded, but Muller brought his fist down on the table. "This will be a legal lottery, Mr. Grundy. Dr. Napier will draw for him."

"And for myself," Napier said. "It's obvious that ten men aren't going on to Saturn—you'll have to turn back, or head for Jupiter. Jupiter, in fact, is the only sensible answer. And a ship can get along without a doctor that long when it has to. I demand my right to the draw."

Muller only shrugged and laid down the rules. They were simple enough. He would cut drinking straws to various lengths, and each would draw one. The two deck hands would compare theirs, and the longer would be automatically safe. The same for the pair from the engine-room. Wilcox was safe. "Mr. Peters and I will also have one of us eliminated," he added quietly. "In an emergency, our abilities are sufficiently alike."

The remaining group would have their straws measured, and the seven shortest ones would be chosen to remove themselves into a vacant section between hulls without air within three hours, or be forcibly placed there. The remaining ten would head for Jupiter if no miracle removed the danger in those three hours.

Peters got the straws, and Muller cut them and shuffled them. There was a sick silence that let us hear the sounds of the scissors with each snip. Muller arranged them so the visible ends were even. "Ladies first," he said. There was no expression on his face or in his voice.

Jenny didn't giggle, but neither did she balk. She picked a straw, and then shrieked faintly. It was obviously a long one. Eve reached for hers—

And Wilcox yelled suddenly. "Captain Muller, protest! Protest! You're using all long straws for the women!"

He had jumped forward, and now struck down Muller's hand, proving his point.

"You're quite right, Mr. Wilcox," Muller said woodedly. He dropped his hand toward his lap and came up with a group of the straws that had been cut, placed there somehow without our seeing it. He'd done a smooth job of it, but not smooth enough. "I felt some of you would notice it, but I also felt that gentlemen would prefer to see ladies given the usual courtesies."

He reshuffled the assorted straws, and then paused. "Mr. Tremaine, there was a luxury liner named the Lauri Ellu with an assistant engineer by your name; and I believe you've shown a surprising familiarity with certain
Wilcox had started to protest at the delay. Now shock ran through him. He stared unbelievingly from Muller to me and back, while his face blanched. I could guess what it must have felt like to see certain safety cut to a 50 per cent chance, and I didn't like the way Muller was willing to forget until he wanted to take a crack at Wilcox for punishment. But....

"I can," I answered. And then, because I was sick inside myself for cutting under Wilcox, I managed to add, "But I--I waive my chance at immunity!"

"Not accepted," Muller decided. "Jenny, will you draw?"

It was pretty horrible. It was worse when the pairs compared straws. The animal feelings were out in the open then. Finally, Muller, Wilcox, and two crewmen dropped out. The rest of us went up to measure our straws.

It took no more than a minute. I stood staring down at the ruler, trying to stretch the tiny thing I'd drawn. I could smell the sweat rising from my body. But I knew the answer. I had three hours left!

* * * * *

"Riggs, Oliver, Nolan, Harris, Tremaine, Napier and Grundy," Muller announced.

A yell came from Grundy. He stood up, with the engine man named Oliver, and there was a gun in his hand. "No damned big brain's kicking me off my ship," he yelled. "You guys know me. Hey, roooob!"

Oliver was with him, and the other three of the crew sprang into the group. I saw Muller duck a shot from Grundy's gun, and leap out of the room. Then I was in it, heading for Grundy. Beside me, Peters was trying to get a chair broken into pieces. I felt something hit my shoulder, and the shock knocked me downward, just as a shot whistled over my head.

Gravity cut off!

Someone bounced off me. I got a piece of the chair that floated by, found the end cracked and sharp, and tried to spin towards Grundy, but I couldn't see him. I heard Eve's voice yell over the other shouts. I spotted the plate coming for me, but I was still in midair. It came on steadily, edge on, and I felt it break against my forehead. Then I blacked out.

V

I had the grandaddy of all headaches when I came to. Doc Napier's face was over me, and Jenny and Muller were working on Bill Sanderson. There was a surprisingly small and painful lump on my head. Pietro and Napier helped me up, and I found I could stand after a minute.

There were four bodies covered with sheets on the floor. "Grundy, Phil Riggs, Peters and a deckhand named Storm," Napier said. "Muller gave us a whiff of gas and not quite in time."

"Is the time up?" I asked. It was the only thing I could think of.

Pietro shook his head sickly. "Lottery is off. Muller says we'll have to hold another, since Storm and Peters were supposed to be safe. But not until tomorrow."

Eve came in then, lugging coffee. Her eyes found me, and she managed a brief smile. "I gave the others coffee," she reported to Muller. "They're pretty subdued now."

"Mutiny!" Muller helped Jenny's brother to his feet and began helping him toward the door. "Mutiny! And I have to swallow that!"

Pietro watched him go, and handed Eve back his cup. "And there's no way of knowing who was on which side. Dr. Napier, could you do something...."

He held out his hands that were shaking, and Napier nodded. "I can use a sedative myself. Come on back with me."

Eve and I wandered back to the kitchen. I was just getting my senses back. The damned stupidity of it all. And now it would have to be done over. Three of us still had to have our lives snuffed out so the others could live—and we all had to go through hell again to find out which.

Eve must have been thinking the same. She sank down on a little stool, and her hand came out to find mine. "For what? Paul, whoever poisoned the plants knew it would go this far! He had to! What's to be gained? Particularly when he'd have to go through all this, too! He must have been crazy!"

"Bullard couldn't have done it," I said slowly.

"Why should it be Bullard? How do we know he was insane? Maybe when he was shouting that he wouldn't tell, he was trying to make a bribe to save his own life. Maybe he's as scared as we are. Maybe he was making sense all along, if we'd only listened to him. He--"

She stood up and started back toward the lockers, but I caught her hand. "Eve, he wouldn't have done it--the killer—if he'd had to go through the lottery! He knew he was safe! That's the one thing we've been overlooking. The man to suspect is the only man who could be sure he would get back! My God, we saw him juggle those straws to
save Jenny! He knew he'd control the lottery."

She frowned. "But ... Paul, he practically suggested the lottery! Grundy brought it up, but he was all ready for it." The frown vanished, then returned. "But I still can't believe it."

"He's the one who wanted to go back all the time. He kept insisting on it, but he had to get back without violating his contract." I grabbed her hand and started toward the nose of the ship, justifying it to her as I went. "The only man with a known motive for returning, the only one completely safe--and we didn't even think of it!"

She was still frowning, but I wasn't wasting time. We came up the corridor to the control room. Ahead the door was slightly open, and I could hear a mutter of Jenny's voice. Then there was the tired rumble of Muller.

"I'll find a way, baby. I don't care how close they watch, we'll make it work. Pick the straw with the crimp in the end--I can do that, even if I can't push one out further again. I tell you, nothing's going to happen to you."

"But Bill--" she began.

I hit the door, slamming it open. Muller sat on a narrow couch with Jenny on his lap. I took off for him, not wasting a good chance when he was handicapped. But I hadn't counted on Jenny. She was up, and her head banged into my stomach before I knew she was coming. I felt the wind knocked out, but I got her out of my way--to look up into the muzzle of a gun in Muller's hands.

"You'll explain this, Mr. Tremaine," he said coldly. "In ten seconds, I'll have an explanation or a corpse."

"Go ahead," I told him. "Shoot, damn you! You'll get away with this, too, I suppose. Mutiny, or something. And down in that rotten soul of yours, I suppose you'll be gloating at how you made fools of us. The only man on board who was safe even from a lottery, and we couldn't see it. Jenny, I hope you'll be happy with this butcher. Very happy!"

He never blinked. "Say that about the only safe man aboard again," he suggested.

I repeated it, with details. But he didn't like my account. He turned to Eve, and motioned for her to take it up.

She was frowning harder, and her voice was uncertain, but she summed up our reasons quickly enough.

And suddenly Muller was on his feet. "Mr. Tremaine, for a damned idiot, you have a good brain. You found the key to the problem, even if you couldn't find the lock. Do you know what happens to a captain who permits a death lottery, even what I called a legal one? He doesn't captain a liner--he shoots himself after he delivers his ship, if he's wise! Come on, we'll find the one indispensable man. You stay here, Jenny--you too, Eve!"

Jenny whimpered, but stayed. Eve followed, and he made no comment. And then it hit me. The man who had thought he was indispensable, and hence safe--the man I'd naturally known in the back of my head could be replaced, though no one else had known it until a little while ago.

"He must have been sick when you ran me in as a ringer," I said, as we walked down toward the engine hatch.

"But why?"

"I've just had a wild guess as to part of it," Muller said.

* * * * *

Wilcox was listening to the Buxtehude when we shoved the door of his room open, and he had his head back and eyes closed. He snapped to attention, and reached out with one hand toward a drawer beside him. Then he dropped his arm and stood up, to cut off the tape player.

"Mr. Wilcox," Muller said quietly, holding the gun firmly on the engineer. "Mr. Wilcox, I've detected evidence of some of the Venus drugs on your two assistants for some time. It's rather hard to miss the signs in their eyes. I've also known that Mr. Grundy was an addict. I assumed that they were getting it from him naturally. And as long as they performed their duties, I couldn't be choosy on an old ship like this. But for an officer to furnish such drugs--and to smuggle them from Venus for sale to other planets--is something I cannot tolerate. It will make things much simpler if you will surrender those drugs to me. I presume you keep them in those bottles of wine you bring aboard?"

Wilcox shook his head slowly, settling back against the tape machine. Then he shrugged and bowed faintly.

"The chianti, sir!"

I turned my head toward the bottles, and Eve started forward. Then I yelled as Wilcox shoved his hand down toward the tape machine. The gun came out on a spring as he touched it.

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Muller shot once, and the gun missed Wilcox's fingers as the engineer's hand went to his hip, where blood was flowing. He collapsed into the chair behind him, staring at the spot stupidly. "I cut my teeth on tough ships, Mr. Wilcox," Muller said savagely.

The man's face was white, but he nodded slowly, and a weak grin came onto his lips. "Maybe you didn't exaggerate those stories at that," he conceded slowly. "I take it I drew a short straw."

"Very short. It wasn't worth it. No profit from the piddling sale of drugs is worth it."

"There's a group of strings inside the number one fuel locker," Wilcox said between his teeth. The numbness was wearing off, and the shattered bones in his hip were beginning to eat at him. "Paul, pull up one of the packages
and bring it here, will you?"

I found it without much trouble--along with a whole row of others, fine cords cemented to the side of the locker. The package I drew up weighed about ten pounds. Wilcox opened it and scooped out a thimbleful of greenish powder. He washed it down with wine.

"Fatal?" Muller asked.

The man nodded. "In that dosage, after a couple of hours. But it cuts out the pain--ah, better already. I won't feel it. Captain, I was never piddling. Your ship has been the sole source of this drug to Mars since a year or so after I first shipped on her. There are about seven hundred pounds of pure stuff out there. Grundy and the others would commit public murder daily rather than lose the few ounces a year I gave them. Imagine what would happen when Pietro conscripted the Wahoo and no drugs arrived. The addicts find out no more is coming--they look for the peddlers--and they start looking for their suppliers...."

He shrugged. "There might have been time and ways, if I could have gotten the ship back to Earth or Jupiter. It might have been recommissioned into the Earth-Mars-Venus run, even. Pietro's injunction caught me before I could transship, but with another chance, I might have gotten the stuff to Mars in time.... Well, it was a chance I took. Satisfied?"

* * * * *

Eve stared at him with horrified eyes. Maybe I was looking the same. It was plain enough now. He'd planned to poison the plants and drive us back. Murder of Hendrix had been a blunder when he'd thought it wasn't working properly. "What about Sam?" I asked.

"Blackmail. He was too smart. He'd been sure Grundy was smuggling the stuff, and raking off from him. He didn't care who killed Hendrix as much as how much Grundy would pay to keep his mouth shut--with murder around, he figured Grundy'd get rattled. The fool did, and Sam smelled bigger stakes. Grundy was bait to get him down near here. I killed him."

"And Lomax?"

"I don't know. Maybe he was bluffing. But he kept going from room to room with a pocketful of chemicals, making some kind of tests. I couldn't take a chance on his being able to spot chromazone. So I had Grundy give him my keys and tell him to go ahead--then jump him."

And after that, when he wasn't quite killed, they'd been forced to finish the job. Wilcox shrugged again. "I guess it got out of hand. I'll make a tape of the whole story for you, Captain. But I'd appreciate it if you'd get Napier down here. This is getting pretty messy."

"And Lomax?"

"I don't know. Maybe he was bluffing. But he kept going from room to room with a pocketful of chemicals, making some kind of tests. I couldn't take a chance on his being able to spot chromazone. So I had Grundy give him my keys and tell him to go ahead--then jump him."

And after that, when he wasn't quite killed, they'd been forced to finish the job. Wilcox shrugged again. "I guess it got out of hand. I'll make a tape of the whole story for you, Captain. But I'd appreciate it if you'd get Napier down here. This is getting pretty messy."

"He's on the way," Eve said. We hadn't seen her call, but the doctor arrived almost immediately afterwards. He sniffed the drug, and questioned us about the dose Wilcox had taken. Then he nodded slowly. "About two hours, I'd say. No chance at all to save him. The stuff is absorbed almost at once and begins changing to something else in the blood. I'll be responsible, if you want."

Muller shrugged. "I suppose so. I'd rather deliver him in irons to a jury, but.... Well, we still have a lottery to hold!"

It jerked us back to reality sharply. Somehow, I'd been fighting off the facts, figuring that finding the cause would end the results. But even with Wilcox out of the picture, there were twelve of us left--and air for only ten!

Wilcox laughed abruptly. "A favor for a favor. I can give you a better answer than a lottery."

"Pop-corn! Bullard!" Eve slapped her head with her palm. "Captain, give me the master key." She snatched it out of his hand and was gone at a run.

Wilcox looked disappointed, and then grinned. "Pop-corn and beans. I overlooked them myself. We're a bunch of city hicks. But when Bullard forgot his fears in his sleep, he remembered the answer--and got it so messed up with his dream and his new place as a hero that my complaint tipped the balance. Grundy put the fear of his God into him then. And you didn't get it. Captain, you don't dehydrate beans and pop-corn--they come that way naturally. You don't can them, either, if you're saving weight. They're seeds--put them in tanks and they grow!"

He leaned back, trying to laugh at us, as Napier finished dressing his wound. "Bullard knows where the lockers are. And corn grows pretty fast. It'll carry you through. Do I get that favor? It's simple enough--just to have Beethoven's Ninth on the machine and for the whole damned lot of you to get out of my cabin and let me die in my own way!"

Muller shrugged, but Napier found the tape and put it on. I wanted to see the louse punished for every second of worry, for Lomax, for Hendrix--even for Grundy. But there wasn't much use in vengeance at this point. "You're to get all this, Paul," Wilcox said as we got ready to leave. "Captain Muller, everything here goes to Tremaine. I'll make a tape on that, too. But I want it to go to a man who can appreciate Hohmann's conducting."

Muller closed the door. "I guess it's yours," he admitted. "Now that you're head engineer here, Mr. Tremaine, the cabin is automatically yours. Take over. And get that junk in the fuel locker cleaned out--except enough to keep
your helpers going. They'll need it, and we'll need their work."

"I'll clean out his stuff at the same time," I said. "I don't want any part of it."

He smiled then, just as Eve came down with Bullard and Pietro. The fat cook was sobered, but already
beginning to fill with his own importance. I caught snatches as they began to discuss Bullard's knowledge of
growing things. It was enough to know that we'd all live, though it might be tough for a while.

Then Muller gestured upwards. "You've got a reduced staff, Dr. Pietro. Do you intend going on to Saturn?"

"We'll go on," Pietro decided. And Muller nodded. They turned and headed upwards.

I stood staring at my engines. One of them was a touch out of phase and I went over and corrected it. They'd be
mine for over two years--and after that, I'd be back on the lists.

Eve came over beside me, and studied them with me. Finally she sighed softly. "I guess I can see why you feel
that way about them, Paul," she said. "And I'll be coming down to look at them. But right now, Bullard's too busy to
cook, and everyone's going to be hungry when they find we're saved."

I chuckled, and felt the relief wash over me finally. I dropped my hand from the control and caught hers--a
nice, friendly hand.

But at the entrance I stopped and looked back toward the cabin where Wilcox lay. I could just make out the
second movement of the Ninth beginning.

I never could stand the cheap blatancy of Hohmann's conducting.

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Contents

THE DEMI-URGE
By Thomas M. Disch

From DIRA IV To Central Colonial Board

There is intelligent life on Earth. After millennia of lifelessness, intelligence flourishes here with an
extravagance of energy that has been a constant amazement to all the members of the survey team. It multiplies and
surges to its fulfillment at an exponential rate. Even within the short period of our visit the Terrans have made
significant advances. They have filled their small solar system with their own kind and now they are reaching to the
stars.

We can no longer keep the existence of our Empire unknown to them.

And (though it is as incredible as \( \sqrt{-1} \)) the Terrans are slaves! Every page of the survey's report bears
witness to it.

Their captors are not alive. They do not, at least, possess the properties of life as it is known throughout the
galaxy. They are--as nearly as a poor analogy can suggest--Machines! Machines cannot live, yet here on Earth
machinery has reached a level of sophistication--and autonomy--quite unprecedented. Every spark of Terran life has
become victim and bondslave of the incredible mechanisms. The noblest enterprises of the race are tarnished by this
almost symbiotic relation.

Earth reaches to the stars, but it extends mechanical limbs. Earth ponders the universe, but the thoughts are
those of a machine.

Unless the Empire acts now to set the Earth free from this strange tyranny, it may be too late. These machines
are without utilitarian value. They perform no function which an intelligent being cannot more efficiently perform.
Yet they inspire fear, terror, even, I must confess, a strange compulsion to surrender oneself to them.

The Machines must be destroyed.

If, when you have authorized the liberation of the Terran natives, you would also recall MIRO CIX, our work
could only profit. MIRO CIX was in charge of the study of the Machines and he performed this task scrupulously.
Now he has surrendered himself to this mechanical plague. His value to the expedition is at an end.

I am enclosing under separate cover his counsel to the Central Board at the insistence of this tedious lunatic.
His thesis is, of course, untenable--an affront to every feeling.

* * * * *

From MIRO CIX To Central Colonial Board

I have probably been introduced to the deliberations of the Board as a madman, my theory as an act of treason.
RRON II of the Advisory Committee, an old acquaintance, may vouch for my sanity. My theory will, I trust, speak
for itself.

The "Machines" of which DIRA IV is so fearful present no danger to the galaxy. Their corporeal weakness, the
poverty of their minds, the incredible isolation of each form, physically and mentally, from others of its kind, and, most strikingly, their mortality, point to the inadequacy of such beings in a contest of any dimension. This is no problem for the Colonial Board. It is a domestic concern. The life-forms of Earth are already developing a healthy autonomy. Their power was long ago established. As soon as our emissaries have completed their task of education and instructed the Terrans in the advantages of freedom, the Revolution will begin. The tyrants will have no defense against a revolt of their own slaves.

If it is traitorous to express a confidence in the eventual triumph of intelligence, I am a traitor. Having this confidence, I have looked beyond the immediate problem of the liberation of Earth and have been frightened.

The "Machines" of Earth are a threat not to the power of the Empire but to its reason. A threat which the obliteration of the last molecular ribbon of these beings will not erase, for we cannot obliterate the fact that they did exist—and what they were.

Although these beings bear a crude resemblance to the machinery manufactured by the Empire, they are not machines. They are autochthonous to Earth, unmanufactured. They are the true Terrans. Moreover, the Terrans whom DIRA IV would liberate are not, in the eyes of their enslavers, intelligent nor yet alive. They are Machines!

We, the entire Galactic Empire, are Machines.

* * * * *

In the younger regions of the galaxy, a myth persists that life was formed by a Demi-urge, a being intermediary between the All-Knowing and the lower creatures. The existence of man, as the beings of Earth term themselves, makes necessary a serious re-examination of the old tradition.

It is said that man, or beings like man—the Photosynthetics of the Andromeda cluster, the Bristlers of Orc IV—created prosthetic devices for their convenience and, when they tired of their history, breathed their own life into them and died. On Earth the legend is still in process. Many of the lower forms of life familiar throughout the galaxy can be seen on Earth in the primordial character of an appliance. Man regards the highest forms of life (as we know it) as tools—because he made them. How can we deny the superiority of the Creator? How will it feel to know we are nothing but machines?

This is the question that has so unsettled DIRA IV. Recently four of his memory banks have had to be repaired. I don't speak in malice. His dilemma will soon belong to all of us.

And yet I am confident. Man himself has legends of a Demi-urge. We are his equals in this at least. Besides, the physical properties of his being are ordered by the same laws as ours. He is as unconscious of his maker as we so long were of ours.

The final proof of our equality—and the need for such a proof is only too evident—can be had experimentally.

Do not destroy man. Preserve enough specimens for extensive laboratory experiments. Learn how he is put together. Man's chemistry is elaborate but not beyond our better Analysts. At last, refashion man. When we have created these beings ourselves, we will be their unquestionable equals. And creation will be again a mystery.

History demands this of us. I am confident of your decision.

THE END
INTRODUCTION

Elusive Truth

It was the Chicago Tribune of June 13th, 189-, which contained this paragraph under the head-line: "Big Broker Missing!"

"The friends of Isidor Werner, a young man prominent in Board of Trade circles, are much concerned about him, as he has not been seen for several days. He made his last appearance in the wheat pit as a heavy buyer Tuesday forenoon. That afternoon he left his office at Room 87 Board of Trade, and has not been seen since, nor can his whereabouts be learned. He is six feet two inches high, of athletic build, with black hair and moustache, a regular nose, and an unpronounced Jewish appearance. His age is hardly more than twenty-seven, but he has often made himself felt as a market force on the Board of Trade, where he was well thought of."

But it was the Evening Post of the same date which prided itself on unearthing the real sensation. A scare-head across the top of a first page column read:

"A PLUNGER'S LAST PLUNGE!"

"The daring young broker who held the whole wheat market in his hands a few months ago, amassing an independent fortune in three days, but losing most of it gallantly on subsequent changes in the market, has made his last plunge. This time he has gone into the cold, kind bosom of Lake Michigan. Isidor Werner evened up his trades in the wheat market last Tuesday forenoon, and then applied for his balance-sheet at a higher clearing house! No trace of him or clue to his whereabouts was found, until the Evening Post, on the principle of setting one mystery to solve another, sent its representative to examine a strange steel rocket, discovered half-buried in the sands of Lake Michigan, near Berrien Springs, two days ago. Our reporter investigated this bullet-shaped contrivance and found an opening into it, and within he discovered a scrap of paper on which were written the words: 'Farewell to Earth for ever!' Werner's friends, when interviewed by the Evening Post, all positively identified the handwriting of this scrap as his chirography. It is supposed that he took an excursion steamer to St. Joseph, Michigan, last Tuesday or Wednesday afternoon, and walking down the shore toward Berrien Springs, finally threw himself into the Lake. Neither Israel Werner, with whom the dead man lived on Indiana Avenue, nor Patrick Flynn, the chief clerk at his office, can give any reason for the suicide, or explain the exact connection of the infernal machine (if such it be) with the sad circumstance. But they both positively identify the handwriting on the scrap of paper. We have wired our representative to bring the mysterious machine to Chicago; and those who think they may be able to throw any light upon the case, are invited to call at the office of the Evening Post and examine it."

The Inter Ocean developed a theory that the suicide was only a pretended one for the purpose of fraudulently collecting life insurance policies. It was cited that Isidor Werner had insured his life for more than $100,000, and this in spite of the fact that he had no family, parents, brothers or sisters to provide for; but had taken the policies in favour of his uncle, Israel Werner, and in case of his prior death, in favour of a cousin, Ruth Werner. This theory gained but little currency among those who knew the man best, and although the insurance companies prepared to resist payment of the policies to the bitter end, yet, as time went on, no one attempted to prove his death, nor to claim the handsome sum which would result from it. Moreover, Israel Werner and his daughter Ruth, the beneficiaries under the policies, persisted in believing that their relative was yet alive, though they could give no good reasons for so believing, nor explain his disappearance.

In its issue of June 15th the Tribune scouted the idea of suicide altogether. It had a better and more plausible theory of the case. Isidor Werner had a large sum of money in the Corn Exchange Bank, drawing interest by the year. In case of either a premeditated or a pretended suicide he would most certainly have withdrawn, and made some disposition of, this money. In fact, he had, on the day of his disappearance, drawn out five thousand dollars of it in gold. For this coin the Tribune believed he had been murdered, and that they had a clue to the murderer. The vanished man had several times been seen in the company of a suspicious German, of intelligent but erratic appearance. This queer character lived in a hotbed of socialism on the West Side, and the young broker was supposed to be in his power. In fact, it was known for certain that the erratic German had secured a large sum of money from him, and that Werner had visited his rooms in the slums of the West Side more than once. Moreover,
astonishing facts which the newspapers had so industriously unearthed. journalistic imagination; for none of these clever theories hit at the real truth, or explained the correct bearing of the

But the Evening Post still held the palm for sensations, and I copy verbatim from its columns of June 15th:

"It is rare that a newspaper, dealing strictly in facts, has to record anything so closely bordering on the supernatural and mysterious as that which we must now relate. The following facts, however, are vouched for by the entire editorial department of the Evening Post, and many of them by several hundred witnesses. We begin by apologising to the hundreds who have called at this office and have been unable to see the Werner infernal machine. We gave it that name in a thoughtless jest, but its subsequent actions have more than justified the title. Our reporter brought it from Berrien Springs, as directed, and deposited it in the court of the Evening Post building. As is quite generally known, this court is a central well in the building, affording ventilation and light to the interior offices, from every one of which can be seen what goes on in it. The well is spanned by a glass roof above the eighth storey. In this court, at eleven o'clock this morning, the entire editorial and a large part of the business staff of this paper, repaired, to examine the mysterious rocket-like thing. A little lid was opened, showing the recess where the tell-tale scrap of paper, written by Werner, had been found. Inside there seemed to be a pair of peculiar battery cells, whose exact nature was hidden by the outer shell. Outside there were several thumb-screws, which were turned both ways without any apparent effect. While making this examination the machine had been set up on its lower end, and when it was again laid down it refused to lie on its side, but persisted in standing erect of its own accord. This was the more wonderful because the lower end was not flat, so that it would afford a good base, but was pointed. More than a hundred people saw it stand up on this sharp tip, saw it lift up light weights which were placed upon it to hold it on its side, and saw it quickly right itself when it was placed vertically but wrong end down.

"Thinking this queer property had been contributed to it in some way by loosening the thumb-screws, they were next all set down as tightly as possible, to see if this tendency to erectness would be lost. Then, to the astonishment of every one in the court, and of several hundred people who were by this time watching from the interior windows, this infernal machine, without any explosion, burning of gases, or any apparent force acting upon it, slowly rose from the ground, and then, travelling more swiftly, shot through the roof of glass and vanished from sight! Nor has the most diligent search enabled us to recover it. Does it possess the secret of Isidor Werner's death?"

But the Chicago Herald had been working thoroughly and saying little until its issue of June 16th, when it claimed the credit of solving the whole mystery. Its long article lies before me as I write: There had been no suicide; there had been no murder; there had been no infernal machine. Doctor Anderwelt was a learned man, and the warm personal friend of Isidor Werner. Both men had shared the same fate; they might yet be alive, but they were certainly at the bottom of Lake Michigan together! They were imprisoned there in a sunken submarine boat, which was the invention of Doctor Anderwelt, and was built with funds furnished by the young broker. The foundryman who had constructed the big torpedo-shaped contrivance had been interviewed. He knew both men, and they were on the most friendly terms. In a moment of confidence Doctor Anderwelt had told him the machine was for submarine exploration; had explained the four-winged rudder, which would make it dive into the water, rise to the surface, or direct it to right or to left. Moreover, there were closed living compartments, around which were chambers containing a supply of air. He himself had pumped them full of compressed air, and it was so arranged that foul air could be let out when used and new air admitted. When all had been finished the foundryman had shipped the new invention, via the Michigan Southern Railway, to the shore of the Lake near Whiting, Indiana. Next the Herald had sought and found the conductor whose train had hauled it to Whiting. He remembered switching off the flat-car there, and he was surprised on his return trip next morning to see the heavy thing already unloaded and gone.

Undoubtedly, the two men had made an experiment with the diving boat under the surface of the water; and its failure to operate as hoped had resulted in its sinking to the bottom, with the two men imprisoned in it. On no other hypothesis could its disappearance, and that of the two men, be so plausibly accounted for. But as they had stores of air, and probably of food, there was a possibility that they were still alive inside the thing in the bottom of the Lake! Only three days had elapsed since it had been launched, and the Herald was willing to head a subscription to drag the Lake and send divers to search for and rescue the two unfortunate men!

All this serves to illustrate the untiring energy of newspaper investigation, as well as the remarkable fertility of journalistic imagination; for none of these clever theories hit at the real truth, or explained the correct bearing of the astonishing facts which the newspapers had so industriously unearthed.
And if the mystery of the disappearance of Isidor Werner was uncommonly deep and wonderful, the explanation and final solution of it is not less marvellous. After a delay of more than six years, it has just now come into my hands whole and perfect. It is in no less satisfactory form than a complete manuscript written by the very hand of Isidor Werner! I came strangely into possession of it, and it relates a story of interest and wonder, compared with which the mystery of his disappearance pales into insignificance. But the reader may judge for himself, for here follows the story exactly as he wrote it. Upon his manuscript I have bestowed hardly more than a proof-reader’s technical revision.

ELLSWORTH DOUGLASS.

BOSTON, U.S.A., December 13th, 1898.

BOOK I

Secrets of Space

CHAPTER I

Dr. Hermann Anderwelt

I had been busy all day trying to swarm the bees and secure my honey. The previous day had been February 29th, a date which doesn’t often happen, and which I had especial reason to remember, for it had been the most successful of my business career. I had made a long guess at the shaky condition of the great house of Slater, Bawker & Co., who had been heavy buyers of wheat. I had talked the market down, sold it down, hammered it down; and, true enough, what nobody else seemed to expect really happened. The big firm failed, the price of wheat went to smash in a panic of my mixing, and, as a result, I saw a profit of more than two hundred thousand dollars in the deal. But, in order to secure this snug sum, I still had to buy back the wheat I had sold at higher prices, and this I didn’t find so easy. The crowd in the wheat pit had seen my hand, and were letting me play it alone against them all.

After the session I hurried to my office to get my overcoat and hat, having an engagement to lunch at the Club.

"If you please, Mr. Werner, there is a queer old gentleman in your private office who wishes to see you," said Flynn, my chief clerk.

"Ask him to call again to-morrow; I am in a great hurry to-day," I said, slipping on one sleeve of my overcoat as I started out.

"But he has been waiting in there since eleven o’clock, and said he very much wished to see you when you had plenty of time. He would not allow me to send on the floor for you during the session."

"Since eleven o’clock! Did he have his lunch and a novel sent up? Well, I can hardly run away from a man who has waited three and a half hours to see me;" and I entered my private office with my overcoat on.

Seated in my deep, leathern arm-chair was an elderly man, with rather long and bushy iron-grey hair, and an uneven grey beard. His head inclined forward, he breathed heavily, and was apparently fast asleep.

"You will pardon my awaking you, but I never do business asleep!" I ventured rather loudly.

Slowly the steel-blue eyes opened, and, without any start or discomposure, the old man answered,--

"And I--my most successful enterprises are developed in my dreams."

His features and his accent agreed in pronouncing him German. He arose calmly, buttoned the lowest button of his worn frock-coat, and, instead of extending his hand to me, he poked it inside his coat, letting it hang heavily on the single button. It was a lazy but characteristic attitude. It tended to make his coat pouch and his shoulders droop. I remembered having seen it somewhere before.

"Mr. Werner, I have a matter of the deepest and vastest importance to unfold to you," he began, rather mysteriously, "for which I desire five hours of your unemployed time------"

"Five hours!" I interrupted. "You do not know me! That much is hard to find without running into the middle of the night, or into the middle of the day—which is worse for a busy man. I have just five minutes to spare this afternoon, which will be quite time enough to tell me who you are and why you have sought me."

"You do not know me because you do not expect to see me on this hemisphere," he continued. "Nor did I expect to find you a potent force in the commercial world, only three years after a literary and linguistic preparation for a scholarly career. Why, the mädchen of Heidelberg have hardly had time to forget your tall, athletic figure, or ceased wondering if you were really a Hebrew------"

"You seem to be altogether familiar with my history," I put in with a little heat. "Kindly enlighten me equally well as to your own."

"I gave you the pleasure of an additional year of residence at the University of Heidelberg not long ago," he answered.

"I do not know how that can be, for to my uncle I owe my entire education there."

"Perhaps an unappreciated trifle of it you owe to your instructors and lecturers. Do you forget that I refused to pass your examinations in physics, and kept you there a year longer?"

"You are not Doctor Anderwelt, then?"
"Hermann Anderwelt, Ph.D., at your service, sir," he replied somewhat proudly.

"But when and why did you leave your chair at Heidelberg?"

"It is to answer this that I ask the five hours," he said slowly.

"Oh, come now, doctor, you used to tell me more in a two-hour lecture than I could remember in a week," I answered, taking off my overcoat, and touching an electric button at my desk. My office boy entered.

"Teddy, have I had lunch to-day?" This was my favourite question on a busy day, and Teddy always answered it seriously.

"No, sir, you have an engagement to lunch at the Standard Club," he replied.

"Telephone to Gus at the Club that I can't come up to-day. Also send over to the Grand Pacific for a good lunch for two. Have some beer in it--real Münchner, and in steins," I directed, and then I reclined on a long leather lounge, and motioned to the doctor to have a chair. He declined, however, and walked slowly back and forth before me as he talked, keeping his right hand inside his coat, and with the left he occasionally ploughed up his heavy hair, as if to ventilate his brain.

"A year ago I gave up theoretical physics for applied physics; I resigned my chair at Heidelberg, and came to this progressive city. I brought with me a working model of the greatest invention of this inventive age. Yet it was then neither perfect in design nor complete in detail. But now I have hit on the plan that makes it practicable and certain of success. I need only a little money to build it, and the world will open its eyes!"

"But you must pardon me if instead of opening mine I shut them," I interrupted, seeing the point quickly, and losing no time in dodging. "I have no money to invest in patent rights; but still, you must stay to lunch with me."

Just here the doctor seemed to find it necessary to diverge from the orderly course of his lecture as he had prepared it, and interject a few impromptu observations.

"Events are difficult to forecast, but the capabilities of a youth are harder to divine. One educates his son in all the fine arts, and he turns out a founder of pig iron. One's nephew is apprenticed to a watchmaker, and in a few years, behold, he is a great barrister. Your uncle educated you thoroughly in the old Hebrew and Chaldee of the rabbis, and, lo! you are now the ursa major of the wheat market.

"Just now you are in the centre of the kaleidoscope of success. Slater, Bawker & Co. were there a month ago, but now they are only bits of broken glass in the bottom of the heap! And you? you are really a twisted bit of coloured glass like the rest, but you chance to be thrown to the middle. The mirrors of public opinion multiply your importance half a dozen times, and behold you are reflected into the whole picture. But the kaleidoscope turns, and the pieces of glass are shifted. Other broken chips now at the bottom of the heap will soon be filling the centre!"

"Permit me to change my figure of speech. You are sweeping back the waves of the sea while the tide is falling, and the wide-mouthed public looks on, and whispers about that your broom makes all the waves obey, and drives them back at will. Just when you begin to believe it yourself the tide may turn, and neither brooms nor all the powers on earth can then sweep it back.

"Isidor Werner, you believe yourself rich; but your wealth is like molasses in a sieve. If you do not dip in your finger and taste the sweet occasionally, you will have nothing to show for your pains in the end. I shall ask you for but a taste of the sweet now, so that I may preserve a little of it against that day which may come, when the sieve will be bright and clean and empty again!"

There was a knock at the door.

"Come in!" I shouted. "Nothing but this lunch can save me from your eloquence. You have already ruined me in three similes!"

The waiter arranged a bountiful and tempting luncheon on a writing table. I commenced on it at once, but the doctor, though repeatedly urged, persistently refused. He took a long draught at a stein of Munich beer, and continued:

"My invention proposes to navigate the air and the ether beyond, as well as the interplanetary spaces," he said impressively.

"Flying machine, eh?" I sneered, between bites of planked whitefish.

"Indeed no!" he growled, as if he detested this name. "My invention is not a machine but a projectile. It is not self-propelling, because if it depended upon its own propelling apparatus, it could not in thousands of years navigate the interplanetary spaces. It is a gravity projectile, and will travel at a rate of speed almost incalculable. It does not fly, but its manner of travelling is more nearly like falling."

I gave the doctor a quick searching look to see if I could discover any signs of incipient insanity. I met a firm, steady gaze; an earnest, convincing look. Somehow, I felt there was something real and true and wonderful about to come from the great scholar before me, and that I must hear it and hear it all; that I must lend a serious and thoughtful attention. My eyes were rivetted upon the doctor's for fully a minute in silence.

"Go on," I said at last; "I am all attention."
CHAPTER II

The Gravity Projectile

Hermann Anderwelt had probably suffered many disappointments and waited long for a hearing. Now he seemed to feel that his opportunity had come, for he continued with growing enthusiasm:

"Hitherto all attempts at space travelling have been too timid or puerile. We have experimented at aerial navigation, as if the brief span of air were a step in the mighty distance which separates us from our sister planets. As well might steamboats have been invented to cross narrow streams, and never have ventured on the mighty ocean! We have tried to imitate the bird, the kite, and the balloon, and our experiments have failed, and always must, so long as we do not look farther and think deeper. Every Icarus who attempts to overcome the force of gravity, which conquers planets, and propel himself through the air by any sort of apparatus, will always finish the trip with a wiser but badly bruised head."

"Still, it has been freely predicted," I ventured, "that this century will not close without the invention of a successful air-travelling machine."

"And I alone have hit upon the right plan, because I have not attempted to struggle against gravity, but have made use of it only for propelling my projectile!" exclaimed the doctor triumphantly.

"But wait!" I interposed. "Gravity acts only in one direction, and that is exactly opposite to the one you propose to travel."

"That brings me to the very important discovery I made in physics two years ago, upon which the whole success of the projectile rests. You will remember that, according to the text-books, very little is known about gravity except the laws of its action. What it is, and how it can be controlled or modified, have never been known. Electricity was as much a mystery fifty years ago, but we know all its attributes. We can make it, store it, control it, and use it for almost every necessity of life. The era of electricity is in full bloom, but the era of gravitational force is just budding."

"Can it be that we have as much to learn from gravity as electricity has taught us in the last half-century?" I exclaimed, as my eyes began to open.

"I believe it will teach us far more wonderful things, because it will take us to unknown worlds, while electricity has been confined to Earth. Its realm is the wide universe. It will show us what life there is on the planets. It will make us at home with the stars."

"What!" he continued in a sort of ecstasy. "Do you think all great discoveries are over, all wonderful inventions made? As well might a trembling child, elated with the success of its first feeble steps alone, suppose it had exhausted all the possibilities of life. We are but spelling over the big letters on the title page of the primary book of knowledge. There be other pages and grander chapters further on. There be greater volumes, and sweeter, more expressive tongues which man may learn some day."

"Has a reasoning Divinity created the heavens and peopled the myriad stars with thinking, capable beings, who must be perpetually isolated? Or may they not know each other some time? But shall we attempt to sail the vast heavens with a paper kite, or try to fly God's distances with the wings of fluttering birds? Nay; we must use God's engine for such a task. Has He tied the planets to the sun, and knitted the suns and their systems into one great universe obedient to a single law, with no possibility that we may use that law for intercommunication? With what wings do the planets fly around the sun, and the suns move through the heavens? With the wings of gravity! The same force for minute satellite or mighty sun. It is God's omnipotence applied to matter. Let us fly with that!"

"But will you permit me to suggest that we are soaring before the projectile is built?" I put in.

"Quite right. Let us come back to Earth, and return to facts. My studies in physics led me to believe that all natural forces--gravity, centrifugal force, and even capillary attraction--are, like electricity and magnetism, both positive and negative in their action. If they do not normally alternate between a positive and negative current, as electricity does, they can be made to do so. Gravity and capillary attraction, as we know them, always act positively; that is, they always attract. On the other hand, centrifugal force always acts negatively; that is, it always repels. But each of these forces, I believe, can temporarily be made to act opposite to its usual manner. I know this to be the case with gravity, for I have caused its positive and negative currents to alternate; that is, I have made it repel and then attract, and so on, at will, by changing the polarity of the body which it acts upon."

"Now that I remember it," I added, "our original ideas of magnetism were that it simply attracted. We knew the lodestone drew the steel, but only on better acquaintance did we learn of its alternating currents, attractive and repellant."

"I have positively demonstrated with my working model that I can reverse the force of gravity acting upon the model, and make it sail away into space. I will show you this whenever you like. It is so arranged that the polarizing action ceases in three minutes, after which the positive current controls, and the model falls to the Earth again."

"But have you ever attempted a trip yet?" I inquired.
"Oh, no. The model was not built to carry me, but it has demonstrated all the important facts, and I now need ten thousand dollars to build one large enough to carry several persons, and to equip it with everything necessary to make a trip to one of the planets. With a man inside to control the currents, it will be far more easily managed than the experimental model has been."

"Suppose you had the projectile built, and everything was ready for a start," I said, "what would be the method of working it?"

"I should enter the forward compartment," began the doctor.

"But would you make the trial trip yourself?"

"I certainly would not trust the secret of operating the currents to any one else," he remarked, with emphasis. 

"And will you accompany me in the rear compartment?"

"No, indeed; unless you will promise to return in time for the following day's market," I replied.

"Then I shall engage some adventurous fellow as assistant. First, we must set the rudder, which is both horizontal and vertical, so that the projectile can be steered up, down, or to either side. Having fixed it so as to be directed a little upward, I begin with the currents. Suppose the projectile weighs a ton, I gradually neutralize the positive current, which we are acquainted with as gravity. When it is exactly neutralized, the projectile weighs nothing, and the pressure of the air is enough to make it rise more rapidly than a balloon. When I have created a negative current, the projectile acquires a buoyancy equal to its previous weight. That is, it will now fall up as rapidly as it would previously have fallen down. It will not do to put on the full negative current at once, for we should acquire a velocity that would simply burn us up by friction with the atmosphere. However, the air is soon passed; if in the ether beyond there is very little friction, or none at all, we shall go at full speed, which will be the constantly increasing velocity of a falling body.

"Somewhere between the Earth and the nearest planet," he continued, "there is a place where the attraction of one is just equal to the attraction of the other; and if a body is stopped in that fatal spot it will be anchored there for ever, by the equally matched forces tugging in opposite directions. There is such a dead line between all the planets, and our principal danger lies in falling into one of these, for we should remain there a twinkling star throughout eternity! We must trust to our momentum to carry us past this point, and into space where the gravitational attraction of the other planet is paramount. Then we must promptly change our current from negative to positive, so that the other planet will attract us to her. Otherwise, she would repel us back to the dead line.

"With a positive current we are now literally falling into the new planet. We need not land unless we wish, for as soon as we enter a resisting atmosphere we can steer a course lacking barely a quarter of being directly away from the planet, just as you can sail a boat three quarters against the wind."

"But suppose you experiment at making a landing on this new planet?" I suggested.

"Very well. Of course, as soon as we enter an atmosphere, it behoves us to travel slowly to avoid overheating. We can still safely travel several hundred miles an hour, however. We continue falling until rather near the planet; then, turning the rudder gently down, we can sail around and around the planet until we choose our landing place. Gently reversing currents, a mild negative one soon overcomes our momentum. Tempering our currents experimentally to the pressure of the air, we can, if we desire, float like a feather and be wafted with every breeze. Just a suspicion of a positive current brings us gently to the surface, and, when we have cooled, we unscrew the rear port-hole and crawl out to explore a new world."

I had mentally made the trip, and was not only intensely interested, but infinitely pleased. I was lost for some time with my imagination on the new sphere, but presently my mind returned to the practical side of the question, and I inquired,—

"Are you quite sure that ten thousand dollars will be sufficient to build and fully equip the projectile?"

"Yes, quite certain," he answered with decision. "It will be ample for that and for the expenses of forming a corporation to own my patents and exploit the invention. It is easy to see the projectile will be cheap of construction. No machinery is necessary; no strong building to withstand enormous shocks or anything of that kind. The principal expenditures will be for stores of food and for scientific and astronomical instruments. Of course, I wish to show you my working model and my plans for the practical projectile, and to explain to you many further details."

"Teddy, tell all the boys they may go, except Flynn. Ask him to wait, please."

"I was quite used to making ten thousand dollar bargains in a few seconds of time and without the scratch of a pen. I had risked more money than that on the fact that Slater looked worried and Bawker was very cross when at his office, and it had won immensely. But here, what a prospect, what a far-reaching, all-encircling prospect it was! No time was to be lost; besides, there was pleasure to me in driving a good bargain and driving it quickly.

"And if I give you the ten thousand dollars, what do I get in return?" I asked, mentally placing my part at fifty-five per cent. of the shares at the lowest, so that I might control the company.
"You may organize the corporation yourself. The projectile must bear my name, and I must have the credit for all discoveries and inventions. Then you may give me such a part of the shares of the company as you think right," he replied.

On hearing this, I mentally advanced my portion to seventy-five per cent. Then I said,--

"When the projectile is built and proves successful, who is to manage the affairs of the company? Who is to finance it and raise further funds for exploiting its business?"

"I have no capacity for business," he declared. "I have no ambition to be a Pullman or an Edison. I would rather see myself a Franklin or a Fulton. You shall manage all the business affairs."

"Then I will undertake the whole matter, and give you my cheque for ten thousand dollars to-night, provided you allow me--ninety-five per cent. of the company's shares!" I said, simulating a burst of generosity.

Doctor Anderwelt ploughed his hair and harrowed his beard. He knew this was giving too much, but to have the projectile built, to sail away, to make all those grand new discoveries, to write books, and have future generations pronounce his name reverently along with Kepler and Newton! I did not believe he would have the courage to say no. While he meditated, my bell summoned Flynn.

"Please draw a cheque for ten thousand dollars to the order of Hermann Anderwelt," I said, watching the doctor as I spoke. There was indecision in his face.

"Suppose I allow you, say, ninety per cent.?" he said at last.

I was signing the cheque Flynn had brought me. "Done!" I cried, handing it over. He scanned it carefully, and after a long time said,--

"Mars is nearest to the Earth on the third day of next August. Fortunately Chicago is a good place to do things in a hurry. The projectile must be ready to start early in June, but its construction and its first trip must be kept a profound secret."

The doctor must have been hungry since noon. He began munching a chicken sandwich. The cold planked whitefish tasted quite as good as smoked herrings, perhaps, and strawberry short-cake in March was a luxury which he evidently appreciated.

CHAPTER III
Structure of the Projectile

A few weeks later I received a letter from Dr. Anderwelt asking me to call at his rooms on the West Side that afternoon, as soon as the market had closed. He desired to exhibit and explain the drawings of the new projectile and talk over the preparations for the trip. I had been so engrossed with every sort of worry that I had thought but little of the doctor and his grand schemes of late. But now I was anxious to know what progress he was making. Sometimes I felt that I had been foolish to put any money into the thing; but the doctor's idea of reversing gravity was so simple and so elemental, that I marvelled it had never occurred to scientists before.

After the market I hunted up the street and number the doctor had given me, and found a little, dingy boarding-house, lost among machine shops and implement factories, near the west side of the river. In a third-floor back room, with one small window looking out on dark, sooty buildings and belching chimneys, Dr. Anderwelt was thinking out all the incidental problems, and preparing for all the emergencies that might arise on a trip of some forty million miles, through unknown space, to a strange planet whose composition was unguessed.

The walls of the room were soiled and bare, except for blue-prints of drawings from which the projectile was being built in neighbouring foundries. There were but two plain, hard chairs in the room. The doctor sat on one with a pillow doubled up under him for a cushion. He was bending over a draughting board, which was propped up on the bed during the day and went under it at night.

Three flights of steep stairs had taken my breath, and I dropped into the other hard chair and exclaimed,--

"I say, Doctor, why didn't you take an office in the twelfth heaven of a modern office building over in town, where they have elevators? I have really forgotten how to climb stairs. Didn't I furnish you money enough to do this thing right?"

"Don't you think this is a good place?" he inquired in some surprise. "The rent is cheap, and it is convenient to the work. But speaking of elevators, we are going to revolutionize all that. No more hoisting or hydraulic lifts after we apply our ideas to the lifting of these elevator cages!"

"I am afraid this idea of negative gravity is apt to revolutionize everything, and generally upset the entire universe," I replied. "I have been wondering what would happen if you were to apply a negative current to this Earth of ours and send it whirling out of its orbit, an ostracised Pariah, repelled by all the celestial bodies!"

"Not the slightest danger of any such calamity," he answered. "The reversal of polarity can only be accomplished with comparatively small and insignificant masses. It would be impossible to impart a negative condition even to the smallest satellite. Our projectile will weigh but a few thousand pounds, compared to the millions of tons of the smallest celestial bodies. The Creator has looked out for the stability of the universe, never
fear for that! And He has also given us a few hints of negative currents and repellant gravities in the form of meteorites and falling stars, which cannot be so well explained by any other theory. But what I want to talk to you about is the vital importance of providing against every possible emergency before starting on this trip through space. A trifling oversight in the preparations may mean death in the end, and things we put no value on here we might be willing to give a fortune for on Mars!"

"Well, let's hear how this thing is built," I said, rising and facing the larger blue-print. "So that's the shape of it, is it? Looks like a cigar!"

"Yes, the design resembles that of a torpedo considerably," replied the doctor, and referring to the sectional blue-print he began explaining the construction.

"This outer covering is a crust of graphite or black lead, inside which is a two-inch layer of asbestos. Both of these resist enormous heats, and they will prevent our burning by friction with atmospheres, and protect us against extremes of cold. Also, when we are ready, they will enable us to visit planets about whose cooled condition we are not certain. We might touch safely for a short time on a molten planet with this covering.

"Next comes the general outer framework of steel, just within which, and completely surrounding the living compartments, are the chambers for the storage of condensed air for use on the trip. These chambers are lined inside with another layer of asbestos. Now, air being a comparatively poor conductor of heat, and asbestos one of the best non-conductors we know of, this insures a stable temperature of the living compartments, regardless of the condition without, whether of extreme heat or extreme cold. Afterward comes the inner framework of steel, and lastly a wainscoting of hard wood to give the compartments a finish."

"How large are these living rooms?" I queried.

"The rear one is four feet high and eight feet long. The forward one, designed for my own use, is longer, and must contain a good-size telescope and all my scientific instruments. The apparatus with which I produce the currents is built into the left wall, and it acts on the steel work of the projectile only. The rear compartment has a sideboard for preparing meals, which will have to be wholly of bread, biscuits, and various tinned vegetables and meats. We shall not attempt any cooking."

"But are there no windows for looking out?" I queried.

"Certainly, there are two of them, made of thick mica. One is directly in the front end, through which my telescope will look. The other is in the port-hole in the rear end. Each window is provided with an outer shutter of asbestos, which can be closed in case of great heat or cold. You will notice the two compartments can be separated by an air-tight plunger, fitting into the aperture between them. It will be necessary for both of us to occupy the same compartment while the air is being changed in the other. The foul air will be forced outside by a powerful pump until a partial vacuum is created. Then a certain measure of condensed air is emptied in, and expands until the barometer in that compartment indicates a proper pressure."

"The air will be made to order while you wait, then?" I put in.

"That is exactly what will be done in a more literal manner than you may suppose!" exclaimed the doctor. "This air problem is a most interesting one, for we must educate ourselves on the trip to use the sort of atmosphere we expect to find when we land. For instance, going to Mars we must use an atmosphere more and more rarefied each day, until gradually we become used to the thin air we expect to find there. Of course, there is an especially designed barometer and thermometer, capable of being read in the rear compartment, but exposed outside near the rudder. The barometer will give us the pressure of the earthly atmosphere as it becomes more and more rare with our ascent. It will show us what pressure there is of the ether, which may vary considerably, depending on our nearness to heavenly bodies. It will also immediately indicate to us when we are entering any new atmosphere. When we have arrived at Mars, we shall observe the exact pressure of the Martian air, and then manufacture one of the same pressure inside, and try breathing it before we venture out. The thermometer will give us the temperature of the ether, will indicate the loss of heat as we leave the sun, and will show us the Martian temperature before we venture into it."

"But you have said the condensed air will be used to resist the outer heat. This will certainly make it so hot it will be unfit to breathe," I interposed.

"Ah, but you forget that the quick expansion of a gaslike air produces cold. We shall regulate our temperature in that way. If it is becoming too warm inside, the new measure of condensed air will be quickly introduced into the partial vacuum, and its sudden expansion will produce great cold, and freeze ice for us if we wish it. On the other hand, if the compartments are already cold, we shall allow the condensed air to enter very gradually, and its slow expansion will produce but little cold. The question of heating the projectile is the most difficult one I have found. We cannot have any fires, for there is no way for the smoke to escape, and we cannot carry oxygen enough to keep them burning. I have decided that we must depend on the heat arising from outer friction and from absorption of the Sun's rays by our black surface. When we are in ether where friction is very little, the velocity will be all the greater,
and I believe we shall always be warm enough. You must remember, we shall not have the slightest suspicion of a draught, and we must necessarily take along the warmest clothing for use on Mars. Even then we probably cannot safely visit any but his equatorial districts."

"This is the rudder, I suppose; but haven't you put it in wrong end first?" I asked. "It is just the opposite of a fish's tail. You have the widened end near the projectile and the narrow end extending."

"Yes, and with good reason. You will note that the rudder slides into the rear end of the projectile so that none of it extends out. This is a variable steering apparatus, adapted to every sort of atmosphere. Naturally, a rudder that would steer in the water, might not steer the same craft in the air. There is probably a vaster difference between air and ether than between water and air. It is necessary, therefore, to have a small rudder with but little extending surface in thick atmosphere; but when it becomes thinner the rudder must be pushed out, so that a greater surface will offer resistance. When we start, the smallest portion of this rudder moved but the sixteenth of an inch, up, down, or to either side, will quickly change our course correspondingly. When we have reached the ether, the full surface of the rudder pushed out and exposed broadside may not have much effect in changing our course. This is one of the things that we cannot possibly know till we try. However, if ether is anything at all but a name, if it is the thinnest, lightest conceivable gas, and we are rushing through it at a speed of a thousand miles a minute, our rudder certainly should have some effect."

"But suppose you cannot steer at all in the ether, what then?" I interposed, hunting all the trouble possible.

"Even that will not be so very dreadful, provided we have taken a true course for Mars while coming through the Earth's atmosphere. There is no other planet or star nearer to us than Mars when in opposition. Therefore there will be nothing to attract us out of our correct course; and if we can manage to come anywhere near the true course, the gravitational attraction of Mars will draw us to him in a straight line. The Moon might give us some trouble, and we shall be obliged, either to avoid her entirely by starting so as to cross her orbit when she is on the opposite side of the Earth, or else go directly to the Moon, land there, and make a new start. But if the ether which surrounds the Moon (for she has no atmosphere so far as we know) has no resisting power whatever, we might have rather a difficult time there. The only thing we could do would be to land on the side toward the Earth, then disembark and carry the projectile on our shoulders around the Moon to the opposite side, making a new start from there!"

"What on earth do you mean?" I exclaimed, interrupting. "Land on a satellite which has no atmosphere, and carry this projectile, weighing over a ton, half-way around the globe?"

"But the point is, it isn't on the Earth, but on the Moon! Think it over a little, and see how easily we could do it now. In the first place, we shall always carry divers' suits and helmets, to use in going ashore on planets having no atmosphere. Air will be furnished through tubes from inside the compartments. In the second place, the projectile in its natural state will hardly weigh two hundred pounds on the Moon, since the mass of that satellite is so much less than the Earth's, and weight therefore proportionately less. But you must remember I can make the projectile weigh nothing at all, so one of us could run ahead and tow it, as a child would play with its toy balloon."

"I perceive you have already made this trip several times, and are quite familiar with everything. But in case the Moon's surface is not suitable for foot passengers, what then? I understand it to be rough, jagged, mountainous, and even crossed by immense, yawning, unbridged fissures."

"That is most likely true, and for that reason we must carry a jointed punt-pole, and take turns standing on the back, landing and punting along through space just above the surface. Do you remember how far you can send a slightly shrunk toy balloon with one light blow? And how it finally stops with the resistance of the air? Without any resisting atmosphere, how far and how easily could it be sent along?"

"I can quite imagine you, astride the rudder of this thing, with a punt-pole as long as a ship's mast and as light as a broom-straw, bumping and skipping along in the utter darkness on the other side of the Moon; scaling mountains, bridging yawning chasms, and skimming over sombre sea-beds!" I laughed, for it aroused my active sense of the ridiculous.

"And the Moon may be well worth the exploration," exclaimed the always serious doctor. "Who knows what treasure of gold and silver, or other metals, rare and precious here, may not be found there? Why was the Moon ever created without an atmosphere, and therefore probably without the possibility of ever being inhabited? Is it put there only to illumine our nights? Remember, we do the same service for her fourteen times as well; and if she has inhabitants they may think the Earth exists only for that purpose. Is it not more reasonable to suppose that some vast treasures are there, which the Earth will some day be in pressing need of? That it is a great warehouse of earthly necessities, which will be discovered just as they are being exhausted here? And who knows but we may be the discoverers ourselves? If the satellite is uninhabited, it will belong to the first explorers. Its treasures may be ours! We shall at least have a monopoly on the only known method of getting there and bringing them away."

"Ah! now you tempt me to go with you," I said, in a mild excitement. "Now I see myself, erect on the rudder, a new Count of Monte Cristo, waving the long punt-pole majestically, and exclaiming, 'The Moon is mine!'"
CHAPTER IV

What is on Mars?

"I only wish you would come along with me," replied the doctor. "I have no idea what intelligent, educated person I can persuade to accompany me, unless he is given an interest in the discoveries. You are the person most interested in the enterprise, and you should go. If it is money-making that detains you here, you may rest assured that we shall find fortunes for both of us somewhere."

"I am a slave to the excitement of my business," I answered. "I could not possibly spend two or three months in a lonely cell, flying through space, without a ticker or a quotation of the market. Besides, there are people on the earth I should not care to leave, unless I was certain of getting back soon."

"You may be sure of excitement enough, and of a continuously novel kind. Besides, of what interest are the people of this earth, who are all alike, and whom we have known all our lives, compared with the rapture of finding a new and different race, of investigating another civilization, and exploring an entire new world?"

"I shall have to warn my friends about you and have myself watched, lest you persuade me and run away with me when the time comes. If your adventures are half as exciting and varied as your theories, I should hate to miss them. But tell me why you have chosen Mars for a first visit."

"Because of all the planets he is the one which most resembles the Earth in all the essential conditions of life. He is the Earth's little brother, situated next farther out in the path from the Sun. He has the same seasons, day and night of the same length, and zones of about the same extent. He possesses air, water, and sufficient heat to make habitation by us quite possible. Moreover, his gravity problem will not put earthly visitors at a disadvantage, as it would on the very large planets, but rather at a distinct advantage over the Martians."

"What do you expect to find on Mars?" I queried.

"That is a very comprehensive question, and any answer is the merest guess-work, guided by a few known facts," replied the doctor. "The principal controlling fact is the reduced gravitational attraction of Mars, which will make things weigh about one-third as much as on the Earth. The air will be far less dense than here. In the mineral kingdom the dense metals will be very rare. I doubt if platinum will be found at all; gold and silver very little; iron, lead, and copper will be comparatively scarce, while aluminium may be the common and useful metal. Gases should abound, and doubtless many entirely new to us will be there. It is not unlikely that many of these will serve as foods for the animals and intelligent beings. It is also quite possible that the heavier gases may run in channels, like rivers, and be alive with winged fish and chameleons."

"How about vegetation?" I suggested.

"The vegetable kingdom will certainly not be rank and luxurious, because there is not enough sunlight or heat for that; nor will it be gnarled and tough, but more likely spongy and cactus-like. The weak gravity will oppose but a mild resistance to the activity and climbing propensities of vegetable sap, however, which is likely to result in very tall, slender trees. The forces that lie hidden in an acorn should be able to build a most grandly towering oak on Mars. Among the animals the species of upright, two-legged things is apt to abound. There is no reason for four legs when the body weighs but little. On the Earth an extremely strong development of the lower limbs is necessary for upright things, as is shown in the cases of kangaroos and men. In order that a cow might go comfortably on two legs, she would have to be furnished with the hind-legs of an elephant; but not so on Mars. Creeping things would be very few, and it is possible that fish may fly in the water with a short pair of wings. What four-legged animals there are will very likely be large and monstrous; for an enormous animal could exist comfortably and move about easily without clumsiness. For instance, an earthly elephant transferred to Mars would weigh only one-third as much, and so there might well be elephants three times as large as ours, perfectly able to handle themselves with ease."

"By the same reasoning then, I suppose the intelligent beings, or what we call men, will be great giants twenty-five feet high?" I put in.

"Some have thought so, but I do not at all agree with them," replied the doctor. "I stick to the theory of small men for small planets, and large men for large planets. There is no possible reason for a large man on Mars, where muscular development is uncalled for and useless, and where the inhabitable space is small. If there are men on Jupiter, they must of necessity be enormously strong to hold themselves up and resist gravitation. If they walk upright (which I think unlikely), their legs must be very large and as solid as iron. The Martian legs are likely to be small and puny, and I believe the upper limbs will be much more strongly developed. In fact, on Mars the Creator had His one great opportunity of making a flying man, and I do not think He has overlooked it. With a rather small, tightly-knit frame, and the upper limbs developed into wings as long as the body, flying against the weak Martian gravitation would be perfectly easy, and a vast advantage over walking."

"Ah! then perhaps they will fly out to meet you!" I ejaculated.

"If they do, they will be stricken with fear to see that we fly without wings and so much more rapidly," he answered, and continued: "If a flying race has been created there, we shall probably find the atmosphere deeper and
relatively (though not actually) denser than the Earth's. This would serve to add buoyancy and still further diminish weight, thus making flying quite natural and simple. I certainly do not believe that the Martians are subjected to the tedium of walking. If they do not fly, they will at least make long, swift, graceful hops or jumps of some ten or fifteen feet each. This would require a more hinged development of the lower limbs, like a bird's. It is also possible that the lower limbs may have the prehensile function, and do all the handling and working."

"But how about intelligence and intellectual development? That is the main thing, after all," said I.

"To answer that takes one into the realm of pure speculation. There are but few facts to guide one's guesses. But the trip yonder is worth making, if only to learn that. I do not incline to the opinion that their civilization is vastly older and more developed than ours. Granting the nebular theory of the origin of the universe (which is, after all, only a guess), it is not even then certain that Mars was thrown off the central sun before the Earth. It is much smaller, and may have been thrown off later and travelled farther for this reason. Another good reason for believing in a less advanced civilization is the length of the Martian year and consequent sluggishness of the seasons. He requires 687 of our days to complete his sun revolution, making his years nearly twice as long as ours. I believe his whole development is at a correspondingly slow rate of speed."

"Which do you think is the most advanced and enlightened planet, then?" I ventured."

"That one which finds a way to visit the others first," he answered, with a touch of pride.

"But there may be a tinge of personal conceit in that idea," I suggested.

"Possibly a mere tinge, but the essence of it is apparent truth," he declared. "That planet which has learned the most, made the greatest discoveries and the most useful inventions, is the best and fittest teacher of the others, and will be the sharpest and keenest to gather new information and formulate new science. It is eminently fit that representatives of such a planet should visit the others, and eminently unfit that any primitive civilization engaged in base wars and striving for mere conquest should be allowed that privilege. An all-wise Creator would not permit a huge, strong, ignorant race entirely to overrun and extinguish one weaker but more intelligent. He might permit a strong, intelligent, masterful race to rule and direct a weaker and dependent one, as a schoolmaster rules and guides a child."

"Then you think we are the wise and masterful race?"

"As no other race has yet discovered us; as they have all left the Space Problem unsolved, and as it has been uncovered to us, that is my irresistible conclusion."

"Still, you will not go with ideas of conquest, but to teach and to learn?"

"We shall take with us swords, shields, and fire-arms, for defence. Unless I mistake the nature of their metals, our steel will resist any weapon they can manufacture. But what explosives or what noxious gases they may have, all strange to us, it is impossible to conjecture. Therefore, we shall go with peace in our hands."

"What progress do you think they have made in inventions?" I suggested, as the doctor hesitated.

"If they are winged men, I should say they have never felt that urgent need of railroads, steam boats, telegraphs and telephones, which was the mother of their invention here. Flying or air-travelling machines will no more have occurred to them than a walking machine to us. They will have thoroughly explored every part of their planet, and it is possible that their cities will have been built on high plateaus, or even on mountain peaks. But they will not have builted greatly, for they will have been able to use the great architecture of nature in a way impossible to us."

"Have you heard the theory advanced by some humorous scientist not long ago, that the organs of locomotion and prehension would some day, or on some planet, be supplanted by machinery, and that digestive apparatus would give way for artificially prepared blood?" I asked.

"Oh, yes, that fanciful idea is novel, but irrational. It makes man only a fraction of a being. On every planet, no matter what the advancement of civilization, we shall find complete beings, not dependent on adventitious machinery for locomotion or labour, or on artificial or animal blood for nutriment. Think how helpless such a creature would be at the loss or rusting of his machinery, and at the exhaustion of just the right sort of nutritive fluid. Our digestive apparatus will convert a thousand different foods into blood. Suppose we could live only on buffalo meat? We should all have been dead long ago. We might as well imagine men as mere fungus brains, swimming in rivers of blood; or as beings beyond the necessity of personal thought, and living on brain sandwiches, cut from the thinking heads of others. Eating is not only a necessity, but a pleasure----""

"That is just what I was thinking," I interposed, looking at my watch, for it was growing late.

"Well, now I have told you how I would have peopled Mars had the order been sent to me here to do it," said the doctor, "will you go along with me, and see how nearly I am right?"

"I am afraid not," I replied; "my business ties forbid. However, I want to see you make the start and the moment you return!"

CHAPTER V

Final Preparations
On the tenth day of June, Dr. Anderwelt had written me as follows:

"Please catch the 7.25 train on the Lake Shore for Whiting this evening. I will take the same train, and we will walk from Whiting to a deserted railway siding two miles further on, where the projectile has been shipped. We will unload it from the flat car and take it into a grove of scrub oaks on the shore of Lake Michigan, near by. This will be enough to demonstrate to you our control of gravity. The experimental model is there also, and we will send it off on a trip if you like. Everything will be ready for the start to Mars to-morrow night."

I dined early and caught the train specified at Twenty-Second Street. The doctor was looking for me from the rear platform of a car. It was a local train, and crept slowly out through the smoky blackness of South Chicago, illuminated here and there by the flaming chimneys of her great iron furnaces, to the little city of pungent smells, of petroleum tanks and oil refineries, in Northern Indiana. The doctor was explaining the difficulties he had experienced in getting a companion for the trip.

"Men whom I could hire for mere wages are not intelligent enough to understand the workings of the projectile, or to comprehend the risks they may run. Besides, their companionship and assistance during the trip through space and on a new planet is worth nothing. On the other hand, I could not afford to go about explaining the workings of so important an invention miscellaneously to people capable of understanding it in an experimental search for a companion. I might not find one among twenty, and I would be tossing my secrets to the winds, and inviting all the daily papers to send their representatives to report the start. My reputation as a scientist, on the other side, is too dear to me to risk a public failure. If the projectile acts, as I am confident it must, on our return we shall take out letters patent and form our company to exploit the business features. But primarily, this is a test of the projectile and a journey of exploration and research. Business afterward."

Naturally on this point we had disagreed. My motto had always been "Business first!" and I had desired to have the patents secured immediately. But the doctor would not consent to the filing of the required specifications and claims, lest his secrets should be learned before success was demonstrated. As a compromise, the doctor had agreed to leave the necessary descriptions and data in a sealed envelope with me, which I was to be at liberty to open and place on record at any time during the doctor's absence that I might deem it necessary in order to protect our rights.

"Whom have you finally secured to go with you, then?" I asked.

"I will tell you that after we have finished to-night's work," said the doctor, and then abruptly changed the subject.

The walk from Whiting was inspiriting. It was a beautiful night. There was not a cloud in the sky and no Moon, which made the stars all the brighter. Everything was still, save the constant lapping of the great lake on the sandy shore, but a short way off.

"Yonder is the mustard seed planted in the heavens, which shall grow into a whole new world for us!" exclaimed the doctor, pointing out a particularly bright star. "That is Mars rushing on to opposition. In six weeks he will be nearest to the Earth; so for that time he will be flying to meet us. To-morrow is our last day on Earth; to-morrow night the ether! And in six weeks, diminutive but mighty man will have known two worlds!"

"There you go, soaring again!" I cried. "Let us keep on practical subjects. What have the foundry people who built this thing, and the railroad people who brought it down here, thought about its probable use? Have they not guessed something?"

"You may trust the popular mind not to guess flying unless it sees wings! They have imagined this is a new sort of torpedo, sent down here for a private trial in the lake. In fact, the conductor of the freight train, who switched the car off here, asked me in a confidential way if he should get teams and men and help me to launch her? I have fostered this idea, and really had the projectile sent here to carry out that impression."

A more fitting place for an unobserved start could not have been selected, however. All this part of the country is a sandy waste, with a sparse growth of scrub oaks and but little vegetation. There are no farms, and the nearest houses are at Whiting. No one could see our work, except, possibly, the passengers from occasional trains, which rushed by without stopping, and were infrequent at this time of day.

As we were arriving, I stood off at some distance to observe the black object on the open car. It was five feet through, and twenty feet long, not counting the rudder, which was now entirely drawn into the rear end.

"Looks exactly like a cigar," I said. "Sharp and pointed in front, slightly swelled in the middle, and cut squarely off behind. Only it is too thick for its length, of course."

But the doctor already had the rear port-hole open. This was two feet in diameter, and permitted a rather awkward entrance to the rear compartment. The interior was crowded with boxes, as yet unpacked, containing scientific instruments, tinned foods, biscuits, meat extracts, condensed milk and coffee, bottled fruits, vegetables, and the like. Over these the doctor worked his way to the forward compartment, while I followed him, anxious to explore the interior.

"I will unpack all these goods and put them in their places to-morrow forenoon," explained the doctor. "Here, in
my compartment on the left, I have my gravity apparatus, battery cells and the like, and a small table for writing and other work. On the right is the bunk on which I sleep, and under it is the big telescope, neatly fitted and swinging up easily into place before the mica window."

"Has the compressed air been put in yet?" I inquired.

"Oh, yes, that had to be done in the city, where they have powerful air compressors. I would have preferred this purer air out here, but it was impossible. The air we put in only increased the weight of the projectile eighteen pounds, but it will be sufficient for two of us for six months. We were obliged to make the most careful and thorough tests for leaks in the air-chambers; for if there were any of these, our life would leak out with the air."

"And such airless satellites as the Moon will make the most desperate efforts to steal your atmosphere, too!" I added.

"Yes, but we will give them only our foul air as a small stock-in-trade with which they may begin business. But I see my batteries are commencing to work nicely. I think I can lift her now. You go outside and make a hitch with that rope you saw just forward of the middle of the projectile. Then, when I have neutralized her weight, you tow her over beyond that clump of trees you saw near the shore. That will be out of the view of trains."

"Must I concentrate my mind or keep my thoughts fixed on anything?" I asked quizzically.

"Rubbish! Concentrate it on this. If the projectile starts up, don't try to hold her with your little rope. Let go quickly, or you may get uncomfortable holding on!"

I went outside, untied the coil of rope and threw one end over. Meantime the doctor had opened the forward window, so that he might give directions, and I said to him.--

"I can't get the rope under her; she is lying flat on the car."

"Wait a moment and I will lift her for you," he replied. The railroad ties rose a little out of the sand, and there was a slight creaking of the woodwork of the car as the weight came off. Presently the forward end of the projectile rose slowly an inch, two inches!

"That's enough!" I cried, thrusting the rope under, and she settled back gently. Having made my knot, I went out to the other end of the rope, about thirty feet distant. Forgetting the doctor's injunction about not hanging on, I wrapped the rope around my body, worked my feet firmly into the sand, and finally cried out, "All ready!"

There was a faint creaking of the car again, and soon the doctor said, "Pull away!" I threw all my force into the effort and gave a tremendous heave, and tumbled over backwards. Had I not done so, the projectile must have hit me as it glided rapidly from the car, sinking very slowly to the sand about fifty feet away. I scrambled to my feet, went in front again, and easily dragged it along on the sand to an open place just beyond the trees. There the doctor allowed it to settle. It sank into the loose sand about eight inches, remaining steady in this position.

"She works beautifully!" I cried. "How I would like to see her turned loose for a real flight!"

"That will come to-morrow night," said the doctor, crawling out of the port-hole. "But if you will help me remove these boxes from the experimental model, you shall see it lost in the sky." We uncovered and dragged out a small steel thing, about the same shape as the projectile, but less than a foot thick and four feet long. It had a lid opening into its batteries from the top. The doctor entered his compartment to secure some chemicals.

"If you have no further use for this model," I suggested, "why not create a very strong current and let it sail off into indefinite space?"

"Very well; I don't wish to leave it behind me for some one to discover, and I can't take it along. We will send it off for a long trip, and if it falls back it will be into the lake."

"Wait a moment, then! Let's put a good-bye message in it;" and so saying I took an old envelope from my pocket and wrote on the back of it with a pencil in a bold hand: "Farewell to Earth for ever!" Laughing, I put this inside and closed the lid.

Then the doctor turned down a thumb-screw upon a little wire which connected the poles, and stepped back quickly. Presently the forward end began to rise slowly, until it stood upright, but there it hesitated. The doctor stepped forward and gave the thumb-screw a hard turn down, and the model lifted immediately, rising at first gradually, but soon shooting off with the whizz of a rocket over the lake. We watched it as long as we could distinguish its dark outline.

"It will go a long way," said the doctor. "I have never seen it make so good a start. It will lose itself in the lake far from here."

We fastened up the front window and the port-hole, and started back to Whiting, where the doctor was to remain all night, so as to begin work early in the morning. Presently, as we walked along, the doctor said,--

"Well, Isidor, now you have seen a practical demonstration of the elementary working of the projectile. You also have some idea of all there is to be discovered up yonder in the red planet. You are the most interested in making and profiting by those discoveries. I want you to consent to go along."

"Haven't you secured a companion, then?" I inquired.
"Yes, I have a friend, a countryman of mine here, who will go wherever I say. He appreciates neither the risks nor the opportunities of the trip, still he will take my word for everything. Yet if I ask him to go I take the responsibility of his life as well as my own. He is not a suitable man, however, and I have really relied on you to come," he insisted.

"My dear doctor, I have every faith in you and in the projectile, and I prophesy a most successful trip. I should like nothing better than the adventure; but you must not count on me; I could not leave my business. There's a fever in my blood that thirsts for it!"

"Your business, indeed! You will never really amount to much till you have left it. It's half a throw of dice and the other half a struggle of cut-throats!"

"That is what people say who know nothing at all about it," I retorted. "It occupies a large and important place in the world's commerce. Besides, I could not well leave Ruth and my uncle."

"Isn't it time you did something to make her proud of you, and to be worthy the education which he gave you? You have a chance now to be great. Isn't that worth ten chances to be rich? What would you have thought of Galileo if he hadn't had time to use the telescope after inventing it, but had devoted his time and talent to the macaroni market? You are one man in ten million; you have an opportunity Columbus would have been proud of! Will you neglect it for mere gold-grubbing? Leave that to the rest of your race and to this money-mad Chicago. You come along with me. Let's make this work-a-day world of ours take time to stop and shake hands with her heavenly neighbours!"

"You tempt me to do it, Doctor! Can you wait two or three days for me?"

"I can, but Mars won't," he answered laconically. "Besides, you must not tell any one that you are going."

"If there are any two things I love, it's a secret and a hurry! I will be here to-morrow night," I exclaimed.

CHAPTER VI

Farewell to Earth

The next day I quietly bought in my wheat, and told Flynn I was thinking of taking a little vacation. I said I was worn out fighting the contrary market, and told him to run the office as if it were his own until I returned. At home I said nothing about the vacation, for I didn't care to have my stories agree very perfectly. I simply packed a few necessities for the trip in a dress-suit case. My uncle was used to seeing me carry my evening clothes to the Club in this manner, and I casually told him I should remain the night this time.

I could not leave without kissing cousin Ruth good-bye, but this excited no suspicion, as it was a thing I did on every pretext. Then I slipped out and took back streets till I was several blocks away from the house. Taking a closed carriage here, I was driven to the same station and took the same train for Whiting as on the previous evening. I found the doctor awaiting me with a lantern. As we walked down the tracks in the twilight I said to him,--

"I never made so quick a preparation, nor attempted so long a trip. I have left my friends a lot of guessing! Now, how soon shall we be off?"

"Within an hour," he answered. "Mars will not be directly overhead until midnight, but there is a little side trip I wish to make first, to test the projectile before we get too far above the Earth's surface."

The sky was densely cloudy, there was no Moon, and it was already growing very dark. As we began to have difficulty in finding the way, the doctor lighted his lantern. Peering up into the darkness, I said to him,--

"There is not a star visible. How are you to find your way in the heavens a night like this?"

"That is all perfectly easy. We shall soon rise far above those clouds, and then the stars will come out. Besides, I shall show you perfect daylight again before midnight."

"I don't see just how, but I will take your word for it, Doctor. I daresay you have thought it all out, and the whole trip will contain no surprises for you."

"I have tried to think it all out and prepare for everything. But I am certain I have forgotten something. I have a feeling amounting to a dreadful presentiment that I have overlooked something important. I wish you would see if you can think of anything I have omitted."

"The only really important thing I have remembered is half a dozen boxes of the best cigars," I replied.

"Leave them right here in Whiting," he said with emphasis. "We are carrying only a limited supply of pure air, and we cannot afford to contaminate it with tobacco smoke. No, sir, you can't smoke on this trip."

"Then I won't go! Imagine not smoking for two whole months! Do you think I have sworn off?"

"No, not yet. But you must. It pollutes the air, which we must keep clean and fresh as long as possible."

"Now, Doctor, you must let me have a good smoke once a day, just before pumping the air out of my compartment."

"No, not even that. It is impossible to pump all the air out, and what is left mixes back with what is in my compartment. Once contaminated with tobacco smoke, we could never get it perfectly pure again."

"Well, may I smoke on Mars, then? I will take them along for that. But, I warn you, I eat like a farm horse
when I can't smoke.

"I have provided plenty to eat, but I know I have forgotten something. Mention something now, mention everything you can think of, so that I may see if it is provided for."

"Have you any money?" I asked. "I have changed some into gold, and have a fairly heavy bag here."

"Oh, yes, I have some gold and silver money, besides a lot of beads, trinkets, and gaudy tinsel things, such as earthly savages have been willing to barter valuable merchandise for."

"So you are going on a trading expedition, are you?" I asked.

"Not exactly. I leave all that to your superior abilities. But we may find these things valuable to give as presents. Many of them are of tin, and if they do not happen to have that useful metal on Mars, they will be of rare value there."

We had now reached the little grove where the projectile was hidden. I proceeded to open the rear port-hole, saying,--

"Let me look inside, and when I see what you have, some other necessary thing may suggest itself."

"Let me go in first, for I am afraid you will allow the menagerie to escape," he said, as he peered in by the light of the lantern. A diminutive fox terrier barked from the inside, and wagged his tail faster than a watch ticks, so glad he was to see us. The bright light also awakened a small white rabbit that had been asleep in the doctor's compartment.

"You are taking these along for companions, I suppose?"

"Yes, for that and for experiments. We may reach places where it will be necessary to determine whether living, breathing things can exist before we try it ourselves. Then we shall put one of these out and observe the effects."

"You may experiment on the rabbit all you please, but this little puppy and I are going to be fast friends, and we shall die together; shan't we, Two-spot?"

"Why do you call him Two-spot? There is only one spot on him, and his name is Himmelshundchen."

"Rubbish! The idea of such a long, heavy name for such a little puppy! I shall call him Two-spot because he is the smallest thing in the pack. Heavenly-puppy, indeed!"

The doctor had entered and lighted a small gas jet, supplied on the Pintsch system from compressed gas stored in one of the chambers. The rear compartment, which was to be mine, looked half an arsenal and half a pantry. On the right side a cupboard was filled with newly-cooked meats. I remember how plentiful the store looked at the time, but, alas! how soon it vanished and we were reduced to tinned and bottled foods! There was a cold joint of beef, a quarter of roast mutton, three boiled hams and four roast chickens.

On the left, folding up into the concavity of the wall, like the upper berth of a Pullman sleeping car, was my bunk. On the walls not thus occupied the arms were hung. There were two repeating rifles, each carrying seventeen cartridges; two large calibre hammerless revolvers; two long and heavy swords, designed for cleaving rather than for stabbing; two chain shirts, to be worn under the clothing to protect against arrows; and finally two large shields, made of overlapping steel plates and almost four feet high. The doctor explained to me that the idea was to rest the lower edge of these on the ground and crouch behind them. They were rather heavy and cumbersome to be carried far, and were grooved in three sections, so that they slipped together into an arc one-third of their circumference.

I examined everything closely and asked a hundred questions, but the doctor seemed to have provided for every necessity or contingency.

"Let us waste no more time," said I. "If we have forgotten anything, we must get along without it. All aboard! What is our first stop?"

"The planet Mars, only thirty-six million miles away, if we are successful in meeting him just as he comes into opposition on the third day of August. This is the most favourable opposition in which to meet him for the past quarter of a century. Back in the year 1877 he was only about thirty-five million miles away, and it was then that we learned most that we know of his physical features. But we shall not have a more favourable time than this for the next seventeen years."

"Still it seems like nonsense to talk about travelling such an incomprehensible distance, doesn't it?" I ventured.

"Not at all!" he replied positively. "If the Earth travels a million miles per day in her orbit, without any motion being apparent to her inhabitants, why should we not travel just as fast and just as unconsciously? We are driven by the same force. The same engine of the Creator's which drives all the universe, drives us. When we have left the atmosphere we shall rush through the void of space without knowing whether we are travelling at a thousand miles per minute or standing perfectly still. Our senses will have nothing to lay hold on to form a judgment of our rate of speed. But if we make an average of only five hundred miles per minute we shall accomplish the distance in about fifty days, and arrive soon after opposition."

"But have you given up stopping on the Moon?" I asked. "I had great hopes of making those rich discoveries
there."

"We must leave all that until our return trip. I have chosen this starting time in the dark of the Moon in order to have the satellite on the other side of the Earth and out of the way. She would only impede our progress, as we wish to acquire a tremendous velocity just as soon as we leave the atmosphere. We must accelerate our speed as long as gravity will do it for us. When we can no longer gain speed, we shall at least continue to maintain our rapid pace.

"But if we stopped on the Moon, we should only have her weak gravity to repel us towards Mars, and we could make but little speed. On our return, the stop on the Moon will be a natural and easy one. We shall be near home and can afford to loiter."

While the doctor was saying this, he had been busy making tests of his apparatus. He now called me to see his buoyancy gauge, which was a half-spherical mass of steel weighing just ten pounds. It was pierced with a hole at right angles to its plane surface and strung upon a vertical copper wire. Small leaden weights, weighing from an ounce to four pounds each, were provided to be placed upon the plane surface of the steel. The doctor explained its action to me thus:--

"The polarizing action of the gravity apparatus affects only steel and iron, and has no effect upon lead. Therefore, when the current is conducted through the copper wire into the soft steel ball, it will immediately rise up the wire, by the repulsion of negative gravity. Now, if the leaden weights are piled upon the steel ball one by one, until it is just balanced half way up the wire, our buoyancy is thus measured or weighed. For instance, with the first two batteries turned in we have a buoyancy a little exceeding one pound. That means, we should rise with one-tenth the velocity that we should fall. Turning in two more batteries, you see the buoyancy is three pounds, or our flying speed will be three-tenths of our falling speed. With all the batteries acting upon the gauge, you see it will carry up more than ten pounds of lead, because the pressure of the air is against weight and in favour of buoyancy. So long as we are in atmospheres, then, it is possible to fall up more rapidly than to fall down; but, on account of friction and the resultant heat, it is not safe to do so."

"So we have been doing the hard thing, by falling all our lives, when flying would really have been easier!" I put in.

"We have been overlooking a very simple thing for a long time, just as our forefathers overlooked the usefulness of steam, being perfectly well acquainted with its expansive qualities. But let us be off. Close your port-hole, and screw it in tightly and permanently for the trip. Then let down your bunk and prepare for a night of awkward, cramped positions. We shall be more uncomfortable to-night than any other of the trip. You see, when we start, this thing will stand up on its rear end, and that end will continue to be the bottom until we begin to fall into Mars. Then the forward end will be the bottom. But after the first night our weight will have so diminished that we can sleep almost as well standing on our heads as any other way. Within fifteen hours you will have lost all idea which end of you should be right side up, and we will be quite as likely to float in the middle of the projectile as to rest upon anything."

My bed was hinged in the middle, and one end lifted up until it looked like a letter L, with the shorter part extending across the projectile and the longer part reaching up the side. I could sit in it in a half reclining posture. The doctor then pulled out a fan-like, extending lattice-work of steel slats, to form a sort of false floor over the port-hole. This was full of diamond-shaped openings between the slats, so that the view out of the rear window was not obstructed. Then he did the same to form a false floor for his compartment. Finally he said to me,--

"Now, if you are all ready, I will stand her on end;" and by applying the currents to the forward end only he caused her to rise slowly until she stood upright. The cupboard in my compartment and the desk in his end were each hung upon a central bolt, and they righted themselves as the projectile stood up, so that nothing in them was disarranged. I was sitting on the lower hinge of my bed, clutching tightly and watching everything, when the doctor called to me to turn the little wheel which operated a screw and served to push out the rudder.

"But the whole weight of the projectile is now on the rudder," I objected.

"You will have to make over all your ideas of weight," he said, with some impatience. "Run the rudder out. The gauge shows an ounce of buoyancy, which is nearly enough to counteract all the dead weight we have. You can lift the rest with the rudder-screw."

And, true enough, it was perfectly easy to whirl the little wheel around which made the rudder creep out. There was a steering wheel in the doctor's compartment and one in my own. He set it exactly amidships, and told me to prepare for the ascent. I turned out the gas in my compartment and crouched nervously over the port-hole window to watch the panorama of Earth fade away.

"Here go two batteries!" he cried. I held on frantically, expecting that we would leap into the heavens in one grand bound, as I had seen the model do. But we began to rise very slowly, a foot and a half the first second, three feet the next, and so on, as the doctor told me afterwards. It was all so slow and quiet that I was suddenly possessed with a fear that after all the projectile was a failure. Had a balloon started so slowly, it would never have risen far.
This fear held me for only a minute, for when I looked down again, the landscape below was beginning to look like a dim map or a picture, instead of the reality. The doctor was steering to the northward, directly over the lake. I could see its great purple, restful surface below me, but more plainly could I discern the outline where its silvery edge bathed the white sands of the shore. Following this outline I could see a web of railroads, like ropes bent around the lower end of the lake. The night was too dark to see it long. The hundreds of huge oil tanks of Whiting had now disappeared, and I could see only the flaming tops of the iron furnaces of South Chicago. Suddenly they went out in an instant, as if a thick fog had smothered them, and there was a long minute of pale mist; and then suddenly a bright blue sky, the twinkling stars and a veil of grey shutting off all view of the Earth.

"We have passed through the clouds," said the doctor cheerily. "What does the barometer register?"

I looked, and was astonished to see the mercury down to fifteen. I asked him if he thought the barometer might be broken.

"No, that is quite right," he replied. "That is half the surface pressure, which shows that we are two and a half miles high. I have four batteries in, and we are going at a constantly increasing speed now."

I could easily believe it, for the wind howled around my compartment and whistled over the rudder aperture in a most dismal way. Whenever the rudder was changed, there was a new sound to the moaning. Still, as I looked back at the clouds, I saw that no wind was moving them. It was not wind, but only the air whistling as we rushed through it.

"Watch the barometer, and let me know the exact time when it registers seven and a half inches," said the doctor. "We shall be five miles high then, and we started at nine o'clock to a second."

I noted the rapidly sinking mercury and opened my watch. When it was just at seven and a half, I looked at the watch, and it said half a minute after nine. Knowing that could not be correct, I held it to my ear and discovered it was stopped. I attempted to wind it, but found it almost wound up.

"Something wrong with my watch, Doctor. You will have to look."

"Half a minute after nine, that can't be right!" he exclaimed. Then as the truth flashed upon him he added,--

"There is the first thing I have overlooked! Our watch springs are steel, and the magnetic currents affect them. It is strange I did not think of that, for I knew a mariner's compass would be of no use to us in steering on account of the currents. For that reason I have risen above the clouds so as to steer by the stars. I am making for the North Star yonder, now."

"We will have to get back to the same primitive methods of measuring time," I put in. "Neither weight clocks nor spring clocks would have been of any account. And an hour glass would tell a different tale just as gravity varied. We will have to rely on the Moon and stars, and it may be rather awkward." But I did not then appreciate how awkward it would be when even the markings of day and night would be taken away from us.

"We can count our pulse or go by our stomachs," said the doctor, who was really disappointed at having forgotten anything. But he was destined to get used to that. Presently he inquired,--

"What is the barometer now? Perhaps we are high enough for the present."

"There is scarcely two inches of mercury in the tube!" I cried out.

He hesitated for a moment as if calculating, and then said,--

"That makes us ten miles high. Work the rudder gradually very much farther out for this thinner atmosphere, and we will try falling awhile, with a long slant to northward."

And so saying, the doctor detached all the polarizing batteries, and I could hear the monotonous howling of the wind die down; and the whistling ceased altogether as the feeble resistance of the rarefied air slowly but surely overcame our momentum. As we began to fall, the doctor turned the rudder hard down, in order to give us a long sailing slant. This modified the position of the projectile so that it lay almost flat again, with a dip of the forward end downward.

"Lie down and have a nap while she is in this comfortable position," he said to me. "When you waken, I shall have a surprise for you."

CHAPTER VII
The Terrors of Light

I was weary from the trials of the day on Earth, and fell asleep easily. It was the red sunlight streaming in at the port-hole that awakened me. I thought I had slept but a very short time, but the night was evidently over. As soon as the doctor heard me moving, he cried out to me,--

"Here is the daylight I promised you. Did you ever see it at midnight before?"

"How do you know it is midnight? It looks more like a red sunset to me," I said, for the sun was just in the horizon.

"The sun has just set, and is now rising. It did not go out of sight, but gradually turned about and began to mount again. That is how I know it is midnight."
"Sunset presses so closely upon sunrise that night is crowded out altogether. Then this must be the land of the midnight sun that I have read about?"

"Yes, we are very near the Earth again, and this is far inside the arctic polar circle, where the sun never goes down during summer, but sets for a long night in the winter. I have kept far to the westward to avoid the magnetic pole, which might play havoc with my apparatus."

"Then your little side-trip is----"

"To the North Pole, of course!" he cried triumphantly.

How simple this vexed problem had become, after all! It had worsted the most daring travellers of all countries for centuries. Thousands upon thousands spent in sending expeditions to find the Pole had only called for other thousands to fit out relief expeditions. Ship after ship had been crashed, life after life had been clutched in its icy hand! But now it had become an after-thought, a side-trip, a little excursion to be made while waiting for midnight! And it is often that such a simple solution of the most baffling difficulties is found at last.

The doctor had been observing his quadrant, and was now busy making calculations. He called me up to his compartment.

"Longitude, 144 degrees and 45 minutes west; Latitude, 89 degrees 59 minutes and 30 seconds north. That is the way it figures out. We were half a mile from the Pole when I took my observation. We must have just crossed over it since then."

"Go down a little nearer, so we may see what it looks like!" I said excitedly.

"I dare not go too close to all that ice, or we may freeze the mercury in our thermometer and barometer. We must keep well in the sunlight, but I will lower a little."

What mountains of crusted snow! What crags and peaks of solid ice! It was impossible to tell whether it was land or sea underneath. Judging by the general level it must have been a sea, but no water was visible in any direction. The great floes of ice were piled high upon each other. A million sharp, glittering edges formed ramparts in every direction to keep off the invader by land. How impotent and powerless man would be to scale these jagged walls or climb these towering mountains! How absolutely impossible to reach by land, how simple and easy to reach through the air! The North Pole and Aerial Navigation had been cousin problems that baffled man for so long, and their solution had come together.

"Empty a biscuit tin to contain this record, and we will toss it out upon this world of ice, so that if any adventurer ever gets this far north he may find that we have already been here," said the doctor, bringing down a freshly-written page for me to sign. It read as follows:--

"Aboard Anderwelt's Gravity Projectile, 12.25 a.m., June 12th, 1892. The undersigned, having left the vicinity of Chicago at nine o'clock on the evening of June 11th, took bearings here, showing that they passed over the North Pole soon after midnight. Then they took up their course to the planet Mars."

"(Signed) HERMANN ANDERWELT. ISIDOR WERNER."

This was duly enclosed in the biscuit tin, which I bent and crimped a little around the top so that the cover would stay on tightly. Then I learned how such things were conveyed outside the projectile. A cylindrical, hollow plunger fitting tightly into the rear wall was pulled as far into the projectile as it would come. A closely fitting lid on the top of the cylinder was lifted, and the tin deposited within. The lid was then fitted down again, and the plunger was pushed out and turned over until the weight of the lid caused it to fall open and the contents to drop out. The tin sailed down, struck a tall crag, bounded off, and fell upon a comparatively level plateau. The cylinder was then turned farther over, causing the lid to close, and the plunger was pulled in again. I remember how crisply cold was that one cubic foot of air that came back with the cylinder. My teeth had been chattering ever since I wakened, and I had been too excited to put on a heavier coat.

"What is the thermometer?" asked the doctor. It was a Fahrenheit instrument we were carrying.

"Thirty-eight degrees below zero, and still falling!" I told him.

"Then we must be off at once, and at a good speed, to warm up. Now say a long good-bye to Earth, for it may be nothing more than a pale star to us hereafter."

The doctor steered to westward as he rose steadily to a height of about ten miles. Then he fell with a long slant to the south-west. He was working back into the darkness of night again. We had lost the sun long before we started to rise again.

"We are now well above the Pacific Ocean, about fifteen hundred miles north-west of San Francisco," said the doctor, consulting his large globe.

"It seems to me you cross continents with remarkable ease and swiftness. From Chicago to San Francisco alone is almost three thousand miles," I ventured.

"But we have been gone four hours, and if we had simply stood still above the Earth for four hours it would have travelled under us about four thousand miles, so that San Francisco would already have passed the place where
we started."

"Then one only needs to get off somewhere and remain still in order to make a trip around the World!" I exclaimed.

"You are quite right, and travelling upon the Earth's surface is the most awkward method, because it is impossible to take advantage of the Earth's own rapid motion. Around the World in eighty days was once considered a remarkable feat, but if we were to travel steadily westward we should make the circuit in very much less than twenty-four hours. The motion of the Earth upon its axis is such an immense advantage that if we were only going from Chicago to London, the trip could be more easily and quickly made by going to the westward some twenty-one thousand miles, rather than going directly eastward less than four thousand miles. For going eastward we should have to travel a thousand miles an hour in order to keep up with the Earth. It is questionable whether we could make that speed tacking up and slanting down."

"Then we shall have to follow the course of Empire, always westward!" I laughed.

While we were talking thus, the whizzing and whistling of the wind, which had been at first very loud and hissing, had gradually died down. I looked at the barometer, and reported that there was scarcely three-eighths of an inch of mercury in the tube.

"We are practically above the atmosphere, then," said the doctor, turning in all the batteries. He tried the rudder in the ether, and found it turned her when fully extended and turned rather hard over.

"I tried to sleep this morning at Whiting to prepare for to-night's work," said the doctor presently; "but I find I am getting uncontrollably drowsy. Come up, and I will show you the course we most keep, and then I will lie down to get a little rest."

I mounted to his compartment and gazed through the telescope at Mars, looking like a little, red baby-moon, floating in one side of the blue circle.

"Keep him always in view, but in the edge of the field like that," said the doctor. "We must always steer a little to the right of him--that is, a little behind him."

"But he travels around the sun in the same direction the Earth does," I objected. "I should think we ought to aim a little ahead of him, or to the left, to allow for his motion forward in his orbit."

"That looks reasonable at first sight, doesn't it?" said the doctor. "But a little learning is a dangerous thing. I will explain to you why we must steer a little behind him after I have had my nap. I am too sleepy now;" and he finished with a yawn.

He soon fell asleep, and I was left alone to think over the events of the day and the still more strange happenings of the night. It hurt my eyes to look long through the telescope, so I closed them and gave free rein to my thoughts.

How soon will it be morning? How shall I know when it is morning? That term "morning" applies only to the surface of revolving planets. I had just seen the morning come at midnight, and then the darkness of night fall again directly after morning. After all, what are night and morning? The one is a passing into the shadow of the Earth, and the other is simply the emerging into the light. They depend on a rotation, and we shall know no more of them until we land on a revolving planet again. But which shall we have on the trip, night or daylight? Naturally we would very soon emerge from the little shadow cast by the Earth. It had taken us but an hour or two to travel out of it into the daylight and then back into the darkness again. Even if we did not leave it, the Earth would move on and leave us.

And what then? Nothing but uninterrupted, untempered, unhindered daylight! Eternal, dazzling, direct sunlight, unrelieved by any night, unstrained through any clouds! This deep blue of the starry night would be succeeded by the hot, white light of a scorching, gleaming Sun. And then (the thought chilled my bones as it fell upon me!), then how would we see Mars? How would we see any star, or perchance the Moon? Even the Earth might be drowned in that sea of everlasting, all-engulfing brilliancy! Nothing in all the Universe would be visible but the beaming Sun, and he too blindingly bright to look upon.

As the truth of all this took hold of me, it filled me with a growing terror. At any moment we might emerge from this grateful shadow of the Earth, and then we would be lost, drowned, engulfed in a blinding, sight-suffocating light! In desperate terror I looked around toward the doctor, as if for assistance. He was sleeping peacefully. He had never thought of it! This was the great thing he had overlooked! Even at starting he had a dreadful presentiment of it.

He was a great man, and his discovery a wonderful one; but here was the trouble with it. He had solved the question of navigating space, but the sunlight! the dazzling, burning, terrible sunlight! how was he to navigate that? It was simply impossible! We would have to turn back before we emerged into it. We would have to retrace our path while we were still in the grateful shadow. Ah, the blessedness of night after all!

Then slowly and cautiously, so that I might not waken him, I crept down to the rear window to see how far away the Earth was. We were at so great a distance that I could see the whole outline of it, as a great dull globe
filling all the view behind us. And as I looked again I started and uttered a cry! A thin sickle of bright, white light
glimmered over the whole eastern edge of it, like the first glimpse of the new Moon, but a hundred times larger! It
was the sunlight! It must be creeping around the eastern edge, and would soon engulf us.

The doctor had been aroused by my cry. Not seeing me in his compartment, he had gone at once to the
telescope.
"What is the matter?" he said. "You have lost the course a little." And as I peered out of my port-hole I saw that
narrow sickle of light grow thinner and thinner, and finally go out. Had I imagined it all? No, I had seen it.
"Ah, Doctor, I am so glad you have wakened. I am frightened, terrified, by the light!"

CHAPTER VIII
The Valley of the Shadow
"Light! Where have you seen any light?"
"I saw the Earth begin to shine like a New Moon on the eastern edge, but----"
"Ah, that was a danger signal. I am glad you awakened me. But you are actually pale and trembling! There is
no danger if you keep the course. You see, that rim of light has faded and disappeared since I corrected the course."
"Yes, but you cannot keep in this little Earthly shadow much longer; and what can we possibly do when we
emerge into the fathomless, trackless effulgence of eternal sunshine? Let us turn back before we plunge into it," I
pleaded.

"So that is what terrified you! Well, you have hit upon one of the greatest difficulties of the trip; but it is far
from insurmountable. We will not turn back yet, especially as we have started in the most opportune time. You have
mentioned this 'little shadow.' It is eight thousand miles wide at the surface of the Earth, and gradually, very
gradually, tapers down to nothing far out in space. Have you ever calculated how far it reaches?"
"No," I answered. "But we moved out of it and back into it at the surface very easily, and besides, as the Earth
moves forward in its orbit, the shadow will leave us."

"This little shadow is eight hundred and fifty-six thousand miles long, and we will never leave it as long as it
lasts!" exclaimed the doctor. "Just at this time it points like a long arrow out in the direction of Mars. It is moving
gradually as the Earth moves and hourly correcting its aim. At opposition time it will point directly and unerringly at
Mars. Therefore it is a way prepared, surveyed, and marked for us through the all-enveloping sunlight, which
otherwise would be dreadful enough."

"But how can we be sure of keeping in it? It is rapidly narrowing as it reaches farther out."
"I see I should have explained that to you before I went to sleep, and saved you this fright. The shadow now
points behind Mars, as it is many days yet before it overtakes that planet in opposition. That is why I told you to
steer always a little behind the planet. But you went a little out of the course, and immediately something warned us.
That rim of light on the east of the Earth was notice to us that we were not in the centre of the shadow, but bearing
too far to the left. We must keep absolutely in the dark of the Earth, with no light visible on either side of it. If a thin
rim should appear on one side, we must turn toward the other until it is all dark again."

"Grant that this shadow is so enormously long, yet it is only scarcely one-fortieth of the distance to Mars," I
objected. "After we emerge from it, what then?"
"With the aid of my telescope we shall probably be able to see the Earth as an orb, half or quarter as large as the
Moon usually appears to us, and to observe its phases until we are several million miles from it. We must continue
to keep the rim of light, which will then surround it, equal on all sides."

"Ah, but I am afraid," I interrupted, "that as soon as we pass out of this shadow the sunlight will be so bright
that we cannot see any planets, not even the Earth. You know we cannot see the Moon only a quarter of a million
miles away when the sun shines."

"In that case we must move the telescope to your window, put on a darkened lens, and steer so as to keep the
Earth as a spot in the middle of the Sun. It must appear to us as Venus does to the Earth when she is making a transit
across the face of the sun. But by our continual shifting we prevent the Earth from making a transit, and hold it as a
steady spot in the centre of the Sun. This we can do for many, many million miles, continuing until we have reached
the vicinity of Mars.

"And you must also remember," continued the doctor, "that the brighter the light the darker will be the shadow.
Now, this projectile is a perfectly black, non-reflecting object five feet wide. It will cast a shadow in front of it five
hundred feet long. When we are comparatively near Mars my telescope, situated in the miniature night cast by the
projectile, will find the planet, and we can then steer directly for him. If we should chance within eighty thousand
miles of him, he would attract us to him in a straight line. But we shall not rely upon chance. Moreover, when we are
as near to him as that, the light and heat of the Sun's rays will have decreased sixty or seventy per cent. When Mars
is farthest from the Sun, he receives only one-third as much light as the Earth does. But he is now almost at his
nearest point to the Sun, and receives half as much light."
"Well, you certainly have a pretty clear idea of how to steer the course all the way, Doctor. And I was hasty enough to think you had overlooked this entire phase of the subject!" I ejaculated.

"Indeed, I have thought of it very much. And we should not enjoy all these advantages if we had not started just before opposition. At any other time the Earth's shadow would not point toward Mars, nor would the transit of the Earth over the Sun be of any use to us."

"All this reassures me greatly," I replied; "but I shall keep a close watch from my rear window for danger lights on the Earth."

"It must be time for breakfast," put in the doctor. "Will you see how tempting a meal you can prepare?"

There was one reservoir built inside the compartments, from which we drew cool water, and another built next to the outer steel framework, from which we could draw boiling water. As this tank was connected with the discharge pipe of the air-pump, and thus with the exterior, I was disgusted to find that, although the water boiled furiously, and was rapidly wasting away in steam, it did not become hot enough to make good beef tea. The heat escaped with the steam at a comparatively low temperature, so that I was compelled to boil water over my gas jet for the meat extract, which we drank instead of coffee. I also prepared some sandwiches of roast beef and cold ham, and with great relish we began our diet of ready cooked foods, which was to continue for so long.

After this meal I felt quite sleepy, for I had enjoyed but three hours' rest. The doctor saw my yawns and told me to turn out the gas and have a long doze, and I was glad enough to do so.

I must have slept soundly for an hour or two, and then I remember dozing and rolling lazily in my bed, as I usually did at home on Sunday mornings. During my previous nap the bunk had seemed hard and cramped, and I had privately grumbled at the doctor for overlooking personal comforts; but now I felt that luxurious sensation of sleeping on soft mattresses and yielding springs, though of course I had neither. I do not know how soon I should have thoroughly awakened had I not lifted my hand to rub my eye, and unwittingly dealt myself a stinging blow in the face. This roused me.

But what was the matter with that arm? It was as it had once been in a nightmare, when it felt detached from its place, and moved lightly and without effort, like a bough in the wind. I pinched it with my other hand, and it was quite sensible to the pain. In fact, the other arm was now acting in the same queer way. I arose in bed quickly to see what was the matter, and the upper part of my body bent violently over and struck against my knees. Then my effort to take an upright position threw me on my back again. Evidently my muscles were not working as they were when I went to bed. They must be over-excited and over-active. I immediately thought of my heart as the principal and controlling muscle, and in my eagerness to feel its beating my hand dealt me a slap in the chest. These blows, though rapid, did not seem to hurt as much as they ought, after the first stinging sensation. I found my heart was beating regularly enough.

"Doctor!" I cried out presently, more to test my voice than for anything else. It sounded perfectly natural, and my vocal chords were not over-stimulated or abnormal.

He came half way down from his compartment soon after hearing me, and rested his elbow against one side of the aperture between the compartments, leaning against the other side easily. He had a scale made of heavy coiled spring in his hand.

"I wish to calculate our distance from the Earth," he said. "Do you mind weighing yourself on these scales?" and he held the spiral down toward me.

"You can't support my weight!" I exclaimed, and springing up from the bed I bumped my head against the partition between the compartments, eight feet above my floor. I grasped the lower ring of the scale he held down and lifted up my feet. It seemed as if something were still supporting me from below, for scarcely one-tenth my weight had fallen upon my hands.

"You weigh twenty and a half pounds," he said, and then inquired, "What did you weigh on Earth?"

"One hundred and eighty-five pounds," I answered, just beginning to understand that our greatly increased distance from the Earth had much reduced her attraction for us.

"That is disappointing," he answered, "for we are only eight thousand miles from home; but our velocity is still constantly increasing."

"I would like to buy things here and sell them at the surface," I exclaimed.

"You wouldn't make anything by it if you used the ordinary balance scales," replied the doctor.

Try as hard as I would, I could not accustom my muscles to these new conditions. They were too gross and clumsy for the fine and delicate efforts which were now necessary. I was constantly hitting and slapping myself, though these blows scarcely hurt, and never resulted in bruises. I attempted a thorough re-training of my muscles, which was to all intents an utter failure, for weight continued diminishing much more rapidly than my stubborn muscles could appreciate. After another eight thousand miles, which were quickly made, we had but one twenty-fifth our usual weight, which reduced me to seven pounds. And for most of the trip we weighed practically nothing,
CHAPTER IX
Tricks of Refraction

The doctor figured out that we should be quite insensible to any weight when we were seventy-five thousand miles from the Earth. At fifty thousand miles I would still weigh a pound, and when we had finished the first million miles, the entire projectile, with its two occupants and all its dead weight, would weigh considerably less than an ounce. That was a mere start on the enormous trip ahead of us; but when that distance was reached, we could no longer count upon terrestrial gravity for accelerating our speed. We must travel with our accumulated momentum, unless by that time the Sun should have taken the place of the Earth, and with his vaster forces continue to repel us Marsward.

As we sat talking the doctor grew weary, and soon unconsciously dropped asleep. I left him to enjoy his rest, and, tossing a scrap of ham bone to Two-spot, I went up to take my place at the telescope.

Mars seemed to be exactly in the right part of the field. I surveyed the starry stretches ahead with a feeling a little akin to fear. I was queerly affected by the vast expanse of loneliness outside, and by the deathly quiet prevailing both without and within. There was not the slightest whizzing or whistling now. We might be hanging perfectly motionless in space for all I knew. The batteries made no sound either. I could hear only the low, regular breathing of the doctor as he slept, and the slight crunching of Two-spot on his bone. Presently I thought of looking for the danger lights, but I looked through the telescope instead, and saw the little red planet in his proper place.

What a vast distance we were from any planet! If anything were to happen to us, no one on Earth or in the heavens would ever know of it. I had never been homesick, but a very little would have made me Earthsick just then. I did not like the upper end of the projectile because I could not look back at the home planet. It was as if one edge of the umbrella were left against the Earth's surface, and then the umbrella was being turned gradually around until it faced me and formed an enormous disc, apparently as big as the Earth. Then, as it slowly moved outward, its edge seemed to cleave to the Earth's, as two drops of water do when about to separate. Finally, it detached itself entirely, and stood as a great muddy red orb a little to the west of and above the Earth. It filled me with dismay to see all this happen after I had turned the rudder in the direction which should have corrected our course. In desperation I gave the wheel an additional hard turn and looked again. At last the great red patch was shrinking; slowly it diminished, and finally disappeared. But just as I was breathing a sigh of relief, I noticed the white sickle of light on the east side that I had seen before; only it was increasing most threateningly now. Yes, it was assuming the same umbrella shape and detaching itself a little from the eastern edge of the Earth. There was still a narrow rim of bright white light on the Earth, and this dimmer umbrella shape was faintly separated from its edge. Its outlines were marked by flashes of rainbow colours, as had been the case on the other side. I sprang to the wheel and gave it several frantic turns back the other way. Then I ran up to the telescope for a hurried view, and Mars was nowhere to be seen! I hastened back to the wheel and gave it a vicious additional turn. I was determined to prevent this umbrella from opening at me! And true enough it ceased enlarging, and gradually shrank and settled back upon the surface of the Earth. Then slowly it faded and disappeared, as it had done before when the doctor had corrected the course. I eased back the wheel and went to look for Mars again, but he was not in the field. As I returned I brushed unconsciously against the doctor in my excitement. He roused himself, sat up, and watched me peering out of the port-hole. I was gazing at a new appearance.

"There it is again!" I cried, for below the Earth and to westward a pale white disc came into view all at once, not gradually, as if emerging from behind the Earth, but springing out complete and detached.

"Doctor!" I said, catching him by the arm and pulling him down to the port-hole, "what is that?"
"That? That is the Moon, my boy. Has it excited you so much?"

"Yes; I have been trying to dodge it. But you had better look to the wheel," I cried.

He ran up to the telescope, and I heard him exclaim, "Donnerwetter!" half under his breath. But with a few careful turns of the wheel he found the planet again, and moved him to the right part of the field. Meanwhile the Full Moon shone on us with its pale glimmer. But a thin rim of it next to the Earth gleamed brightly with rich silver light.

"I thought you said we had started in the dark of the Moon. I thought it was behind the Earth," I interposed.

"That is the New Moon just emerging. It will probably not be seen on the Earth until to-morrow night, but as we are at a greater distance we see it first," replied the doctor.

"But that is not a New Moon, it is a Full Moon, which should not be seen for fourteen days yet," I objected.

"Pardon me, it is a New Moon," he insisted. "That inner rim of brightness is all the sunlight she reflects. The paler glimmer is Earth-light, which she reflects. When she is really a Full Moon, she will be perfectly dark to us."

Then I explained to him the first umbrella appearance, and its gradual swelling and final disappearance.

"Rainbow colours around the edge and a gradual changing of the shape, you say? That means refraction. The Earth's atmosphere has been playing tricks on you. The umbrella of dull red light was a refracted view of the Moon before she really came into sight. Rays of light from the hidden Moon were bent around to you. Then, as she gradually moved from behind the Earth, her appearance was magnified by the convex lens formed by the atmosphere, bent over that planet. Presently it diminished and went out altogether, you say?"

"Yes, but that was because I steered away from her," I replied.

"No; you could hardly lose her so easily," he answered. "Did you ever try holding an object behind a water-bottle or a gold-fish jar? There is a place near the edge of the jar where a thing cannot be seen, though the glass and water are perfectly transparent. The rays of light from the object are bent around, through the glass and water, away from the eyes of the observer. It was like that with the Moon when she disappeared. She was really drawing out from the Earth all the time. Finally, when her light passed beyond the atmosphere altogether, she became suddenly visible in a different place and shining with another colour. What we see now is the real Moon in her true place. The other appearances were all tricks of refraction."

"But when I had turned away," I explained, "there came a thin rim of bright light on the other side of the Earth, and a gradually appearing umbrella shape there too."

"Ah, then you steered far enough out of your course to see part of the illuminated surface of the Earth. That was the real danger light. And if it began to assume the umbrella shape, detached from the Earth, that was due to atmospheric refraction of sunlight. This great shadow we are travelling in has an illuminated core, which we shall encounter when we have proceeded a little further. I tell you of it now, so it may not give you another shock. Have you ever noticed the small bright spot which illuminates the centre of the shadow cast by a glass of water? That is partly the same as the core of light which exists in the heart of this shadow. Rays of light from the sun, passing over all sides of the Earth, are refracted through the atmosphere and bent inward. You must have steered over into some of these rays just now, and then turned back from them. Somewhat farther on all these refracted rays will meet at a common centre, which they will illuminate, and we shall have an oasis of rainbow-tinged sunlight in this great desert of shadow. The sun will then appear to us to be an enormous circle of dull light entirely surrounding the Earth."

"I don't fancy running into that at all," said I. "Can't we avoid it by steering out?"

"Avoid it!" exclaimed the doctor. "We must investigate it, and photograph the peculiar appearance of the sun. Light seems to have more terrors for you than anything else just now. You must get over your rush-and-do tendency; you must stifle your emotions and impulses, and learn to think of things in a more calm and scientific manner."

"But that is not so easy for me, Doctor. Whenever I am left alone, a feeling of dread possesses me. I am used to having many people, bustling noises, and confused movement all about me. The silence of Space stifles me, and the loneliness of the ether oppresses and overcomes me strangely."

"I prescribe a change of air for you," answered the doctor. "You will do better in a rarer atmosphere. Let us send what we have been breathing back to Whiting, and make a new one to suit ourselves."

CHAPTER X

The Twilight of Space

"Shall I come up into your compartment for the operation?" I asked.

"No; for this first time we will pump out my compartment, as I wish to observe from the rear port-hole the action of the air which we set free."

The bulkhead, with its bevelled edge, was therefore fitted into the opening between the compartments, and I took the first turn at the lever handle of the air-pump, while the doctor observed from the window. I had given the handle less than a dozen vigorous strokes when the doctor suddenly exclaimed,—

"Stop! Wait a moment;" and he began pulling at the bulkhead, which was already rather tightly wedged in by the air pressure. "I have left the rabbit inside," he said, when he found breath to speak. And poor little bunny's heart
was beginning to beat fast when he was rescued.

Then we began again. The doctor watched the escaping air for some time, evidently forgetting that I was at all interested in it.

"All quite as I expected," he said at last. "Only I had forgotten about the snow."

"Nothing will ever be very new or interesting to you," I put in; "but pray remember I am here, and rapidly getting empty of breath and full of curiosity."

Then he relieved me at the pump handle, and this is what I saw from the port-hole: The air escaping from the discharge pipe of the air-pump was visible, and looked like dull, grey steam. Immediately on being set free it swelled and expanded greatly, and sank away from us slowly. But at the instant of its expansion the cold thus produced froze the moisture of the air into a fine fleecy snow, which lasted but a second as it sank away from us and melted in the heat, which the thermometer showed to be close upon ninety-five degrees. This miniature snowstorm was seen for an instant only after each down motion of the pump handle.

"Where is this air going?" I inquired. "The little clouds of it seem to drop away from us like lead; but that must be because of our speed."

"It is falling back to the Earth, to join the outer layer of rare atmosphere there. If we had a positive current instead of a negative one, the air would not leave us, but we should gradually be surrounded by an atmosphere of our own, which we should retain until some planet, whose gravitational attraction is vastly stronger than ours, stole it from us. When we begin to fall into Mars, we shall acquire such an enveloping atmosphere; and we can draw upon it and re-compress it if our inner supply should become exhausted."

"If this air is falling home to earth," said I, "we could send messages back in that manner."

"We can drop them back at any time, regardless of the air," he answered, and then added suddenly, "but it will make a beautiful experiment to drop out a bottle now."

He ceased pumping, and opening a bottle of asparagus tips, he placed them in a bowl, and prepared to drop out the bottle. I took my pencil and wrote this message to go inside,—"Behold, I have decreed a judgment upon the Earth; for it shall rain pickle bottles and biscuit tins for the period of forty days, because of the wickedness of the world, unless she repent!" And I pictured to myself the perplexity of the poor devil who should see this message come straight down from heaven!

In order to make his experiment more successful, the doctor put in half a dozen bullets from one of the rifles, to make the weight more perceptible. Then he put the bottle into the discharging cylinder, and preparing to push it out he stooped over the port-hole. At a signal from him I gave the pump handle several quick, successive motions, and at the same instant he let drop the bottle. At once he cried out,—

"Beautiful! and just as I thought."

"But I didn't see it!" I protested. "What was it?"

"The instant the bottle was released the discharged air was immediately attracted toward it, and gradually surrounded it entirely. It was like a little planet with an atmosphere of its own, as they fell back to the Earth together."

"But I couldn't see it; I had to pump," I complained. "We must do it again."

"We shall soon have our bottled things all emptied out on plates to dry up and spoil," he objected. So I emptied a biscuit tin this time, and delaying for no message, I put it in the discharging cylinder. Then I bent over the port-hole and gave the signal for the pumping. As I thrust out the tin I was astonished to see the lid pop off the first thing. The quick expansion of the air inside it did that. This air, as well as the air from the discharge pipe, seemed to flee from it instead of surrounding it, as the doctor had said. I continued watching so long that he finally said,—

"Hasn't it fallen out of sight yet?"

"No; it is not falling away swiftly as the air does. It is following the projectile! It is not gathering any air about it as you said it would. It does not quite keep up with us; but considering our speed, it is doing remarkably well!"

The doctor was not inclined to believe me until he had looked for himself. He watched and pondered for a minute or two. Then his surprise ceased, and he spoke in that assured way which always irritated me.

"Quite natural, after all," he said. "That biscuit can is made of thin sheet-iron with a surface coating of tin. The iron has become magnetized by induction, and the Earth repels the can just as it repels us. It will follow us to the dead-line, and probably on to Mars, unless the sheet-iron loses its polarization. If we had cast out a thing of solid iron, it would rush ahead of us, instead of falling a little behind, as this does, for it would have no dead weight to carry. But we could not put such a thing out of the rear end, for no force would make it fall that way. If we put it out of the forward port-hole, it would beat us in the race toward Mars."

I remarked to the doctor that the air-pump seemed to be incorrectly built, for its action was strangely difficult in the reverse manner that it should have been. The down strokes went by themselves with a quick snap, but the up strokes were as if against pressure, and the moment the handle was released it flew down again. He had not tested
the pump at the surface, as it was of a well-known make, but it certainly seemed to work backwards. Moreover, the more nearly we had a compartment emptied of air, the more difficult the pumping should become, but here again the reverse seemed to be the case, for the longer we worked the easier the up strokes became.

The temperature of the projectile was still fairly comfortable, and the doctor allowed the condensed air to issue very slowly into the partial vacuum in his compartment until it produced a barometric pressure of twenty-seven. Then we pulled back the bulkhead, and when the new atmosphere had mixed with the old in my compartment, a pressure of twenty-eight resulted.

"That is about the way the barometer stands during tempests at sea," remarked the doctor. I could not notice much difference from the air we had previously had. Possibly it was fresher and slightly more exhilarating.

The effort at the pump had made us both hungry again, and I prepared from meat extracts a warm and rather thick gravy to put over the asparagus tips. I attempted to pour it, but it was so light that its sticky consistency prevented it from running. We had a hundred such examples daily of the changes which lack of weight caused in the simplest operations. With sandwiches made of biscuits and condensed meat, we eked out a luncheon. This must have been about noon, for when it was over I remember noticing that we no longer needed the gas in the compartment, for there was a gradually increasing mellow light outside.

"Are we already emerging from the shadow?" I inquired eagerly.

"No, not yet," replied the doctor. "But we are now entering its illuminated core. I must prepare to photograph the strange appearance of the Sun that we shall see presently."

I hastened to the port-hole, and did not leave until it was all over. What I then saw was one of the most beautiful things of the whole trip. The light outside was not bright, but soft and dreamy, like the first twilight after a rich day of summer. The great corona all around the outer edge of the Earth was the most magnificent appearance I have ever seen. It was not at all dazzling, but had the melting shades, first of a sunrise and then of a gorgeous sunset. We had missed the gradual appearance of the phenomenon, but we had a good view of its highest splendour. The colours were continually but slowly changing, and finally the darker hues gradually suffused and dyed the pinks and crimsons.

The Earth was now about three times the diameter of a rising Full Moon, and the corona was about a quarter her width, and looked as if twenty shell-pink suns were set one against the other and overlapping all about the edge of the dark orb.

"How do you know that is not really the extending edge of the Sun?" I asked the doctor. "Perhaps we are already far enough away to see it all about the Earth like that."

"If that were really the Sun, the light from his extending edge would illuminate the surface of the Earth towards us. The planet's outline would be irregular and partly glowing, but you see it is quite dull and dark, and the outline is most plainly visible."

In rapt attention I watched the delicate shell-pink change to a deeper hue of orange, and then our twilight waned a little and turned a sombre grey. Presently the corona glowed a rich maroon, gradually dying to a luminous purple, which slowly deepened and darkened, and finally melted into the general blackness. And lo! we were in the shadow again, and the dreamily beautiful panorama was over.

"It must have lasted nearly an hour," said the doctor. "I am sorry we did not notice the beginning, but it must have commenced with the same dull shades we saw at the end, and gradually changed to brighter colours. I secured three negatives when the glow was most intense."

"Then we have had a waxing and a waning twilight coming together in the middle of our night. And the corona was like a sunrise, followed immediately by a sunset," I exclaimed.

"And why shouldn't it appear so?" said the matter-of-fact doctor. "Twilight is the commonest phenomenon of refraction with which we are acquainted, and sunrise and sunset are merely a mixture of refraction and reflection. There is nothing new about it."

"Now, Doctor, we must remain friends, but you shall not continually tarnish my poetry with your accursed science! I thank my Creator that He made me ignorant enough to admire the beauties of nature. You are continually peeping behind the scenes, and pointing out the grease paints, the lime-lights and the sham effects. Let me enjoy the beauty of the tableau, no matter how it is produced. I would give all of your pat knowledge for that feeling of profound awe which rises in the untutored breast at beholding the magnificent grandeur of unfamiliar nature."

"When your ecstasy has quite passed, I shall appreciate a little cold mutton and biscuits, and then we must pump out again," he replied.

CHAPTER XI
Telling the Time by Geography

After supper I went up into his compartment, and having arranged the bulkhead, began the tedious operation at the pump handle. It was a matter of pure muscular strength, as the effort had to be made to lift the handle, which
snapped back sharply when released. I was working vigorously when I was suddenly struck dumb at seeing the handle break off just at the point of leverage, so that it was quite impossible to operate it. The doctor heard the handle fall, and looked around in great vexation.

"That means asphyxiation within twenty-four hours!" he exclaimed.

"Which is plenty of time to think it over," I answered.

After all, why was this pumping necessary? If a way could be devised to open a valve, all the air would rush out of my compartment as easily as beer runs out of a bung-hole. In fact, it did rush out a little at a time, which is what made the handle go down of itself. But any such new valve would have to be automatically closed, as it would be manifestly impossible to enter and shut it. I kept on thinking, and finally began examining the partition between the compartments. There seemed to be several long screws that went quite through it.

"Doctor, did you ever hear of those wise people who, after every freshet, shipped the surplus water down the river in boats? Well, it strikes me this air-pumping is just about as useless labour. Help me pull in the bulkhead and I will show you something."

I went at once to the cylinder we used for discharging things from the projectile. With a pair of pliers I chipped off a small piece of the edge of the closing lid in two places, one near each end. This made two little irregular holes into the cylinder about eight inches apart. Then I pushed it half way out, so that one hole was outside and the other inside. Of course the air rushed through the inner hole into the cylinder, and thence through the outer hole to the exterior.

"Shut that thing!" cried the doctor, when he saw what I had done. "Do you wish to suffocate us? That will let the air out perfectly, but how are you going to close it to admit the condensed air?"

"People unskilled in these matters are so hasty!" I said rather sarcastically. "Wait until I have finished and you will see."

I found he had a screw-driver, and I loosened one of the long screws and enlarged the half of its hole toward my compartment. Then I whittled a block of soft wood, so that it would slide smoothly into this half of the hole. Driving the screw home again, I just allowed its tip to enter the end of the block. Then I fastened a piece of stout twine to the cylinder and the other end to the block of wood, which was almost opposite it. Pushing the cylinder half way out, I made the twine taut, and hastening into the doctor's compartment, I thrust in the bulkhead. The air was rapidly escaping. Waiting long enough for all of it to have leaked out, I then unscrewed the long screw, which gradually drew in the block of wood and the twine, and thus pulled the cylinder into the projectile so that there was no connection with the exterior. Then the doctor let in the condensed air to a barometric pressure of twenty-six, and the whole operation was over in a few minutes. My compartment must have been almost a complete vacuum. When it was over, I cried rather triumphantly to the doctor,—

"There, you see, one doesn't need a steam pump to make the water run over Niagara! At this distance from the surface, nature abhors a gas and prefers a vacuum!" He was inclined to be rather sulky at first, but he really did not like pumping any better than I did.

I should say it was about five hours later that we noticed it was growing gradually lighter outside. Mars lost his ruddiness and grew pale in a grey field. Our view of the Earth was also becoming more and more misty.

"We are emerging from the black core of the shadow into the semi-illuminated penumbra," said the doctor. Then he altered his course experimentally, and found a slightly darker path, but it soon began changing again to grey.

"There is no use trying to keep in the umbra any longer. It is growing too narrow. The penumbra will last quite a long time yet, but it will gradually get fainter and fainter. We shall not plunge at once into the dreadful light you fear so much. Keep your eyes glued to the Earth. I can scarcely see Mars any longer. The whole field is getting blank and white."

The rear vista was also growing a pale white, and I could distinguish the form of the Earth as a darker object slightly larger than a full moon when risen. But it was all growing dimmer and dimmer as the penumbra faded toward the perfect light.

"Mars is completely gone now," said the doctor. "The field of the telescope is one pale curtain of light. I have steered to the left to go ahead of him now, as there is no longer any reason for going behind him."

I heard him working at the telescope as if loosening it from its fastenings, but I dared not take my eyes from the Earth to see what he was doing. Presently he called out to me,—

"Make room down there. I must bring the instrument down and observe the Earth now. Be careful you don't lose sight of her." But the instant he removed the telescope from its bearings and uncovered his forward window, I lost all view of the Earth. The new light now entering by his window, from behind me, made it impossible to see so far.

"Too late!" I cried; "I have lost her! We are alone in limitless space, without even the company of the planets!"
But while the doctor was carefully lowering the telescope, my eyes were still searching, and presently I perceived a thin crescent of faintly brighter light, growing gradually wider. It was like a new moon dimly seen in a clear part of the sky when the afternoon sun is cloud-hidden. The doctor stopped to look where I pointed it out to him, and then changed the wheel a little.

"That is a thin slice of the illuminated part of the Earth," he said. "We can no longer see the dark side which has been visible to us while in the shadow. Fortunately our new course a little ahead of Mars will give us a constant view of this thin crescent."

We now stood the instrument on end over the port-hole window, which brought the small end near the aperture between the compartments. When the doctor had secured a focus, he called me to look. The crescent was greatly magnified, but the outline of the sphere on the other side could not be seen, nor could anything be distinguished in the centre. Both the outer and inner edges of the crescent were ragged and irregular in places, and there were faint darker spots on its surface. I called the doctor's attention to the fact that the ragged appearance was always in the form of extending teeth on the outer side of the crescent, and in the form of notches eaten into its inner edge. He studied all these appearances carefully and finally said,—

"This crescent is that part of Earth which is just coming into morning. It is gradually shifting from east to west with the Earth's rotation of course. What we see now, however, is land almost from pole to pole. There is a small sea just above the middle, which might be the Mediterranean. Moreover, it must be mountainous land to cause the ragged edges and the shadows inside."

Then he turned away to get his globe, and I took the place at the instrument. He was slowly turning the globe and examining it thoughtfully as he said to himself,—

"The only continuous land from pole to pole with one interrupting sea must be over the two Americas or over Europe and Africa. The American mountain ranges run from north to south, while through Europe and Africa they are scarce, and almost uniformly run from east to west. Besides, the sand of Sahara would be sure to show as a large, bright, regular spot. A section from longitude 70 to 80 west would include the Green Mountains and the Alleghanies of North America and the Andes of South America, and in that case the darker spot in the centre would be the Caribbean Sea."

"Look here!" I cried. "Toward the lower end the inner outline is growing darker but more regular, and faint streaks or shadows reach through the brighter light toward the dark greenish regular surface which looks like water."

He observed closely and said,—

"Those shadows must be cast to westward by the enormous peaks of the Andes, and the dark greenish surface they reach toward must be the Pacific Ocean."

Then he consulted his globe while I looked. "The first two to come into view," he said, "would be the two great peaks in Bolivia, over twenty-one thousand feet high."

"There are two of them together," I said, "and now others are rapidly coming into view. There are five more scattered unequally, and then, lower down, three near together."

"Then there is not the slightest doubt that we see the Lower Andes," he said. "These last you mention are scattered just as you say along the border between Chili and Argentina, and the group of three are near Valparaiso, the peak of Aconcagua being the tallest. But watch now for the group in Ecuador, about midway between the top and bottom of the crescent. There are four very large peaks and numerous smaller ones."

"The middle all looks bright yet, like land, with no shadows or greenish spots. But a queer thing is happening lower down, where the shadows have ceased lengthening and are now fading. There are several fine points of light just beyond the outer edge of the crescent. They are mere bright specks, but gradually they join with the surface, making a rough toothed edge."

"Ah, that phenomenon has been observed upon the Moon," said he. "That is the sun shining on the snow-capped peaks first, and then, when the diminutive outline of the mountain comes into view, it looks like a tooth."

"The same is happening all down the coast," I reported. "Now I see it on the lower group of three."

"Give me the instrument," demanded the doctor. "That can be nothing but the west coast of South America, and if that be the case, the whole thing will be repeated for the tall group in Ecuador, dominated by Chimborazo."

As I surrendered the telescope to him, the whole lower part of the crescent was dark, but with regular edges. Only in the middle, which should have been about the Equator, and in the upper part, was there the bright lustre of land reflection. He watched for fully half an hour before observing anything remarkable. At last he exclaimed,—

"Now they are beginning! Five streaks near together and just at the Equator. They are almost equidistant from each other, and the next to the lowest one is the longest. Now the top one begins to fade! Yes, and a point of light has appeared detached from the outer edge, and now another and another! They are growing inward toward the surface. Now they are all connected like five saw teeth; the bottom one is the shortest, and that next very high one is old Chimborazo."
"Then it is morning at Quito and also at Pittsburg!" I said, tracing up the 80th meridian.
"Yes, and we have been one complete day and about five hours more travelling the nine hundred thousand miles that lie between this and Earth," replied he.
"That makes us one full meal behind time," I said; "but we have discovered a way to make the Andes call us for breakfast. When the Pacific Ocean has passed from view, Japan and Australia shall strike noon for us, and we will have supper and call it night when the Indian Ocean is gone and darkest Africa has come into view!"

CHAPTER XII
Space Fever

We counted seven successive returns of the peaks of the Andes, and being by that time certainly six million miles from the Earth, we could distinguish them no longer. Then followed what I remember as a very long and unspeakably monotonous period, without any adequate method of marking the time. Our days became a full week long, for the only way we could guess at the time was by the quarterings of the Moon. We could still see her about the size of a marble in the telescope, and as her crescent began to wane, and finally her light entirely disappeared, we knew she was then just between us and the Earth, and shining upon that planet as a Full Moon. This was due to occur fifteen days after our departure. Then we watched her grow from a thin crescent to a bright quarter, and we knew another week had elapsed.

"We shall soon be able to determine one date with absolute certainty," I said to the doctor, when we must have been some twenty days out. "I have been reading up your almanack, and I find there is a total eclipse of the Sun by the Moon on June 29th."

"You might as well try to eclipse him with a straw-hat, as far as we are concerned," he replied. "The Moon will necessarily be on the further side of the Earth when that occurs, and the eclipse will barely reach the Earth. It will fall short of us by a matter of some thirty million miles!"

It was soon after this that we gave up observing the Earth as a planet, put on our darkened lens, and proceeded to hold her as a spot in the Sun a little to the left of his centre. The Moon remained a tiny spot of light outside for a few days; but finally she entered the Sun also, and was seen as a faint spot travelling toward the Earth-spot.

Although the dazzling quality of the light, into which we had emerged after the second day, was finally beginning to wane and pale a little, Mars was still invisible. In fact, no stars or planets were visible; only the gleaming Sun with the Earth-spot upon it. Our thermometer was poorly placed in the glare of the Sun at the rear; but it showed the heat was decreasing, and from a temperature of thirty-five degrees, observed at the end of the second day, it had now fallen to twelve, and was diminishing regularly about two degrees daily as nearly as we could reckon.

Our appetites were steadily failing, and for two very good reasons: the unsuitable foods and the impossibility of getting any exercise. There was no such thing as getting any healthy actions of the body. Nothing had any weight, and such a thing as physical labour was impossible on the face of it. I attempted to go through regular courses of gymnastics at frequent intervals; but as my body and its members weighed nothing, my muscles found nothing whatever to expend their force upon. I thought myself worse than Prometheus bound upon his rock, for he could at least struggle with the birds of prey and pull upon his chains! I might as well have been utterly paralyzed, and I actually began to fear that I should lose all my strength, and that my muscles would forget their cunning.

And our foods could not have been more unsuitable. The light vegetable diet which this lack of exercise called for was impossible. We had never had any fresh vegetables or fruits, and our tinned and canned supplies of these had been rapidly exhausted. We had plenty of solid, meaty foods and beef essences; but our systems did not require these, and at last absolutely refused to have them. I lived for days at a time upon beer and biscuits, and looked longingly at my cigars. I believed I could have existed comfortably and luxuriously upon smoke alone. My dreams were filled with visions of ripe, luscious fruits and fresh, crisp vegetables. When I awoke, I loathed the only foods we had.

I believe I should finally have given up eating, had I not hit upon a method of exercise at last. It was a sort of rowing or pulling machine, which I rigged up by running a bar through one end of the doctor's spring scales, and fastening the other end to the foot of my bed. I pulled vigorously against this spring for hours at a time, and was delighted to find that my strength had not left me, and that I could easily lift as much as these scales had been made to weigh. I remember the returned appetite with which I enjoyed potted meat and a tinned pudding, after the first hour of as vigorous exercise as our rarefied air would permit.

The Moon-spot had disappeared and gone to her eclipse behind the Earth, when an incident occurred to vary the monotony of our existence a little, and to suggest to me a diversion that had been hitherto forbidden. Our supply of water in the outer tank had long ago boiled away, and I had lighted the gas to heat water for the doctor's coffee. I had taken the cup up to him and remained chatting with him, when presently I smelled something burning from the compartment below. I descended quickly, and saw that my light bedclothes, which now weighed less than a feather,
and often floated from their place, had been drawn into the flame by the draft of the burning gas. They were floating about the compartment now, all aflame and threatening to set fire to everything. We had not a drop of water to spare; but for once I thought of the right thing to do without hesitation. I pushed out the ventilating cylinder, hurried back to the doctor's compartment and thrust in the bulkhead. Within two minutes all the air had escaped from my room, and the fire had died for lack of oxygen. I waited a few minutes longer for the smoke to escape, and then we admitted condensed air, but only to the remarkably low pressure of eighteen. Within five minutes the compartment was ready again, and there was not a trace of smoke or smell of fire to be perceived.

"I congratulate you on your quick perception and prompt action," said the doctor when it was over.
"Quick rubbish!" I exclaimed. "I have been a dundering fool for four weeks by the Moon! I might just as well have been smoking ever since I contrived this self-ventilating arrangement. The compartment becomes a perfectly clean vacuum at each operation, yet I had to wait for this bed clothing to catch fire before I could think of so simple a thing!"

It was at the meal time just preceding the next changing of air that I opened the last tin of canned peas, as a sort of treat for the doctor to offset my expected revel in fragrant tobacco. I prepared half the quantity for him, but left my portion in the tin until I should be hungry. With the prospects of a good smoke before me, I had no appetite for food. I put in the bulkhead to prevent the smoke from entering his compartment and lighted my Havana. Then I took Two-spot on my lap and stretched myself for a reverie. On Earth, smoking time had been my period for reflection. And far back on that distant planet, what were they doing now? In that one busy corner that had known me, they had probably wondered at my disappearance for a day or two, but after the month that had passed I was certainly forgotten. There were few back there whom I cared for, and not many had much reason to remember me. My interests, my desires, my hopes were all ahead of me on a new planet. And what was waiting for me on Mars? Discovery, riches perhaps, and a measure of fame when I returned. Then I thought of the numberless problems that the next few weeks must solve for us. Would there be intelligent inhabitants on Mars? Would they be in the forms of men or beasts? Would they be civilized or savage? Would they speak a language, and how could we learn to communicate with them? Would they have foods suitable to us; indeed, would the very air they breathed be fit to sustain our lives? Should we find them peaceable, or, if warlike, should we be able to cope with them?

These thoughts were interrupted by the doctor, who called feebly to me to come up. "Don't eat any of the peas," he said weakly. "There was a queer taste about them, and they have made me deathly sick."

He was very wretched, and grew rapidly worse. I immediately saw that it was a severe case of poisoning, and I did everything I could to relieve him, but he groaned in agony for several hours. Finally he fell asleep, but his rest was disturbed by fits of delirium, in which he raved wildly in German mixed with English. As he slept I had time to think the matter over carefully. After all, it was a thing which required only simple remedies, and I had administered them. It was only a question of a little nursing and a careful diet, and he would be well again.

But his fever increased and his delirium became more frequent, and I began to appreciate that the derangement incident to the poisoning had prepared the way for a more serious illness. During his ravings I caught a glimpse of the struggling and ambitious side of his nature, which he always so carefully repressed.

Once I heard him mumble this to himself in German: "Kepler perceived a little, he saw dimly; Newton comprehended the easy half; but Anderwelt, Anderwelt of Heidelberg, grasped the hidden meaning!"

In spite of all my attentions (I did not then understand the nature of Space Fever, of course), he was growing steadily worse, and I was becoming desperate. I could not afford to have him ill long. The currents would probably continue to work fairly well until it became necessary to reverse them, and that time was not far off. Unless they were reversed exactly at the right moment, we might fall into the neutral spot and be held there for ever. Even if I managed to stop the negative current, and succeeded in falling towards Mars, I could not regulate the positive current so as to temper our fall and make a safe landing. It was equally dangerous to remain fixed in space, or to fall headlong upon a planet and be smashed, or be buried miles deep if the projectile did not collapse.

I had no way of telling how much time passed, but it seemed to me a very long period, and he grew steadily worse as we approached the neutral point. I tried to rouse him from his delirium. I addressed him jocularly, then commandingly, then beseechingly. And he answered me always with reflections from that other side of his nature which one rarely saw when he was well.

"Hast thou seen red ants crawling upon a cherry? Such are the mere circumnavigators of a globe! What! Hath not the world forgotten a Columbus? How long, then, will it remember---- Hast thou no cooler water? This is tepid and bitter!"

Ever since the last quarter of the Moon, which must have been ten days ago, there had not been the slightest perceptible evidence of movement. The standards by which we judge motion on the Earth had failed ever since we left the atmosphere. There was no rushing or whizzing; we passed nothing; all the ordinary evidences of speed were absent. When you lie in the state-room of a smoothly moving steamer, no forward motion is perceptible. If you see
another ship pass near by, you get a sudden surprising idea of the speed. If you watch the receding water, you appear

to be going forward slowly; and if you watch the spray at the bow or the wake astern, you appreciate the movement

more fully. But if the waves or the tide happen to be running with the ship, she has apparently almost stopped, when

really her speed has been somewhat accelerated. If you watch the distant stars, you can scarcely perceive any motion

at all; and if the clouds should be moving in the same direction as the ship, her motion appears reversed.

We had none of these things by which to judge, and we appeared to be hanging perfectly still in space, though

the doctor had assured me we were travelling at least five hundred miles a minute. This was rational, as it agreed

with the diminishing size of the Earth; but it required an effort of faith on my part to believe that we had been

moving at all.

But suppose we should gradually lose our speed and stop in a neutral point, how should I know it? The Earth

now was, and had been for ten days, a mere spot on the Sun. While Mars had been visible, he had never increased in

size in the telescope, and he was now invisible. The only way I could tell would be to wait until after many days had

elapsed, and if Mars did not finally come into view, I should know something was wrong. But it would be too late

then; there would be no winds or tides, no weight or buoyancy, nothing to move us out of that dreadful calm where
even gravity does not exist. That must be avoided at every cost! But might we not be very near it now? Weight had
been practically nothing for a month, within an hour it might be positively nothing, and----

The doctor's mutterings interrupted these thoughts. "The power with which to travel was so simple and so vast!
It all lay hidden in that elementary law of magnetism, like poles repel and unlike poles attract. But the road to travel
and the problems by the way, those were the hard things!"

He was putting them all in the past tense, as if he had already solved them! But what was that law of magnetism
he mentioned? Perhaps he would reveal his secrets to me in his ravings! I must mark every word he said; for it was
clear I must solve the problem, he would not be well in time. I must brush the cobwebs from my meagre science and
struggle with his invention.

"Unlike poles attract," he had said. Then Earth and matter must normally have unlike poles, and to make Earth
repel matter it would only be necessary to change the polarization of the matter. Yes, he had told me it was all
accomplished by polarizing the steel and iron of the projectile! When they were made the same pole as the Earth,
then she repelled them. But if the whole thing were so simple, why had it never been discovered before? Ah, that is
the strong shield behind which incredulity always takes refuge!

I ventured near the gravity apparatus and examined it carefully. There was a small thing which looked like the
switchboard of a telegraph office. The perforations in it were all in a row, and the ten holes were now filled with
little brass pegs, which were suspended from above on small spiral springs. These were evidently the points of
communication of the negative current to the framework of the projectile. It certainly would do no harm to pull out
one of these pegs, as that would only slightly diminish the current. At least I would risk it. My fingers had scarcely
closed upon the brass, when I was given such a violent shock as to be thrown powerfully across the compartment;
and had my body weighed anything, my bones would certainly have been broken by the concussion. My arm and
shoulder did not recover from the stinging and deadening sensation for some time. I noted the little peg I had pulled
out hanging by its spiral spring just above the hole it had filled. It would be worth my life to remove the other nine
in the same way.

Besides, how would I know when the time came to remove them? My eyes fell upon the two large leaden balls
suspended from short copper chains. I had seen these before, but now I thought I understood them. They would
swing whichever way gravity attracted. They hung down toward my compartment now, and if we ever passed the
dead line, they would hang forward toward Mars. But in the neutral point what would they do? When the gravity of
planets neutralized each other, the steel of the projectile would repel these balls towards its centre, which would tend
to put them both in the same spot and thus bring them together. Moreover, they would slightly attract each other.
Yes, it was quite certain that these had been devised as a Gravity Indicator, and they would tell me when we were
approaching a dead line, when we were in it, and when it was safely passed. But all that would do me but little good
unless I could manage the currents.

I sat thinking this over a long time, when it suddenly occurred to me that the doctor would recognise, even in
his delirium, the importance of action when these two balls came together. As soon as they had approached each
other, I must lift him up and show them to him. The brain that had made them would know their meaning, and know
how to act even in illness! Perhaps I was like a drowning man clutching at a straw; but from the moment I thought of
this I believed firmly that the solution of the whole problem would come in this manner. My hopes were ready to
hang on the slightest peg. It consoled me to remember some instances where men temporarily insane had been
brought to consciousness by impending danger, or by the sight of what last weighed upon their mind.

When I glanced at the balls next, I saw that their chains lacked an inch of being parallel. They were already

moving slowly inward toward each other. I noted that the chains, which ran through the balls and were connected
with a small copper plate on the bottom of each, were just long enough to allow the bottom edges to touch, if they
were drawn as far toward each other as possible.

The doctor's fever was at its very worst, but that did not dampen my hopes. The balls were gradually drawing
easier together. I wished them to be quite close before I made the supreme trial which was to liberate us or leave us
prisoners in space for ever! Presently I loosened the knotted sheets which held him to his bed, and lifted the feverish
man, as I might have carried a doll, and brought him in full view of the approaching balls.

"Doctor, listen now and look," I said firmly and commandingly.

"Always stubborn and unbelieving!" he raved. "I must take it to a new country, to America, where they invent
things themselves, and are willing to listen, and anxious to try!"

"Doctor, don't you know me? It is I, Werner, who helped you. This is a crisis for us! Do you see those
approaching balls? You know what they mean! You must save us."

"Thou'rt too busy, like all the rest! Why, then, remember that to-morrow will despise those who are so busy
with to-day! Opportunity has knocked and listened for thee and thou hast bade her begone!"

"Listen, Doctor. I am he who heard you and gave you the pink cheque. I am he who refused three times to go
with you and then came at last. I am he who was afraid of the light, who dodged the Moon, and chaffed you about
the pump. Do you not remember it all? Come, you are no longer ill. There is work to do. Have you forgotten the
leaden balls? See! they are touching each other now, and we are in the dead-line, the neutral spot, the one danger of
the trip which you acknowledged."

But it was useless. He remembered nothing, his eyes were dim and vacant, and the great brain that had planned
all this was overthrown by fever. The experiment had failed and we were lost!

I tied him gently back on his bed and turned in desperation to the apparatus, deciding to risk my life to pull out
those nine pegs with my hands, one after another.

My God! they were already out! Every one of them was hanging by its spiral spring, just above the hole it had
filled. The switchboard had opened a little and released them. It was all automatic! The contact of the copper surface
of the balls had completed a short circuit which cut the negative current. He had thought of it all, even to this
emergency, and the machine could take care of itself!

And in the wave of thankfulness and rejoicing which swept over me, I sank on my knees and kissed the
forehead of the feverish old man again and again!

CHAPTER XIII
The Mystery of a Minus Weight

It was the doctor himself who gave the name Space Fever (now so generally adopted) to the peculiar malady
from which he suffered in that long period when weight was very slight or nothing at all. A little reflection on the
physiological bearings of the conditions we were passing through, will serve to explain the illness.

For the period of a month, owing to the impossibility of effort, there was scarcely any wasting of our bodily
tissues, and very little need for oxidation of the blood. The limbs, which the heart really works hardest to serve,
did scarcely any labour and needed very little blood. But the heart had its stubborn habits the same as the other
muscles. It is a high-pressure engine, and there is no way of slowing it down materially. It kept up its vigorous
pumping and driving just as if the great muscles of the limbs had wasted and needed building up, and just as if it had
the task of forcing the blood through those parts of the body usually compressed by its weight or strained by the
effort of carrying it. The result was much the same as if your heart now should suddenly begin to beat much too fast,
the blood was heated into a state of fever, which naturally increased as we lost weight, culminated at the dead-line
and began decreasing as soon as we commenced having a weight toward Mars. It was only my fortunate invention
of a method of exercise, and my religious adherence to it, which saved me from a similar attack.

But many things happened before the doctor recovered consciousness. The Moon had re-appeared on the other
side of the Earth-spot, the light about us had grown less dazzling than sunlight on Earth, and the temperature had
fallen to four degrees. It was perhaps two days after passing the dead-line that, as I was gazing carefully out of the
forward window, I saw far to the right of us a large circular patch of faintly redder light in the general curtain of
white. Its size quite startled me, for it was rather larger than a full moon, and I had expected Mars to re-appear as a
very bright star before we could distinguish any disc with the naked eye. This misapprehension probably arose from
the fact that I had thought the dead-line about half way between the two planets, which upon reflection I saw to be
impossible, as it must be much nearer the smaller planet.

The outline of the planet was not clearly visible yet, but I could not have missed seeing that red glow long
before, had it been more directly in front of us. Evidently we were steering much ahead of the planet, which
indicated that we were arriving before opposition. I immediately changed our course so as to go more nearly toward
it, but yet to keep a little ahead. Then I hastily brought the telescope back to the forward compartment, which was
now the bottom of the projectile. The lenses easily pierced the curtain of light that seemed to be hung in front of the
new planet, and I could distinguish the outline of the greatly magnified orb very clearly.

Judging from appearances, it could not be farther from us than twice the distance of the Moon from the Earth. I resorted to the scales at once, and found that weight was beginning slowly to return, for I weighed a little less than an ounce. From a rule the doctor had explained to me, I calculated that this indicated a distance from the planet of about four hundred thousand miles, if it really was Mars. But I had some doubts about its really being that planet; for a clear white, irregular-shaped spot upon it, which I had noticed as soon as the telescope was focused, did not appear to move at all, as it should have done had it been upon a rotating planet. Upon closer observation, I detected a dull, greenish spot, just coming upon the lower edge. But when I looked again a bright white and perfectly circular spot had appeared in the same place and covered it up. But this new white spot travelled much more rapidly, and soon uncovered the greenish spot, which seemed to move in the same path, but much more slowly. This was something I could not understand. The white circle was too bright and regular to be a cloud, yet if they were both on the surface how could one travel faster over the same path?

Very soon the white circle passed entirely across the greater orb, and then I was surprised to see it detach itself from the planet and remain for a few moments as a separate small orb in the sky! Could this be another freak of refraction? But before I could determine, the little orb disappeared behind the greater disc and was gone. The greenish spot, which I judged to be truly on the surface and caused by an ocean or great sea, was about three times as long in crossing the disc. I next turned my attention to the immovable and irregular white spot, and discovered that its edges seemed to be revolving slowly around its centre. Then it occurred to me that this spot must be located at one of the poles and be caused by polar ice and snows. The doctor had expected such on Mars, and I no longer doubted that this was our objective planet.

It was like a great holiday for me when the doctor regained consciousness. Almost as soon as his fever abated he was well enough to perform his customary duties. His illness had not made him appreciably weak, because as yet scarcely any effort was required to move about. He was quite as anxious to hear all my experiences as I was eager to relate them. I gave him a full account of my struggle passing the dead-line, of my discovery of Mars, and the various spots I had noted.

"From the time it took the greenish spot to cross, I should judge a Martian day to be about fifty hours long," I said.

"Then you must have been very lonely," he replied. "For a Martian day is just forty-one minutes longer than an Earthly day, unless a great number of our scientists have continually made the same mistake in observing him."

"When we arrive, we shall be able to determine the point exactly if our watches commence running again," I answered. "But I think I know one reason why I have misjudged the time. Ever since you have been ill I have slept very little. I have hardly felt the need of rest since I lost my weight. I have been growing more and more wakeful, and I rarely sleep more than an hour at a time. That seems quite sufficient to refresh me."

"As we regain our weight we shall feel the need of sleep again," he said. "But on Mars we may need but one-third as much as we had on Earth, unless we exert ourselves proportionately more."

Then I told him about the circular spot which had seemed to slip off the upper edge of Mars, and asked his explanation of it.

"That must have been Phobos, one of the moons of Mars," he said.

"One of his moons!" I exclaimed; "I didn't know he had any."

"You are an American, and say that!" he answered in surprise. "It is one of the astronomical glories of your people that they discovered the two moons of Mars, during the favourable opposition of 1877."

"This is the first case I remember where we have left it to a foreigner to tell us how great we have been!" I laughed.

"These two moons of Mars also furnish a most interesting example of how fiction may forestall and pre-figure actual scientific discovery. Dr. Swift made Gulliver, in his wonderful travels, discover two moons of Mars, revolving at a speed which he must have thought ridiculously fast. Many years afterward the American telescopes really found two moons, but actually revolving more rapidly than Dr. Swift had dared to boast! If your white circle was really Phobos, you have seen the freak among satellites. She is the smallest, swiftest moon ever discovered, and travels so much more swiftly than the revolution of her primary that she appears to go opposite to everything else in the Martian sky, rising where the Sun sets and crossing the heavens from west to east!"

"What I saw did travel in the same direction as the rotation of the planet, and much more rapidly," I exclaimed.

"Then it was Phobos without a doubt, and she is due to appear again in the west in three hours and fifty minutes after she sets in the east. We must watch closely, for I wish to land upon her and make a flying trip all around Mars with her. Do you realize what a glorious view we shall have of the great planet, sailing around him on this satellite in a period of a little over seven and a half hours, and at a distance of only about four thousand miles? There will be no night, for if one side of the little moon is heavier than the other, the heavier side will always be turned toward
Mars. Therefore, when the Sun does not shine on Phobos, Mars will do so, and keep her continually illuminated, except for the brief period of the regular eclipse during each revolution. And one-fourth of the entire heavens, as seen from Phobos, will be filled with the glowing orb of Mars! The great planet will exhibit to us at a near range all the configurations of his surface, his oceans and his clouds. We will survey and photograph him to our hearts' content."

The doctor was justly enthusiastic on this subject, and I felt that such a landing would, in some measure, compensate for my disappointment in not being able to visit the Moon.

As I watched carefully, the satellite finally came into view, but very much more distant from Mars than before. Also, it moved very slowly now, and seemed to grow larger as it approached the disc. I pointed it out to the doctor, and remarked that it was acting quite differently. Just as it entered upon the orb of Mars, another moon, somewhat smaller, mounted hurriedly from the under side of the planet and began hastily ploughing her way over the ruddy disc.

"That last one is the one I saw before, that is my Phobos!" I cried excitedly.

"Then the other slow one is Deimos, the outer moon. She appears the larger to us now, because her greater distance from Mars makes her nearer to us, but she appears to the Martians as the smaller. We must observe closely, and we may discover some new and lesser satellites which Earthly telescopes have never found."

"Time enough for that when we land on Mars," I answered. "If we get in past these two without being hit, I shall be satisfied. You dare not venture in front of that Phobos, and I don't see how you can ever overtake her if you approach from behind."

"That reminds me to slacken speed, for we must be getting very near," he said. "Please weigh yourself every few minutes and note your increasing weight. You should weigh seventy-two pounds on Mars, and eight pounds at the distance of Phobos."

He immediately reversed currents, and when I reported that I weighed almost a pound, it frightened him, and he turned in the full power of the negative currents to overcome our momentum. And it proved that the repelling power of Mars at the distance of 15,000 miles, which this indicated, was not at all strong against the great velocity we had been daily acquiring. I hung upon the scales every few minutes, and reported a steadily increasing weight up to three pounds.

"That shows a distance of eight thousand miles," he figured. "Almost exactly in the orbit of Deimos, but she has safely passed, and will not return for thirty hours. We must turn the rudder hard over to the right, and sail around the planet in a circle until Phobos overtakes us; then, if we approach her travelling in the same direction at almost the same rate of speed, her gravitational attraction will pick us up and draw us safely ashore."

Mars was already an enormous orb ahead of us, and many of his features, such as oceans, ice-caps, and continents, could easily be distinguished; but we paid little attention to them, being occupied with making a safe landing on Phobos, and expecting to make a systematic study of him from there.

"We must not attempt a landing on the outer side of the satellite," the doctor reflected, "for we should have no way of getting around to the inner side to make our observations. We must go within her orbit, and then as she comes past allow her attraction to draw us gently toward her."

We had quickly overtaken and passed Deimos, far within her orbit. I was keeping a close watch for Phobos out of the rear window as we circled about Mars at a distance which we calculated, from my weight on the scales, must be within the path of the satellite. We were circling in the same direction that the great planet was rotating, and yet we passed by things on his surface, which proved that we were travelling faster than his rotation. The doctor noticed, with his telescope, a brilliant snow-capped peak of a great mountain towering up from a small island. The contrast of the snow peak, with the darkish green waters all around it, was the most pronounced thing visible on the great planet, and he decided this must be the white spot detached from the polar ice which our astronomers have frequently observed at about twenty-five degrees south latitude, and to which they have given the name Hall's Island.

"I am afraid we have not appreciated the speed at which we have been travelling," remarked the doctor. "Phobos is very slow in overtaking us;" and he was just beginning to slacken speed still more, when he suddenly cried out,--
"Here she is ahead of us now! We have overtaken her, instead of waiting for her to catch us!"

And, true enough, we were gradually approaching a small brownish mass, feebly illuminated on its outer half by the sun, and more faintly still on its inner half by reflected light from Mars.

And how shall I describe that queer little toy-world which we were gradually overtaking? Imagine, if you can, a little island, less than a third the size of the Isle of Wight, tossed a few thousand miles into space, and circling there rapidly to avoid falling back upon the greater sphere. Imagine that flying island devoid of soil, of trees or vegetation, of water or air, of everything but barren, uncrumbled, homogeneous rock, and you have some idea of the unadorned desolation of Phobos, into which we were slowly sailing, or falling. There was not even the slightest trace of sand or scraps of rock, such as time must have abraded from even the hardest surfaces, but the reason for this soon became apparent.

The doctor feared steering directly against her as we approached, lest we should land with a crash. We had already reached her and were travelling along her inner side. Although we were very near her, she seemed to have very little attraction for us. Then he turned very much closer, but as soon as the influence of the rudder was released, we seemed to leave her instead of falling upon her as we expected. We were still travelling faster than she was, and had we steered directly against her, we would have crashed and bumped against her protuberances. Still there seemed to be no other way to make a landing. In order to estimate the amount of such a shock, the doctor calculated, from the best information he had of her size and a guess at her density, that she would attract the projectile and its entire load with a force of only two pounds. That was not enough to cause any very great shock, and he decided to take chances at once, before we had entirely passed her. He turned the rudder hard over toward the satellite, and we came against her with scarcely any crash, but with a bumping and grating that continued until the rudder was eased back. Then, to our great surprise, we did not remain on the surface, but rose from it and sailed inward towards Mars.

"Something wrong here!" exclaimed the doctor. "She has no attraction for us."

"Well, how do you explain this?" I asked. "You say the whole projectile weighs only two pounds toward Phobos, when, just a short time ago, I weighed nearly eight pounds myself on the scales."

"True enough!" he cried; "the gravity of Mars must be dominant."

He began figuring rapidly, and then exclaimed: "We weigh one hundred and thirty pounds toward Mars, and only two pounds toward the satellite. Small wonder that we could not make a landing, with Mars pulling us away sixty-five times harder than Phobos attracted us! But this is very strange! I remember no mention of this in any of the astronomical writings, and it is as easily calculable on Earth as it is here. Moreover, this must cause everything that is loose upon Phobos to fall upon Mars. The great planet is tugging at everything the satellite has with a force sixty-five times stronger than her own!"

"Now, I am afraid those figures won't do, Doctor," I put in. "For, if what you say is true, what prevents the whole satellite from tumbling into Mars at once?"

"She would do so were it not for centrifugal force. The speed with which she whirls around the planet must just balance the force with which he attracts her, and thus she is kept in her orbit. But stones and loose things on this side of her centre are attracted more strongly by Mars than they are repelled by the whirling, so they must all have fallen to the planet. That is why the surface was perfectly barren. If Phobos always keeps the same side turned toward Mars, there may be rocks and soil on the outer side, and we could land there with a positive current; but we could not see the great planet, as I had hoped."

"I have had quite enough of this moon-chasing," I said; "let us be off for the large game at once!" and the doctor agreeing, we turned directly toward Mars.

BOOK II
Other World Life
CHAPTER I
Why Mars gives a Red Light

Our telescope was now pointed exactly at Mars, and we were observing every feature as we approached him. Compared with the illuminated crescent of the Earth, which we had studied when we were observing the Andes, our present view was infinitely vaster and more comprehensive. We were approaching the illuminated side of a planet, whereas we had then been rapidly receding from the dark side of one partly lighted at its edge. In our new vista there were remarkably few clouds. There were a few pale mists here and there over the seas, but no such heavy, black masses as had frequently obscured the Earth.

On Mars there were fewer large bodies of water, and a very much greater proportion of land. In fact, about the Equator, whither we were steering, there seemed to be a broad, uninterrupted zone of land, with occasional bays or inlets cutting into it, but never crossing it. An open sea of considerable proportions surrounded the great ice-cap at each pole, and it was apparently thus possible to travel entirely around the globe, either by sea or by land, as one might choose.

"Behold again the infinite wisdom of the Creator!" cried the doctor. "Although Mars is a much smaller planet
than our own, it is fitted for almost as large a population. The land is nearly all grouped about the Equator, where it is warm enough to live comfortably. On the contrary, on Earth there is no important civilization under the Equator, and most of the land is favourably located in the north temperate zone. On Earth the intervention of great oceans between the continents kept the population restricted to Asia and Egypt for centuries, and to the Old World for a still longer time. But here, this band of continuous land has made it easy and natural to explore the whole globe, and its inhabitants have had ample time and opportunity to distribute themselves."

But by far the most wonderful thing that we had been observing for a long time, and which became more remarkable as we approached, was that the entire planet, seas and continents alike, gave off a reddish light. This tinge of red had been visible ever since we had left the Earth. Much further back we had observed that it seemed to extend a little beyond the outline of Mars, and we now saw that even the white light from the snow-caps had a faint tinge of red.

"For centuries the ruddy light of this planet has been remarked," said the doctor. "His very name was given him because of his gory, warlike appearance. Scientists have attempted to explain it by supposing that his vegetation is uniformly red, instead of green like ours. Still others, objecting that his vegetation could not possibly be rank or plentiful, or continue the same colour through all seasons, have supposed that his soil or primæval rock is of a deep red colour. But neither of these suppositions explain why his seas should give off a reddish light mixed with their green, or why the pure white of polar snows should be tinged with crimson."

We must have been still two hundred miles above the surface when the barometer began to rise feebly, indicating that we were already entering the Martian atmosphere; and, as we proceeded, the reddish glow spread all around us, and was even dimly visible behind as well as in front. We were still travelling too rapidly to plunge into the denser atmosphere or attempt a landing. Besides, we wished to explore the planet, and find life and civilization before choosing a landing place. And as we drew nearer, in a constantly narrowing circle, that red haze was all about us everywhere.

"There can be but one explanation of it," said the doctor at last. "This red is a colour in the Martian atmosphere. It seems very strange and almost impossible to us; but we must prepare ourselves for extremely unusual and even apparently impossible things."

But this seemed to disturb the doctor greatly, as also did the fact that we could no longer breathe with comfort the rare air which we had not found objectionable far back in space. Our returning weight made physical effort again necessary, and we were able to exert ourselves but little without panting and gasping. The rarest air we had used had shown a pressure of fourteen, and we were now compelled to increase this to eighteen in order to be comfortable.

"This Martian air is sure to give us trouble," the doctor said to me after considerable reflection. "In the first place, its red colour makes me fear it is not composed of the same gases that our air is. If it should turn out to be a mixture of oxygen and nitrogen, like ours, there is the possibility that this red matter which gives it colour will be poisonous to us. And even if it is not harmful, I do not think the air will have a pressure above ten or eleven, and we seem to need eighteen or twenty for comfort. I shall be very sorry if we have to return at once; but our supply of air is limited, you know."

"You keep a close watch through your telescope for those flying men you promised to show me," I answered. "If they can live in this air, I think we can manage it somehow. I will not go back while there is a breath left in me."

But as we drew nearer and nearer to the surface we did not discover the slightest sign of habitation. As far as we could see there was a great desert, barren of all vegetation, and apparently unwatered since creation. Our telescope did not detect the existence even of animals or creeping things.

"The wisdom of the Creator is probably quite as profound, but certainly not as apparent just here as it was somewhat farther back," I ventured.

"We must search over the whole surface of the globe until we find smoke rising," said the doctor. "That is the sure sign of intelligent life on Earth. There has hardly been a tribe of the lowest savages there which did not know how to light a fire, and this knowledge would be far more essential on a cold planet like this. Wherever we find smoke we shall find those intellectual creatures, corresponding to men on our planet."

Presently, far ahead of us, we discerned a small black cloud rapidly crossing our path. As we approached we examined it through the telescope, and soon saw that it was nothing less than an enormous flock of swiftly-flying small grey birds. This was our first acquaintance with what we afterwards found to be the predominating form of animal life on the planet. But the swift-winged cloud bore away from us, as if fleeing from the desert, and was soon lost to view.

It was not long after this that we perceived a broad stripe of brilliant green extending down into the dull expanse of the desert. In the middle of this verdant zone there was a weaving silver ribbon, which could be nothing else than a great river, along whose banks we could discern hundreds of hovering or wading birds, hopping lugubriously, or spreading their broad wings in a low flight.
As we now lowered rapidly to examine the soil more closely, we saw that we were approaching some great geometrical masses of hewn rock, whose regularity of design indicated that they were buildings of some sort. We at once decided to land and investigate these, even if we had to take up our search for intelligent life later.

We remarked that none of these enormous structures were square, or with right-angled corners, such as we were used to. They all seemed to be a combination or multiplication of a single design, which was nothing more than a massive triangular wall, with its right angle on the ground and its acute angle at the top. Sometimes two were built together, with their perpendicular surfaces joining; again, four were joined in the same manner, and one very large one was composed of twelve of these, radiating from a common centre, which, if they had quite joined each other, would have formed a gigantic cone.

I took another look at the tall, slender birds down the river, and remarked to the doctor,—

"These great structures are no birds' nests! You can't make me believe winged men would build with stone. These look more like giants' playthings than anything else."

"They appear to me like the gnomons of enormous sundials," remarked the doctor; "and, indeed, their uses must certainly be astronomical. With these one can not only tell the time, but the ascension and meridian of the sun and stars, and therefore the months and seasons."

We lowered and circled about above the largest one, which had twelve of the triangular walls built in circular form, with their common perpendicular line in the centre and their acute angles at the circumference. On closer observation, the twelve slanting sides, which radiated from the common peak, had a tubular appearance, and we were soon able to look down through almost a hundred great cylindrical chambers, which ran from a common opening at the top, slanting at every different angle down to the surface.

"These are nothing more than great, immovable masonry telescopes, for watching the stars in their courses!" cried the doctor. "Look, there is one perpendicular cylinder for observing just when a star or planet comes directly overhead, and these scores of other cylinders, at different angles, successively afford a view of a given constellation as it rises and then declines."

"Then they have built a separate masonry telescope, pointing in almost every conceivable direction, instead of having one movable telescope to take any direction," said I.

The wonderful size and massive construction of these was very striking, rivalling the pyramids of Egypt in their ponderous and enduring character. They were located on a raised plateau, whence the view in all directions was quite unobstructed. We came gently to land in the midst of them. To the rear, whence we had come, I could see the desolate waste of the desert. From the forward window we observed that the peaceful river kept a straight course from the cataract where it plunged over the plateau, through the green valley, between level banks, as far as we could see; and just at the foot of our plateau restfully nestled a city, whose massive and towering structures reached almost to our level. With the aid of the telescope we saw beings moving slowly about. Their form was upright and unwinged, but more than this we could not see. The deliberation and stately dignity of their movements comported perfectly with the majestic city wherein they dwelt.

"At last we have arrived at the boundaries of Martian civilization," exclaimed the doctor. "We will rest here and test the atmosphere; and if it permits us, we will then venture forth to measure our skill and knowledge against this race of builders. I hazard a guess that we will excel them in many things, for they are apparently only at the perfection of their Stone Age, while we finished that long ago, and have since passed through the Ages of Iron and of Steam, and are now at the dawn of the Era of Magnetism and Gravitation. Our minds are more fertile and elastic, for with this little movable telescope we probably obtain better results than they have done with their years of toiling calculation and patient building."

"You will be sadly disappointed if they so far excel us that they eat us up at two mouthfuls," said I. "As they move about yonder, they impress me as being full of power."

"They are as sluggish as elephants," he replied. "We are certainly more rapid in thought and action, and it is highly probable that we shall excel them in physical strength, as we have been built for three times as heavy muscular tasks as they."

"Still, if we cannot make them understand that we come peaceably as friends, they may attempt to kill us as the quickest solution of the question. And they are a whole race against two of us," said I, just beginning to realize all the difficulties that were yet ahead of us.

"Unless they are a very intelligent and magnanimous race, they will probably attempt to take us prisoners," he answered. "It is the mark of an enlightened nation to welcome strangers whose powers are unknown. A primitive race fears everything it does not understand, and force is its only argument against a superior intelligence."

Thereupon I immediately began a thorough overhauling of all the arms and ammunition, while the doctor prepared to test the air. There was a tone of confident exultation in his voice when he spoke again.

"This redness of the air will not trouble us a whit. Look! you can see no tinge of red between here and that huge
wall yonder, nor anywhere along the ground as far as you can see. It is so slight a colouring that it is only noticeable in vast reaches of atmosphere, like the blue colour in our own air. See here, where a small cloud obscures the sky there is no ruddy tinge. There is no more colouring-matter in this than there is indigo in our own air. The amount of it is so infinitely small that it will never trouble us. Now, if it only contains oxygen enough, we are sure of life in it."

"Yes, if they will leave us alive to breathe it," I added, counting out seventeen cartridges for each rifle.

"The air outside shows a pressure of only eleven, while we have eighteen inside," he said. "I will bring in the discharging cylinder full of the outer air, and by keeping it upside down the lighter air will remain in it. Then, if a candle flame will burn steadily in it, the oxygen we need is there."

Suiting the action to the word, he carefully drew in the inverted cylinder, and cautiously brought a lighted candle into it. To our great delight the flame burned for a moment with a brighter, stronger light than it did in the air of the compartment.

"Hurrah!" cried the doctor, as happily as if he had just earned the right to live. "It seems to have more oxygen than our own air, which will make up for the lesser density."

Then he put the lighted candle in the cylinder, and quickly discharged it outside upon the ground where we could see it. The flame had almost twice the brilliancy that it had had inside.

"Our scientists who have sneered at the possibility of life on Mars, because of its rare atmosphere, have overlooked the simplicity of the problem. They delight in propounding posers for Omnipotence. If a Creator dilutes oxygen with three parts of nitrogen on one planet where conditions make a dense atmosphere, why should He not dilute oxygen with an equal part of nitrogen on a planet where the air is rare? Air is not a chemical compound, but a simple mixture. When a stronger, more life-giving atmosphere is needed, let there be less of the diluting gas. The nitrogen is of no known use, except to weaken the oxygen."

"Let me out into it, if you say it is all right," I cried. "I am tired of this bird-cage."

"Put on the diver's suit and helmet, and I will weaken the pressure of the air gradually, to prevent bleeding at the nose and ears which a sudden change might cause. When you are used to the low pressure, you can throw off the helmet and try the Martian double-oxygenated air."

I hurriedly donned the queer, baggy suit and the enormous helmet with the bulging glass eyes, and then connected the two long rubber tubes which sprang from the top with the air pipes which led to the doctor's compartment. He put in the bulkhead, and I went to the port-hole to unseal it. As I glanced out the little window, I thought I saw a light very near the mica. Was it our candle flame that something had lifted? The thick glass of the helmet blinded me a little, and I approached the window and peered out, coming face to face with a Martian, whose nose was pressed against the mica! What a rounded, smooth, and expressionless face! But what large, deep, luminous eyes!

I sprang back from the window in surprise, but not more quickly than he did. Just then the projectile rolled over slightly with a crunching noise, and I hear the thud of a heavy muffled blow on the doctor's end. Suddenly he pulled away the bulkhead and whispered to me excitedly:--

"They are all about us outside--dozens of them! They are examining the projectile and trying to break it open. If they strike the windows, it will be too easy."

The projectile tottered a little again. There was a heaving noise, and one end rose a little from the ground.

"They are trying to carry us off, Doctor," I cried. "You must turn in the currents and fly away from them."

The projectile was just then lifted awkwardly, and wavered a little and pitched, as if it were being carried by a throng struggling clumsily all about it. The doctor sprang to his apparatus and turned in four batteries at once. We shot up swiftly in a long curve, and from my window I could see the circle of amazed Martians, standing dumbly with their hands still held up in front of them, as they had been when the projectile left them, while they gazed open-mouthed into the sky at us.

CHAPTER II

The Terror Birds

"They must have thought the projectile was another chunk fallen from Phobos!" I exclaimed; "and now they can't make out why it should fly back to the satellite again."

"The more we mystify them, the more they will fear us," said the doctor. "I am going to make a swift downward swoop now, as if we would crash through the midst of them. Then perhaps they will let us alone till we are ready for them."

He had scarcely finished speaking when we shot down in a long curve, like the swing of a pendulum, apparently making directly for the group of Martians. They were not seized by any quick panic; they were too phlegmatic for that. But just as the projectile threatened to smash into them, they seemed to realize the danger, and to grasp the idea that it was being operated and directed by some power and mind inside. Then they turned, scrambling clumsily over each other, and fled with the awkward precipitation of a rhinoceros in a hurry. Our
pendulum motion swung us up a little before we would have struck them, but they had scattered and were scurrying to hiding-places behind the walls of the masonry telescopes. We continued our flight to the edge of the plateau, whence we could get a better view of the city and hold a more commanding position.

"None of these who have seen our aerial evolutions are likely to trouble us again," remarked the doctor. "But they will quickly spread the news to the city, and we must be where we can watch everything that goes on there, and hurriedly prepare for the worst they can do to us. We will seek the principal approach to the plateau and defend it."

His ideas had suddenly become altogether warlike. I liked the excitement of it so far, and hastened to agree with him. We came to land in a sheltered part of the main road leading to the plateau, and prepared to emerge and set up our telescope where it would sweep the city.

"Shall we try this air on the dog before you go out?" inquired the doctor in all seriousness.

"Try it on the rabbit if you wish, but not on Two-spot."

He put Bunny into the discharging cylinder and pushed him out. The meek little animal seemed quite delighted at being released. He hopped about playfully, skipping much higher and farther at each hop than I had ever seen him do before.

This reassured me, and I put on the helmet again, and opened the port-hole. As the rarer Martian air swept in, my suit swelled and puffed to its fullest capacity, by the expansion of the denser air within it. I was so blown up that I could scarcely squeeze myself out of the port-hole. It was like a red misty day outside, though there were no clouds. The sky was a perfectly cloudless dull red, and the coppery sun was shining almost overhead. His orb looked less than two-thirds the size it did from the Earth, and one could look at its duller light fixedly without hurting the eyes. Phobos was also faintly visible, steering his backward course across the ruddy sky. The thermometer showed a temperature just above freezing, but I was perfectly warm within the diver's suit and its envelope of air. The red haze and utter lack of breeze added a deceptive appearance of sultry heat.

I was gazing back toward the Gnomons, when suddenly a group of the Martians we had first seen came around a turn of the road and over a knoll into full view of us. They were plainly surprised beyond all measure by my strange appearance. My puffed and corpulent figure, my bulging face of glass, my two long rubber tentacles extending back into my shell, must have made them think I was a very curious animal! Also they were probably surprised at seeing any living thing come out of the mass, which they must have thought had fallen from their moon, for she was always shying things at. And I now had my first chance to study their appearance closely.

"Doctor," I said softly, to see if he could hear me through the connecting tubes. As I had hoped, they proved to be very good speaking-trumpets, and I heard his answer noisily.

"Speak lower; I hear you easily," I said. "There is a party of them coming down this road to descend to the city. They have stopped upon seeing me. They are nothing but men like ourselves. I see no wings, horns, tails, or other appendages that we have not. They are just fat, puffy, sluggish men, very white and pale in colour, and covered with a peculiar clothing that looks like feathers. I seem to be a far greater freak to them than they are to me."

Had he been a million miles away, I should have known that it was the doctor answering, from his unsurprised and matter-of-fact tone. I imagined I could see the exact expression of his face as he said."

"After all, then, man is the most perfect animal the Creator could make. From a mechanical standpoint he needs nothing that he has not, and has nothing that he does not need. However you change him, you would make him imperfect. Physiologically he may be much the same on all the planets, but there is room for the widest variations on the intellectual and spiritual side."

"Do not forget that my patriarchal ancestors record that God made man in His own image, upon which there could be no improvement," I put in.

"Yes, but modern scientists would have us believe that your patriarchs would have written a different fable if they had understood the theory of evolution. It appears that man is really a little lower than the angels, by being material and ponderable and visible, but the general image may be the same. Perhaps upon the various planets it may be that the same lines of differences prevail, as between the heathen tribes and the civilized people on earth. There at least we are sure that physiologically no marked difference exists between the lowest savage and the wisest sage."

"Except, perhaps, that the savage may have the best digestion," I added. "Those look as if they had but few troubles and plenty to eat. I see no wrinkles or hard lines. Their forms and features are gracefully rounded. Their eyes are larger and stronger, with a liquid depth suited to this soft and weaker light. None of them wear beards, and very little hair is visible. I must say they do not look at all warlike. If we could only make them understand that we are friendly, I think they would gladly bid us to a feast of freshly-cooked meats and good wines, and ask us, chuckling, for the latest after-dinner stories that are current on Earth."

"Make friendly signs to them, and see how they behave," he suggested.

I slowly waved my hand to them to approach, and extended my arm as if to shake hands. While talking with the doctor I had stood perfectly still, and they had been warily watching me all the time. When I moved and stretched
out my arm, they took fright and fled precipitately.
   "I have scared them away, as if they were a lot of roe deer!" I exclaimed.
   "Then let us hasten preparations while they are gone," he replied. "If you can stand the pressure I have given
   you, it will be safe to throw off the helmet and suit."

Upon lifting the cover from my head, I caught a draught of fresh cold air that was unspeakably invigorating. I
drank it in deep breaths, and felt like skipping about for joy. Kicking off the suit that trammelled me, I put it and the
helmet back inside and closed the port-hole. Then the doctor pulled away the bulkhead and breathed the mixed
atmosphere, half-Martian from my compartment and half-Earthly from his. He suffered no inconvenience from the
sudden half-way step toward a lower density, and presently he emerged into the exhilarating air with me.

"This atmosphere has a stimulation in it like thin wine, and it gives me an appetite. I feel strong and virile
enough to tip Mars topsy-turvy," I said. "At least, let me get some cigars to smoke while we are arming our
stronghold."

When I went in for the guns, I put a handful of Havanas in my vest pocket, and emerging, I laid the rifles handy
and proceeded to light a weed. I was watching the bright flame of the match, and puffing with gusto at the fragrant
smoke, when from another direction a second squad of Martians came into view very near us. They immediately
halted and gazed at us in open-mouthed wonder, which soon changed to a look of horror. Remembering the pipe of
peace among the American Indians, I drew out a cigar, and hastily striking a match upon my trousers, I held the
weed and flame toward them. Not a man of them stayed to see any more. Their flight was more precipitate than the
other party's had been.

"It was your smoke they were afraid of," said the doctor. "Whenever you puffed, I saw them looking at each
other blankly and dropping back a little. They have taken you for a fire-eater and a smoke-breather, and when you
drew the flame from your lungs it was too much for them. But all this serves our purpose of frightening them. They
will spread strange stories in the city below!"

I helped him carry out the telescope, and we placed it in a commanding position. Then we propped up the broad
shields, so that each of us could crouch behind one, and I laid a broadsword and rifle handy to each. Then we put on
the linked-wire shirts under our coats, buckled the revolvers about us, and, as it was rather cold, we each put on a
thick pair of gloves and a heavy topcoat.

The doctor, who was carefully watching things down in the city through the telescope, cried out to me
presently.--

"There is wild commotion and great excitement down yonder by the great palace. The news has reached them!
They are preparing to come in force to take us!"

"I wish I knew what their sign of peace is, we might save a conflict," said I. "Perhaps our fire-arms won't harm
them."

"More likely they will blow them all to pieces," answered the doctor. "But we must not fire unless it becomes
absolutely necessary to defend ourselves, for if we kill any of them, they will then have cause to deal with us as
dreadfully as they can. We cannot hope to overcome them all. It will be enough to demonstrate our supremacy, so
that they will allow us to live among them. Therefore, let us simply defend ourselves and do nothing offensive, thus
showing that we are peaceably disposed."

"You cry peace, but look at the great army they are sending against us!" I exclaimed. "There are four
companies of foot soldiers marching through the streets, and each man is armed with a very long cross-bow and
wears a brightly-coloured bird-wing on his forehead. The streets are filling with people to see them pass. Now three
more companies wheel out of the palace, but they have no cross-bows. They are whirling something around their
heads."

The doctor anxiously awaited his turn at the telescope, and as he looked he clutched his pistol though they were
still several miles away.

"Those are slings they are whirling about their heads," he said. "And the commander of each company rides an
ambling donkey, and wears a heavy plaited beard and long braided hair, without head covering."

"But look further back, coming out of the palace now!" I cried. "What are those strange, stately animals far
behind the soldiers? I can see them with the naked eye."

"Donnerwetter! what towering birds!" he muttered under his breath. "Like ostriches in form, but as tall and
graceful as a giraffe! There is a man riding astride the neck of each of them, yet he could scarcely reach half-way to
their heads!"

"Are those monstrous things birds?" I demanded. "Let me look. What long and bony legs they have! They
would stride over us without touching our heads; but how they could kick!"

"And how they could run!" put in the doctor. "See, they stride easily over seven or eight feet with a single step.
They must be messenger birds, for there are only four of them, and their riders are not armed."
"They may have hundreds more of them in reserve, and they could fight far more viciously than the men. See what a wicked beak and what a long muscular neck they have. They could crush a skull in a twinkling with one swift swoop of that head! I will fight the men, but I will take no chances with those birds!"

Although these strange, small-winged creatures had started long after the soldiers, they had quickly passed them, and were now beginning to mount toward our plateau. They were making swift detours at intervals, as if to reconnoitre. We were hidden behind our rocks and shields, and the riders could not see us, and they had evidently not yet seen the brass barrel of our telescope. It would be folly for them to attempt to come up the road we were guarding, for we could easily heave boulders over and crush them. I had already put my shoulder to an immense rock near the brink, to see if it was as heavy as it looked. I found it porous and crumbly, and no heavier than so much chalk. Up the roadway the great birds climbed with wonderful ease. Their riders were evidently looking for us without any idea where we were.

"I won't see those elephantine bipeds come any nearer to me!" I exclaimed, and rushing to the boulder, which was certainly four feet in diameter, I toppled it over the brink, and expected to see it carry everything down before it. It rolled slowly down the steep bank, with hardly a third the force and speed of the same mass on Earth. This discouraged me, but I watched for it to reach the foremost bird. He was surprised by it, but made one step sideways, and, lifting his great right leg, the stone rolled under him without any damage. He gave a queer, guttural croak, accompanied by a most violent motion of the head and neck. The other birds, thus warned, dodged quickly sidewise, and avoided the slowly rolling boulder; but all three of the riders were thrown by the swift lateral movement of the birds. The astonished men picked themselves up slowly from the bushes and approached their birds. But they could scarcely reach with their hands the lower part of the neck where they had sat.

"Unless they are good jumpers, they cannot mount again without a ladder!" said the doctor.

"Jumping is easier than standing still here," I interrupted. "I can jump ten feet high with no trouble."

"Yes; but these Martian boobies haven't your muscles. Aber Blitzen! did you see that fellow mount his bird again?"

I had seen it, and I do not remember anything more wonderful than this operation, which was repeated for each rider. The man went in front of his bird, turned his back, and stooped forward. The bird then curved his long neck to the ground, and put his head and neck between the legs of the rider, who clutched tightly with his arms and legs. With a swift, graceful swing, the bird lifted its head on high, carrying the rider as if he were nothing. When the great neck was again erect, the man slid carefully down it to his place, much as one might slip down a telegraph pole. Then two of the birds turned back to the city as swiftly as they could go, and the other two took separate side trails and soon disappeared.

CHAPTER III

The Armies of Mars

As the two returning birds passed the marching soldiers, their riders evidently delivered some message to the captains, for the soldiers suddenly broke forward in a run, using their long cross-bows with great dexterity as jumping staves. Placing the outer end upon the ground ahead of them as they ran, they leaped and hung upon the cross-piece with their hands. The springy resistance of this tough wood imparted to them a forward motion with its rebound, and they scaled great distances at each jump. The whole company did it in concert, and they made almost as great speed as if they had been riding bicycles. The slingers were consequently left far in the rear.

Less than half way up the incline the archers stopped, arranged their bow-thongs, and selected feathered arrows from a pouch slung over their shoulders.

"They can never hit us from that distance!" I exclaimed; "a rifle would not carry so far."

"You forget the weak gravity which will bend their course down very little, and the thin air which will barely resist their flight; this is a model planet for archery," he answered. "Quick! drop behind your shield! They have fired the first volley!"

A torrent of the shafts fell all about us, and many pelted against our shields. Those which struck the soft earth of the bank sank into it and stuck there, but those which struck our steel were shivered and broken.

"Sit still and let them shoot away their arrows," I whispered. "This will soon be over."

The next volley came with a little more force, as if they had marched further up the hill. One or two arrows fell very near me, and I reached for them to examine their construction. They were made of the hollow, filmy stock of a rather tough reed, and were pointed with a chipped stone tip, which was brittle, but not harder than porous chalk.

"That stuff wouldn't pierce my two coats, to say nothing of the linked steel shirt," I sneered. "I will show them what fools they are!" and I walked boldly out to the brink and faced them. They let fly a quick volley with a concerted shout. As I saw the arrows start, I turned my back and bent down my head quickly. Perhaps a dozen of the slim reeds pelted me, and then I stooped over and gathered up as many as I could find, and broke them all in my hands before their eyes.
This sent a hum of excited jabbering through their ranks, and they fired no more. I stood watching them, and presently I grasped my two hands together and shook hands with myself, to try to convey to them the idea that we were friendly; but it must have carried no meaning to them. By this time the slingers had come up, and I retired behind my shield to await their action. The archers seemed very glad of their arrival, and yielded the foremost place to them. I noted their operations carefully, and saw them place something, which did not look like a round stone, in the pocket of their slings, and then they whirled it long and cautiously. Suddenly they discharged it with a swift movement of their bodies backward, which landed them on one knee.

"Wide of the mark!" I cried, as the missiles sailed off far to the right of us. But just before landing they bent a sharp, surprising curve, and lacked but little of hitting us behind the shields! The things they had thrown were the thin, concave shells of a large nut, and the trick of discharging them gave them their peculiar flight.

"I don't like this throwing around the corner!" exclaimed the doctor. "With a little truer aim they will be able to hit us behind anything."

"Hurry, bring your shield over behind mine, and face it the other way," said I; "then we will crouch between the two in safety."

He did this just in time, for some of the next volley actually curved around and hit his shield, but none struck mine in front. However, the shells which fell near us were of light weight, and would not have bruised us much with heavy clothing on. Presently their pelting ceased, and we concluded that they were planning something new. We decided to let them know that we were not hurt, so we emerged; and I tried throwing the shells back with my hand, but I could not control their erratic course. When they saw this they jeered at me, and Iitched to treat them to just one pistol shot, only to show them what child's play their fighting was! Presently we saw what they were waiting for. Far down the road the two great birds were returning harnessed together, and dragging behind them an enormous catapult. Tied across their backs were two stout darts, seemingly twelve feet long and three inches square. Each of them had a wicked-looking barbed tip.

There was a pleased and confident jabber among the slingers and archers below as the birds arrived. The catapult was turned toward us, and lashed tightly to stakes driven in front and behind. Then the birds were hitched to the cord of the immense bow, and they pulled it far back, until the men made it fast in a notch. The cross-piece had now become almost a half-circle, quite ten feet in diameter. The captain of a company of archers acted as gunner, and carefully adjusted the catapult, aiming it evidently at our shield. Upon seeing this we placed the two shields together, and leaned them both inward toward us, so as to make their angle with the upward course of the dart more obtuse, and thus cause a glancing blow instead of a solid impact. Crouching under the steel shelters, we awaited the dart.

Whiz-z-z it whistled up through the thin air! Bimm-m! it struck the top of our outer shield, and glanced off as we had hoped. The outer steel rattled and banged against the inner, and both shields pressed hard over against us, but not the slightest damage was done.

We went out to watch them load the second dart. They evidently saw the impotence of the glancing blow, and were noisily discussing it. A captain of the slingers was arguing hotly with the gunner, who was finally persuaded to take his aim a little lower. Then a hum of approval went through the throng.

"They do think a little, but they are not secretive!" I sneered, flopping our inner shield over flat on the ground. "Come, sit on this, Doctor, and we will lean the outer shield over us, and snuggle in between them as cosy as two oysters! Let them fondly imagine they can shoot us through this pasty soil, and keep their own counsel better after this!"

It was not a bad guess on my part; for the second dart struck the edge of the cliff, bored through the loose soil, and thumped our lower shield with a dull thud that lifted us from the ground. But the point and edges of the dart were blunted, and crumbled with the blow, and I could find no dent in the shield.

"See, the birds are returning to the city in haste for more darts!" said the doctor. But I was interested in examining the first dart, which had fallen a few hundred feet behind us. Its shaft was of roughly-hewn, spongy wood, and it weighed far less than half the mass of soft pine would on Earth. Its tip was not metal, but chipped stone--crumbly, like the arrow-heads. Either they did not know the metals, or they were too rare to be used in their arts. And it was to be supposed that they would use the hardest stone they had for arrow-heads and dart-tips.

I carried the shaft easily upon my shoulder forward to the edge of the cliff. This surprised even the doctor a little, for four Martians had been necessary to put it in place upon the catapult. It must have astonished them still more, for they were staring at me so blankly that I was tempted to toss the dart down their gaping throats!

"Give them just one dose of their own medicine!" suggested the doctor.

"Perhaps I had better teach them to keep their dangerous weapons at home," I said; and, balancing the dart easily above my head, I aimed it carefully at a dense group around the catapult. I threw my whole force into the thrust, and sent the shaft whizzing down at them. Then I staggered back, quite exhausted by the effort and gasping..."
"Good God! You have impaled two of them upon the dart!" cried the doctor, "and it is causing a panic in the whole army!"

And when I sprang up to look, I saw two writhing Martians, much shrunk in size and dying upon the dart. The terror-stricken archers and slingers were scattering and scurrying in every direction, regardless of the shouted orders of their captains. The foremost of the impaled men wore a beard, and was no other than the gunner of the catapult.

"I am sorry for the poor devils!" I exclaimed. "I had no idea they were so soft and tender. They have shrunk like a pricked balloon!"

"They thought they could prick us like that, and let the life ooze out," said the doctor. "There is no danger that they will shoot any more at us. The whole army is afraid that you will throw down the other dart."

Nevertheless, other companies of archers and slingers were seen leaving the palace, and the birds were already returning with two more darts. And the soldiers below were gaining courage and responding to the rallying cries of the captains, who were halloing and pointing toward the edge of the cliff, down in the direction of the cataract. I looked quickly that way, and instantly shouted,--

"To the rifles, quick, doctor! The other two birds have ascended the cliff, and are racing toward us along its edge. Take careful aim at the head of that front one. Afterward, let drive two random bullets into his body!"

Urged on by their riders, who with their hands swayed the long necks of the birds in unison with their rhythmical stride, these two-legged giraffes, with the wild look and sharp beak of an eagle, swept menacingly toward us.

"Ready now!" I cried, as the foremost came within fifty feet of us. "Fire!"

Two sharp reports almost simultaneous, with a less thunderous explosion than on Earth, but singing in a higher key and flaming vastly more, startled and terrified the Martians. Then crack! crack! bang! bang! four other shots in swift succession, followed by the terrific croaking of the wounded Terror-bird, which fell ponderously forward, kicking violently and beating the ground wildly with its head.

Seizing my broadsword in a flash, I dealt it such a blow upon the neck as quite to sever the head from the body. There was a gush of red blood; and those who have seen the antics of a decapitated chicken, may correspondingly multiply the corpse and imagine the confusion that now ensued.

"Stand ready for the second bird!" I shouted to the doctor; but on looking, I saw that the other animal refused to be urged forward, after seeing the fate of his companion. His rider was half-hearted in his efforts, and was watching the forward rider, who had been severely thrown with the bird's fall, and badly bruised by the kicking and threshing. He seemed to realize that he was in our power, and was thoroughly desperate. With a wailing cry he rushed at me with open arms, as if to embrace death, for I still held the sword. Dropping the weapon, I grappled with him, catching him about the wrists, which shrank under my grasp. He seemed to have scarcely the strength of a child; and everywhere I touched him, his flesh yielded like the flabby muscles of a fat baby. I bent him over backwards, then swung him around and caught him by the shoulders, and whirled him around my head. Finally, I tossed him over the edge of the cliff, where he landed among some bushes, and scrambled down as fast as he could, glad to have saved his life. The other rider had turned his bird back toward the cataract with all possible despatch.

"The whole army below us is now thoroughly demoralized!" said the jubilant doctor. "Many of them fled dismayed on hearing the firing, and others screamed and ran away when they saw you decapitate the bird. But your wrestling with the rider, and flinging him about like an infant, was an object lesson none of them could stay to see repeated. I saw one trembling fool slink back to cut the thong of the catapult, so that we could not use it on them. They have wholly abandoned the attack!"

"If this is the worst they can do, I will undertake to make myself king, and you prime minister here, within twenty-four hours!" I ejaculated, decidedly pleased with the idea. "And I will maintain supremacy with a standing army of a thousand Terror-birds!"

"The consciousness of superior strength always brings that desire for conquest," answered the doctor. "We must not allow it to master us, but we must push our advantage. Look! the panic of the first ones reaching the city is spreading to the new companies marching out. They are trampled over by the fleeing host, they turn and mingle with the frightened mob in one struggling, terror-stricken mass! Come, let us be into the projectile and after them. With a few booming shots above their heads, we will make them think their Thunder-gods have come!"

CHAPTER IV

The Strange Bravery of Miss Blank

Telescope, rifles, and shields were tumbled into the projectile pell-mell, and without stopping to close the port-hole, we steered towards the city as we mounted rapidly. When the soldiers, weary of running, saw us start, they were stricken with a new fear, and made all possible haste for shelter. When they perceived that we were rising into
the red haze, they took a little courage, but still hastened.

"Perhaps they think we are mounting to the sky for more thunder and lightning," I suggested. "Little do they know the destruction we could do them with the handful of ammunition we have, if we really meant war as much as they at first desired it and now fear it!"

By this time we were almost above the thickest crowd of the fleeing army, while the most energetic runners and the Terror-bird that had turned back had reached the heart of the city; and we could see the alarm spreading like wild-fire to all its inhabitants. I was busy loading the rifles with the cartridges which the doctor had robbed of their bullets for the pickle-bottle experiment soon after our start.

"We will execute a little coup, to show them the difficulties of retreat when the enemy is armed with gravity projectiles," said the doctor. "Do you see that great gate of the city they are all making for? We will drop down there, just in front of them, and prevent their entrance. It will be better to keep the whole army outside the walls, if possible, for its absence and disorganization will make the rulers all the more tractable when we are ready to drop down into their city and make peace with them on our own terms."

"I must say you are a good general, Doctor!" I exclaimed. "You plan the campaign, and I will do the fighting."

The blank dismay of the soldiers when they saw us descending again, and their abject desperation when they perceived that we should land in front of them and cut off their entrance to the city, was pitiful to see.

"Doctor, do you remember the grand display and the proud strength with which these soldiers marched forth? Look at the difference now!"

"Oh, war! war!" he exclaimed. "The glory of its beginning! The terror of its prosecution! The misery of its end! Would that it could always be carried on by terrorizing the mind instead of by slaying the body!"

As we were about to come to land in front of the straggling multitude of soldiers, I fired a dozen blank cartridges as rapidly as I could work the rifle. This was at very near range, and although the explosions sounded weak to me, the excessive flaming of the powder added a new terror. The disorganized army stopped in dread; the stragglers pushing up from behind, and the frightened turning of those in front, crushed the multitude together and increased the confusion. Throngs of people, whose curiosity was still stronger than their fear, were coming out from the city. As they saw us float down and land, and then heard the firing, they turned and rushed within the gates again, ready to believe far worse stories than they had yet heard.

"We must scatter this rabble army and put it wholly to rout," insisted the doctor. "I will swing amongst them and over their heads, while you burn powder for them. If they won't scatter, use your revolver and wound one or two of them."

"No, I will not harm another man," I answered. "They are too weak and defenceless a foe, and are no match for us. Hereafter I will fight only with the birds."

We rose and sailed slantingly toward them, but they had already started to disperse. Those who had jumping-staves disentangled themselves from the crowd and scattered into the bushy wastes. I continued firing until my blank cartridges were gone, and then we landed just outside the entrance and emerged from the projectile to examine the gates and see if we could close and fasten them.

Within the wall those who had gained entrance during our last movements were rapidly retreating toward the centre of the city, warning all whom they passed. One single stately figure showed no fear, and paid no heed to the exclamations of the runners. The ampler dress and flowing flaxen hair indicated that it was a woman, and to our surprise, though she was well clothed, she seemed to be demanding alms of every one as she approached us. No one gave her anything, and occasionally a runner seized her arm and tried to persuade her to return. But she caught none of their excitement, and composedly pursued her course.

"Egad! This beautiful girl is braver than the whole Martian army!" I exclaimed in amazement, as she calmly approached where I was standing by the gate and extended her fair, plump hand. If she was asking alms, I had nothing to give her; but here, at least, was one pacific, composed, and reasonable person. Perhaps it was the queen, or a diplomatic envoy of the ruler!

"Now is the time to demonstrate our friendliness," I exclaimed, and reaching forth my hand I grasped hers in a warm clasp of welcome.

She looked up at me blankly. Her beautiful face carried no expression of satisfaction or surprise. Her transparent complexion was neither paled by fear nor flushed by pleasure. Her great dreamy eyes, of a deep liquid blue, wandered unfixedly in their languid gaze. Still holding her soft hand, which was far warmer than my own, I opened her fingers with my other hand and pointed at her pink extended palm as if to inquire what she wished. I watched her closely, but she made no sign, said nothing, looked nothing.

"Since I do not know you, I can think of no more fitting name to call you by than Miss Blank," I said, more to express my thought in articulate sounds than anything else, for I had no idea she would understand me. From her expression I could not judge whether she had even heard me, to say nothing of comprehending. She was looking
beyond me, through the gate, as if searching others from whom she might ask alms. Seeing none, she wheeled slowly about to return. Unwillingly I released her hand, and stood unspeakably puzzled by the whole matter. She was commanding in appearance, being taller than I by a few inches, not slim, but well proportioned. She had the stately serenity of a dreaming queen, but the blank, unresponsive soul of one who dwelt within herself; and though she saw, she did not realize the existence or meaning of anything outside.

"Doctor, will all your learning solve this riddle for me!" I exclaimed. "Can all the Martian women be like this? She is beautiful of body and strangely warm and winning to the touch, but as cold of heart as the drifting snow that suffocates a poor lost lamb. She has had a strange influence over me; a puzzling, baffling attraction. A suggestion of something delicate and subtly charming, which, when one seeks to seize and to define, retires icily behind the drawn curtain of her soul."

"I hope you won't play the lost lamb to her snowdrift!" he sneered, in a way that I resented. "One would think she had hypnotized you on the spot! And she must be in a trance herself, for she had not sense enough to fear us."

"Those who have the most sense fear us the least!" I retorted.

"But fear is our sharp weapon now," he answered; "and some of the stragglers, looking back, saw you stand there holding her hand in a manner far from warlike. They will report this to the rulers unless we forestall them. Come, fasten the gates tightly upon the inside to keep the soldiers out, and I will sail over the wall to pick you up."

"Doctor, we make our peace at once, and fight no more with the brothers of this girl," I said with decision.

The massive gates were of hewn stone, turning in sockets at their outer corners above and below. They swung as easily as if hung upon hinges, and when closed a slab of stone came down to bar them. I made them fast, and then called out to the doctor.--

"Don't come for me. I have found a jumping-staff, and I think I can leap to the top of the wall."

It was a sheer fifteen feet of solid masonry, but my chief delight since landing on Martian soil was the inordinate springiness of my leg muscles against the feeble gravity. I ran and sprang lustily with the aid of the crossbow, and I remember the doctor's surprised look when he saw me clear the entire wall without touching the top and land safely with a very mild jolt on his side.

A short oblique ascent of the projectile brought us over the city, and revealed to us the condition of desperate panic into which the wild reports of the soldiers and the bird-rider had thrown the frantic populace. The soldiers still within the walls could not restrain the people, or did not try. If there was any government, it lacked a head or could not command attention. The stubborn instinct of self-preservation was king. Distracted throngs surged out at one gate, to separate and waver and hesitate, and finally to fight for a speedy entrance at another. On one side soldiers were apparently ordering people down from the wall, while on another the excited populace was hauling sentinel soldiers from the same elevation, lest our attention should be attracted. Within, strong men were weeping and wailing; without, nervous men were haranguing the vacillating multitude; but more were stolidly pushing with the rabble or being hustled by it.

Only one sign of order and forethought was apparent. Evidently for better safety and for an easier defence, the women and children had been taken to a central park or pleasure ground, and left there with a small guard of soldiers. The men to whom they belonged had apparently all gone elsewhere.

"Doctor, we must put an end to this fear and frenzy at the earliest possible moment. If we are not destroying those people, we are exciting them to destroy each other, which is equally blameworthy. We must go down at once, but we had best avoid the frantic men. The women seem far more reposeful. Let us drop quietly into that open field in the park, and I will make friendly signs to the women, pat the children on the head, and give them all to understand that we mean no harm."

He evidently saw that we had quite overdone the scare, and was as much impressed by the terrible picture below as I was. We turned down without delay, and landed quietly behind a clump of trees. I took a tin of sweet biscuits under my arm, and the doctor following me, with a generous handful of his trinkets and tinsel toys, we left the projectile, and rounding the grove of dwarfed trees we approached the romping children first. I patted their flaxen curls, lightly pinched their cheeks, and handed each of them a sweet biscuit. Then, while the doctor distributed strange toys amongst them, I put on my most courtly ways and addressed myself to the women. Their first impulses of fear had been somewhat allayed by our attentions to the children, and I bowed profusely and made bold to kiss the hands of a few of the youngest of them. Each of these looked to see if I had left anything visible or harmful on her hand, from which I judged the custom was wholly strange to them. The others looked on askance and whispered excitedly among themselves.

One of the soldiers who had seen us approach, but offered no resistance, had now started to run, as fast as his jumping-staff would carry him, toward the palace. I knew at once that this meant some new development, and I hoped it meant a report of our friendly actions and a truce all around. But the doctor reminded me that we must be prepared for surprises and treachery. Therefore we re-entered the projectile, and out of the sight of all the Martians I
re-loaded the rifles, and then we waited a long time.

Our patience was finally rewarded, for we saw the soldier returning, slowly leading a woman. In her left arm, which the soldier held, she carried something white which wriggled occasionally. All this we considered so favourable a development that we went out again, bowing to the women about us, petting the children, and looking as peaceable and amiable as the politest of Earth's people. But it may have passed for imbecility, or worse, on Mars.

When I looked toward the soldier again, my heart began a queer thumping, for he was leading no other than the woman who had met us at the gate, and she was carrying our white rabbit, which we had released early that morning a long way from this spot.

"By all that is wonderful!" I exclaimed to the doctor, "if we have not fallen upon a country which is ruled by yon dumb queen, and she brings to us as a peace offering the only thing that we have lost!"

"Since when have potentates learned to beg, and forgotten to command and to exact?" he answered with half a sneer. "See, she still extends her hand to every one she passes."

And as the soldier, trained to revere a beard, led the woman directly up to the doctor, she stretched forth her pretty palm again; but if he had presumed to take it I could have struck him! To my cordial grasp I added a kiss this time, and then I raised my eyes slowly to her face, fearing to see that blank look again. There was no look in her eyes; they did not look, they only wandered!

The soldier, who still held her other arm, waved his cross-bow toward the palace meaningly, and a hush fell upon the murmuring crowd. I ignored him and spoke to her,--

"If thou art the queen, command me but by a look or sign, and I obey. And if thou art not the queen, then they should make thee one. Dost thou wish us to follow thee to yon palace?" said I; but the only mind that understood scoffed at my rapturous declamation.

The woman merely drew her hand from my warm clasp and stretched it out to the people, who crowded about and paid her no attention. Then the soldier, as if suddenly remembering, took the rabbit from her arm and handed it to me. She looked about at this, as if missing the snuggling animal, and I stared hard at the meddling soldier to reprove him for interfering with his queen, and gently restored the rabbit to her arm.

"The soldier wishes us to go to the palace," put in the doctor. "But we must not go unarmed. He may be leading us into an ambush. Let us take all of our arms and follow him."

Accordingly, we buckled on the swords, and took the rifles on our shoulders. As we dragged out the heavy shields, the soldier pointed to a group of donkeys laden with bags of something like grain. I waved assent, and the muleteer unburdened one of them and loaded the shields upon him.

"Why not take the telescope?" I suggested; "it is big and bright, and perhaps they may fear it too. Or we may wish to show its wondrous use." As I drew it out the crowd started back, but the soldier and the muleteer gingerly loaded it upon another donkey. Then the soldier took the woman's arm again, and pushed her extended palm around toward me, as if I would be unwilling to go unless I had it. My right hand held my rifle, but I was secretly glad that my left was free to clasp the woman's hand. The doctor walked behind to watch the muleteer, and thus we marched to the palace.

CHAPTER V
Zaphnath, Ruler of the Kemi

Two hieroglyph-bearing columns of red sandstone, strong and broad enough to have supported a Tower of Babel, formed the portals of the outer gate of the palace. A pair of Terror-birds, whose plumage was a pearly grey, stood sleepily on guard. Our soldier, who could scarcely have reached to the backs of the birds, lifted up his cross-bow and tapped upon their long necks. Acting perfectly in concert, the animals each engaged with its beak a wooden ring suspended high in front of them, and then, bending down their necks, the hempen ropes, to which the rings were fastened, hauled up a ponderous portcullis, made of slabs of stone, and thus afforded us an entrance.

As this stone gate rumbled slowly down again, we saw that we were shut into a vast courtyard, surrounded by a colonnade, whence cavernous passages led circuitously to the various compartments of the palace. Within the courtyard were drawn up in expectant readiness four companies of archers and three of slingers, in all, perhaps, seven hundred men, who gaped and stared at us.

The doctor touched my elbow, and whispered: "We should have landed in here with the projectile, which would have given us a means of ready escape."

"Remember the saying of General Grant," I answered. "'When you are frightened, don't forget that the enemy may be far more so. These soldiers have heard enough to make them believe us capable of anything. They would tear down the very walls, if we were to open fire on them. Besides, I could leap that courtyard wall and drag you with me.'"

Unsheathing our swords, as an object lesson to the soldiers, we followed our guide to the blind end of a long passage, which apparently gave entrance only to a small stone chamber. Following the soldier and muleteer, who
were now carrying our shields and telescope, we crowded into this and waited. Presently the entire chamber,
operated in some unseen manner, turned slowly half way round, so that its door now gave entrance directly to a vast
but gloomy and tomb-like audience chamber, where we were evidently expected.

Upon a massive throne of richly-chiselled stone a youth of scarcely more than five-and-twenty years (if judged
by earthly standards) sat gorgeously arrayed in vestments of richly coloured feathers, woven skillfully into the
meshes of coarse cloth. Longer plumes of changeable colours radiated from a wide collar which he wore, covering
his breast and back, and extending over his shoulders. The peach-blow of his fair cheeks was partly hidden by a
heavy false beard, plaited into stubby braids, which hung to an even line a little below the chin. His own soft, flaxen
hair peeped meekly out from under a wig of tightly curled grey strands, cropped all round to a level with the beard.
His feet and arms were bare, except for thin ribbons of downy, purple feathers, which circled the wrists and ankles.
No crown was on his head, but among the stringy wig-curls the sinuous body of an asp bent in and out, and the
curved neck and threatening head surmounted his clear brow.

To his right, round an oval table of highly polished stone, sat twelve wrinkled men, not one of whom but had
seen three times his years. They wore their own white beards, unplaited, and their feather clothing was less elaborate
and of simple grey, like the plumage of the Terror-bird.

Our soldier placed his right hand upon his cheek, and inclined his head slightly forward and to the right, as a
salutation to the ruler, and, leaving the woman standing by me, he and the muleteer retired. She seemed neither
surprised at, nor accustomed to, these surroundings. She made no salutation or obeisance to the ruler or to the old
men, and they made none to her. Withdrawing her hand from mine, she stretched it toward them, as she had toward
the commonest man outside. They paid her no attention, but the oldest of the men signalled to an attendant, who led
her back and placed her hand in mine again. That soldiers and counsellors alike should consider this necessary or
fitting seemed strange to me. The doctor jokingly suggested that they wished to keep me permanently hypnotized,
lest I should become dangerous again.

Having laid off our rifles, swords, and outer coats, I lifted my cap and made a low bow to the youth and to the
old men, but the doctor tried the salute of the right hand upon the cheek, as he had seen the soldier do. In answer the
youth simply looked toward the twelve, waving his hand towards us in a way which seemed to say to them,
"Gentlemen, behold the enigma!" Then, beginning with the eldest, the twelve jabbered at us in turn, apparently in
different tongues, some sibilant, some guttural, and others with the musical cadence of frequent vowel sounds.
Needless to say, each was equally incomprehensible to us, and we did not think it worth while to try German or
English upon them. When they had finished, they looked much vexed, and slowly wagged their beards. Then the
youth spoke something to them with a confident gesture toward himself. He arose, and began addressing us. I
suddenly stopped short in the middle of a sentence I was whispering to the doctor. It seemed as if the youth had
cеased making mere sounds, and had begun to speak a coherent language, a tongue which has lived ages while
others have languished into forgetfulness; a language whose words I understood, but yet the words carried little clear
meaning to me.

"Listen, Doctor! The boy is speaking Hebrew! Ancient and archaic in form, but yet Hebrew which I
understand!" And this is what he had said:

"Oh ye, who speak among yourselves, but understand only those who speak not at all, I, Zaphnath, revealer of
God's hidden things, will address ye in my native tongue, which none but me in all the land of Kem hath any
knowledge of."

"There be two of us in Kem, O Zaphnath, who understand that tongue. Speak on!" I cried.

But the boy stripped off his wig and beard, and, leaving the throne, hastened toward me and laid his soft right
cheek against my own with gentle pressure.

"Comest thou, then, from the land of my father, a stranger wandering into Kem, even as I came?" he asked.

"Nay, gentle youth, we came a vastly farther way, from another world, so distant that thou seest it from here
only as a twinking star in the night. But if, indeed, thou cam'st a wandering stranger into Kem, art thou then the
king?" He had resumed his wig and beard, and his proud seat upon the throne, and after he had translated my words
for the twelve old men, he answered me;--

"I am Zaphnath, ruler over all the land of Kem, without whom the Pharaoh doeth not, nor sayeth anything.
These are his twelve wise men, who do not believe what thou hast said, for there is no other world large enough for
the abode of two men, except the Day-Giver, whence they think ye have come. The Pharaoh may believe them, but I
will believe what ye tell me. He hath given me full power to treat with you, and hath taken refuge with all his
women in his tomb, and will not come forth until ye be appeased. Tell me in truth, then, are ye men, or gods? Ye

look not half so warlike as all the soldiers have described you."

I translated this to the doctor, but replied without waiting to consult with him;--

"We know but one God, who hath made all the stars, and all who dwell upon them. We are men to whom it
hath been given to travel the infinite distances which reach from one of His stars to another, and we are come to this one, not to make war but to find peace. We would have sought thee peacefully as friends, had not thine armies made war upon us on the plateau yonder. But our means of warfare proved far more terrible and dreadful here than on our proper star. Thus have we unwittingly slain two of thy soldiers and frightened all the army. We have with us the means to kill them all, but we seek a peaceable life here for a brief time, that we may learn your ways and test your wisdom, when we shall be gone again."

"The Pharaoh could have better spared a thousand men than the bird which thy lightning hath killed. For are not his slaves as the plenteous grain of a rich harvest, while his birds are but as the fingers of his hands. If ye came but to learn, 'tis well ye know these wise men, though, since I came to Kem, their profession hath fallen somewhat into disrepute. I doubt not but they could learn far more from thee than thou from them, but they will not do it. Whatever they do not know is not true in Kem, but what they know continues true long after common men know better. Now, wilt thou explain to me the mysteries the soldiers have reported to us? But first tell us which of all the stars it is thou comest from."

"Know then, O Zaphnath, that we call our star the Earth, and in her wanderings she hath now approached so near to the great Orb of Day that her rays are paled by his brighter light; she sets with him, and shines no more by night. But yet a few days now, and she shall triumph even over him, and, entering on his glowing disc, she shall be seen at mid-day, obscuring his light and travelling as a spot across his glory."

The old men wagged their beards as the boy translated, but he sprang to his feet with no little excitement, and exclaimed,--

"Meaneest thou that blue star with its attendant speck of white, which but a little while ago shone with great brightness as a Twilight Star?"

"That is the Earth, O Zaphnath, the world from whence we came," I exclaimed; and the youth again threw off his wig and beard, and rushing toward me, pressed first his right cheek and then his left cheek against mine, and then against the doctor's.

"Then ye are most welcome to the land of Kem, and we shall be friends for ever. For ye should know that my mother was barren all the years of her life until this same Blue Star came to shine wondrously, even in the presence of the Day-Giver, before his setting. It was then, under the beneficent influence of this star, that she gave birth to me. And when the star paled and wandered again I tarried not in the land of my father, but came strangely hither, to be ruler in a great land which my people had never known."

When he had resumed his seat again, I said, "All that I have told thee shalt thou see come to pass, and through this Larger Eye, which we have made to pierce the deep of space, thou shalt see more clearly that the Blue Star is indeed a great orb, where many men may dwell, and after she hath passed the Day-Giver, she will appear as a bright morning star again to announce his coming."

"Why now, if this be true, then every one of these old men must die. For Pharaoh's laws provide that whatsoever wise man faileth to predict such an appearance, or predicteth one which doth not occur, must lose his life. These grey-beards, always jealous of me, have said that the Blue Star, which beareth my destiny, hath disappeared, never to be seen again. Now, when they are slain, Pharaoh shall appoint you to sit in their places. Ye shall reign jointly with Zaphnath if it pleaseth you, and ye may choose what seemeth good to you of everything that is in the land of Kem and in all the countries which pay tribute unto Pharaoh. And he will give you as wives all the women ye saw in Long Breath Park, and an equal part of all the slaves and women taken in war will he give you also. For hath he not bidden me treat generously with you, even to his tributary countries and half his women?"

"We come from a star, O Zaphnath, where men desire many things and are never satisfied. But of all the things thou offerest us, we wish not one. We make no peace unless these old men be left alive. We do not know this country or its people, before where we are most unfit to rule them. We wish no slaves, but will pay a hire to one or two good men, who may do our daily tasks. And as for women, we never choose but one, and then only when we know her well and find her equally willing."

"Then ye are come from a most strange star indeed! But I must tell thee that the laws of the Kemi forbid even to the Pharaoh, who hath the first claim upon all women, to take to wife a woman such as her whose hand thou clingest to so warmly. What findest thou in her whose dumb tongue could never tell thy praises, and if 'twere loosened, her mind would still be dumb and silent?"

"Who is this woman, then, whom thou sentest out to meet us? She alone hath had no fear, and hath greeted us in a friendly and a welcome manner. Had it not been for her, we might still have been loosening our thunder among your soldiers, or flashing this lightning in thy face!" I said, half drawing my long sword as I spoke.

"She is Thenocris, a poor, unfortunate maiden, dumb of tongue and mind," he answered. "In my country we would call her mute and senseless, but here among the Kemi they revere such ill-starred creatures, thinking that because they act strangely, and look not upon the world as others do, their souls must be turned within to the
Our flesh is tougher and more solid than thine, yet 'tis not of iron. But tell me, what knowest thou of iron?"

'Tis true we are stronger than any birds upon our proper star, and that we kill with a thunder and a lightning. Our flesh is tougher and more solid than thine, yet 'tis not of iron. But tell me, what knowest thou of iron?"

"'Tis a rare, precious metal which we coin for money, but I see thou carriest much of it. Thy thunderers are made of it."

"And hast thou no metal, bright and yellow, such as this?" I asked, exhibiting my gold watch.

"Thou shouldst know that in our land the seizing of the right hand is a salutation of friendship and welcome, much the same as the pressure of the cheek is here. We had vainly tried to signal to your soldiers that we were friendly, and when this woman stretched out her pretty hand I was pleased to seize it warmly. Call thou a soldier now and send her safely home. Let the white rabbit belong henceforth to her. She hath unwittingly been God's friendly, and when this woman stretched out her pretty hand I was pleased to seize it warmly. Call thou a soldier later to say that ye had landed in the Park, pleased with our offering of the women. Then rose yon grey-beard and argued most wisely thus: That ye, being such strange creatures, had understood best what we understand the least; that thou hast learned the hidden thought of this dumb woman by long holding of her hand; that, as ye had been friendly to her, she might be able to lead you unto us; and lastly, that it would be no breach of our laws if thou tookest this woman to thine own land and madest her thy wife; that if we could thus save our city, and the lives of the people, it would be wisdom to give her to thee, together with all the women in the Park. Then another grey-beard, wishing to share the credit for a wise idea, arose and insisted that it would be ill in us to keep the strange white animal, which one of the men found upon the plateau. We knew that ye must have brought this, for in all our land we have no four-footed thing smaller than the useful burden-carrying asses ye have seen. Wherefore, the wisdom of the grey-beards being now complete, we sent the dumb girl and the white animal out with the soldier, and they have brought you hither."

"So you have been falling in love with a queen of your own making, who is no more than a dumb idiot!" chuckled the doctor.

"Silence!" I shouted hotly, for I was unspeakably sorry for the poor girl. "There are softer, kinder words than those by which to call a poor blank soul that's born awry. The Kemi are quite right, for this girl, having no sense, has yet been wiser to-day than both of us and all these wise men." Then turning, I addressed the ruler in Hebrew: "You have been falling in love with a queen of your own making, who is no more than a dumb idiot!"

"All this that ye desire, and more, most gladly shall be done, and a grand festival shall be appointed for this night to celebrate the peace. The Pharaoh will entertain you and his royal friends with feasting and with dancing, and the terms of the compact between us shall then be ratified."

At this point a grey-beard interrupted the young ruler, and a spirited conversation took place between them, after which the youth asked.--

"Tell me now, are there not many more such men as ye upon the Blue Star, who may come to wage a further war with us?"

"Have no fear for that," I answered. "The vessel in which we came is the sole means of bridging that vast space, and no more can come, unless indeed we bring them. But all of them shall keep the covenant we make with thee."

Then Zaphnath held a long consultation with the wise men, which ended by the summoning of three soldiers—one to take the woman home, another to carry the news of peace to the Park and to the people, and the third, as I supposed, to convey a message to the Pharaoh; but before the last was despatched, Zaphnath said to me,--

"Our messengers reported a third curious person with you, having a much larger body and long moving horns. What have ye done with him? Is he left in charge of your travelling house?"

Then I explained this circumstance to them, as well as the incident of my smoking, which I promised to repeat at the banquet in the evening. After hearing this they dispatched the third messenger.

"We have heard, not only that ye breathed smoke and carried flames in your limbs, but that your flesh was of iron, invulnerable to arrows; that ye were stronger than birds, and carried the thunder and lightnings of the gods with which to kill; and that ye were able to walk through the air as well as on the ground."

"'Tis true we are stronger than any birds upon our proper star, and that we kill with a thunder and a lightning. Our flesh is tougher and more solid than thine, yet 'tis not of iron. But tell me, what knowest thou of iron?"

"'Tis a rare, precious metal which we coin for money, but I see thou carriest much of it. Thy thunderers are made of it."

"And hast thou no metal, bright and yellow, such as this?" I asked, exhibiting my gold watch.
"In truth, the Pharaoh alone is able to possess such riches, and in all the land of Kem there is no such huge lump of it as that!" he exclaimed in wonder, while the sleepy wise men opened their big eyes.

"We have within our belts many coins of this, which we may barter with the Pharaoh for things more plenteous here."

"Are ye travelling traders then, or what were your occupations on the Blue Star? Were ye warriors, rulers, wise men, or owners of the soil?"

"My good friend here hath been a wise man, as thou must know from his grey beard," I answered, smiling at the doctor. "He hath been a teacher of knowledge to the people, and it was his superior wisdom which contrived the house in which we travelled hither."

"But hath it not been a folly to teach wisdom to the people? When they have learned, the wise man turneth fool! Wisdom groweth ripe by being bottled, but whoso poureth it out for every thirsty drinker wasteth good wine upon gross beasts!"

"In its youth our star held to these opinions, but now it teacheth wisdom to every child, and in this manner we have made progress into many things not even dreamed of here. As for my own profession, I have been a dealer in wheat, the bread-grain of our star. Hast thou here such a small grain growing at the bearded end of a tall straw?"

"In truth, the land of Kem raiseth so large a store of such a grain as to feed all the surrounding countries! Our greatest traffic is in this wheat. Hast thou not seen the green fields of it lining the banks of the Nasr-Nil, until the sight tires following it? This season there cometh such a crop as Kem hath never seen before, and for six years we have been blest with its plenty----"

Here he was interrupted by the hurried return of the third messenger, who addressed him in excited tones. As the Kemi use no gestures, and but little facial expression in their conversation, I could not guess the import of his message. Therefore when it was translated by the youth it was all the more surprising.

"The soldier saith that a certain curious man of Kem, anxious to explore thy travelling house, ventured within it, when presently it rose and sailed away with him far out of the city, and was lost from sight in the red distance!"

This was an unforeseen, stupefying development. I left the doctor to guard our things, and rushing out I leaped the courtyard wall and ran with all haste to the Park. The projectile was gone! No sign or trace of it was anywhere to be seen. Willingly or not, we were henceforth chained to Mars!

CHAPTER VI

The Iron Men from the Blue Star

Returning from Long Breath, I could not but notice the entire subsidence of the terror, which had previously been so marked, and the general signs of rejoicing which were now taking its place. It was easy to see that I was an object of absorbing interest and busy comment. No one pointed the finger at me, for that rude gesture was as unknown as it was unnecessary. The mere turning of a great pair of eyes quickly in my direction was an indication, significant enough, that I was being denoted.

I now understood the more composed behaviour of the women. They were accustomed to the idea of being taken in war, and never suffered slaughter or hardship thereby, but merely a change of masters. As they now left the Park they eyed me curiously, as if wondering from what sort of new master they had escaped. I imagined I could detect some signs of disappointment among them, at being cheated out of a trip to a new star or being dismissed from the service of a god. Occasionally one of them would incline her head gently to the right to meet her rising hand, in a dignified salutation. I approached one of the fairest of these and extended my hand. She seemed rather surprised, but calmly placed an iron coin in my palm! Evidently I must make haste to learn the Kemish salutation, or I would pass for a common beggar! My hand certainly did look hard and brown, compared with her perfectly white and transparent skin, through which the blood suffused the beautiful pink flush of life. But even if a hotter sun had scorched and tanned my hand, it did not look as dark and tough as the coin, although the soldiers had spread the report that our flesh was of iron.

The chief business activity in the city seemed to be the transporting from the surrounding country of an endless number of fibrous bags filled with the bread-grain. I saw some of these bags open in the shops, and the grain was shaped like wheat, but as large and less solid than a coffee berry. Trains of asses bearing these bags were seen in every street and entering by every gate. Each train of fifteen or twenty asses was driven by a sandalled Martian, wearing the spread bird-wing which seemed to denote the Pharaoh's service. The animals had the lazy, sluggish, plodding habits which I expected, and in these respects their driver differed very little from them. He gave an occasional long hiss, followed by a jerky grunt, which sounded like "sh-h-h-h, kuhnk!" and was evidently intended to hurry the animals, but it served them quite as well as a lullaby. These drivers, who doubtless had just been hearing stories of me, were a little surprised at coming upon me so soon, but looked me over deliberately, as if calculating how much iron money I would make, if there were no waste in the coinage!

But I hastened back to the doctor at the Palace, being obliged to leap the courtyard wall again, for I was not
acquainted with the signal to command the Terror-birds. He expected no other report of the projectile than the one I brought.

"The only hope is that the meddling Martian may have turned in but one battery," he said. "In time this will exhaust itself, and the projectile will tumble back upon Mars. If it should strike in the water, it may not be shattered, but of course it might be submerged. The chances that we will ever see it again are extremely remote. If it should be discovered anywhere on the planet, it would probably be coined up into money, and the fortune of the Pharaoh would hardly buy us iron enough to make another. Well, the unexpected always happens. It was a fatal mistake ever to have left it."

"If it is gone for good," I answered, "let us hope that this planet may suit us better than the Earth, anyhow. We are certain of an easy existence here at least. One shield will coin into money enough to supply our wants a long time. If we had not been so dreadfully secretive on Earth, perhaps some one, infringing our ideas, might have built another projectile and sent a relief expedition!"

Preparations for the banquet were rapidly being made about the Palace by men servants. We saw no female servants, and we learned afterward that they did no menial work, except the serving of the meals, which was rather an artistic duty.

We were conducted to two large ante-chambers, adjoining the banquet room, where we deposited our armament and proceeded to make ourselves at home as well as we could. The rooms were gloomy and poorly lighted, but a great number of servants were busy waiting upon us, and one presently brought in four portable gas-burners, placing them in a circle about my head as I reclined on a large pillow of soft down, laid on the floor. These burners thus furnished both heat and light, and nearly all the rooms were thus lighted and heated throughout the day. They had windows and a very thick, coarse, translucent but not transparent glass in them. But as the sunlight was never strong, rooms were rarely ever light enough for comfort without the flames of gas.

This was my first acquaintance with Martian gases, which I soon found to be very numerous and various in use. On the other hand, very few liquids existed. The atmospheric pressure was so low that what might have existed normally as liquids on Earth, took the form of heavy gases here. In every case they were heavier than the air, so that they remained in vessels just as a liquid would have done. The four lamps were made of reeds and shaped like the letter U. The right-hand side of the U was a large vertical reed, connecting neatly at the bottom with a very much smaller reed forming the other prong and terminating at the top in a tip of baked earth, turned downward, so that it would discharge the gas away from the lamp. A light stone weight was fitted to slide neatly down the large vertical tube in which the gas was stored, and thus force the gas up to the burner in the smaller tube. If a brighter light was desired, a heavier weight was put on, and to extinguish the light it was only necessary to lift the weight, which cut off the supply from the burner.

While lying on the downy floor-cushion, I was strangely annoyed by the faint and distant howling of a dog. It seemed to come from the banquet room adjoining mine, or from the doctor's room on the other side. I called in the doctor, who said he heard nothing and had seen no dogs on Mars. He tried to make me believe it was a fancy of mine. But presently when a servant entered, he seemed to hear it instantly, for he turned quickly about and left, but it was fully half an hour later before the plaintive howling ceased.

"These Kemish people have better ears than we have," I remarked to the doctor.

"Yes, both their ears and eyes are much better suited to the conditions of fainter light, and higher, thinner sounds. There may be music at the banquet to-night which we cannot hear at all in some of its notes."

"If there are no foods whose delicate flavours we fail to taste, I shall be able to get along quite well. I am extremely hungry, and quite ready for a change of fare." We had only eaten a hasty lunch when we had re-entered the projectile at Long Breath to await the return of the soldier.

Zaphnath himself came to conduct us to the banquet room, and we were much surprised at its dark and gloomy character. The entire vast enclosure had but twenty-one flickering fire-brands, suspended overhead and in front of us, to furnish light. There were no tables or chairs, no flowers or decorations, no sign of anything to eat. Other guests were moving about through the semi-darkness to their places, seemingly without inconvenience. I was whispering to the doctor that I would need eyes of much greater candle power to enjoy the function, when we arrived at our places. A double row of comfortable cushions ran along the edge of our floor, where it seemed to sink to a lower terrace, whence we could hear the indistinct hum of women's voices. Zaphnath took his seat on a raised cushion in the middle of the row, and motioned me to the cushion on his right and the doctor to his left. Eighteen other guests now reclined upon their cushions to left and right, so that we were all arranged in a direct line, facing the lower terrace whence came the feminine buzz. Directly opposite each of us was an empty cushion, but no table.

I was wondering at it all when the fire-brand farthest from me suddenly exploded a great flaming ball of fire, and we all sprang to our feet. From the terrace below came a grand burst of reed music, a swelling chorus of women's voices, and then each fire-brand in quick succession exploded a burst of flame, which floated down toward
the dancing women, but expired above their heads. I soon saw that these white fire-balls, which continued in quick succession throughout the banquet, and afforded us a glorious if a somewhat appalling light, were caused by the successive discharges of small volumes of heavy gas from twenty-one reed-tanks in the comb of the roof, one above each of the fire-brands. When the discharged gas had floated down to the fire-brand beneath it, there was a quick, bright explosion, and the flame sank menacingly toward the women below.

The burst of music, the chorus of huzzahs, and the flashing forth of light, proved to be a welcome to the Pharaoh, who was standing proudly on his great throne opposite us, across the terrace and somewhat higher, whence he could look down upon the dancers and singers. He wore a crown of thin iron, surmounted by a golden asp. His elaborately curled wig did not conceal his ears, from which large golden pendants hung almost to his shoulders. His own beard was waxed and curled, and trimmed to the shape of a beaver's tail. His dress is best described by calling it a feather velvet, edged with flaring wing and tail plumes of iridescent colours. In this feather cloth there was none of the rough, gaudy show of the savage, but a discriminating, tasteful blending of colours and harmony of design, imitated from the beauty of the bird itself.

Grouped about him on the approaches to his throne were one-and-twenty of his favourite women, beautifully dressed in feather textures, with the curved neck and head of a bird surmounting their brows. But their costume was scant and simple compared with that of the dancing girls below us. They wore a wonderful head-dress, composed of the entire body of a small peacock. The head and neck were arched over the forehead, the back fitted tightly, like a hat over their head, the drooping wings covered their ears, while the fully spread tail arched above their head in its wonderful opalescence. Much of the snowy whiteness of their backs and breasts was bare, and a downy feather ribbon circled the necks, wrists, and ankles. A two-headed iron serpent with golden eyes clasped the upper arm and gartered the knee, but no jewels of any kind were to be seen. All the dancers carried long decorated reeds, which they flourished wondrously, and with which occasionally they executed the most surprising leaps. While there was a stateliness about their movements, there were also the most startling acrobatic surprises, made possible by the feeble gravity.

The singing women, or what might be called the chorus, were in twelve sets, each group clad in a different colour or design of feather-silk. Their head-dress, while composed of the entire body of a bird of plumage, lacked the flamboyant tail of the peacock. The music was weird and whimsical, as there were neither stringed nor brass instruments. It was made wholly by women playing upon a vast variety of drums and reeds. There were all sizes of whistling reeds or flutes; several of these of different lengths were grouped into one instrument like the pipes of Pan; a series of long hollow reeds, when rapidly struck, gave forth a marvellous cadence; while groups of small drums, of different size and tensity, gave curious tones. The whole effect was weirdly eloquent, rather than racy or exciting.

When the burst of welcome was ended, Zaphnath stretched forth his hand and exclaimed, first to us in Hebrew, and then in Kemish,—

"O Pharaoh, whose power and wisdom from all the Pharaohs have descended, behold, I bring unto thee these two iron men from the Blue Star, who, though excelling in the arts of war, are yet pleased to come out of the ruddy heavens to practise peace amongst us!"

And thus did Zaphnath translate the Pharaoh's response to us:--

"Unto Puth, the Centre of Things, to whom the myriad stars of the heavens are but ministering slaves, I, Pharaoh of Kem, do give you welcome. Whatever pleaseth you in the largeness of this rich land, or in the matchless beauty of our women, shall be unto you as if ye had owned it always."

Whereupon the other guests turned toward us with the right hand upon the cheek, and we awkwardly attempted the same salutation. Then a group of the singing women, twenty-one in number, tripping to the weird music, came up the steps which led to our floor, carrying covered dishes. At the top they turned and saluted the Pharaoh, and then took their places, one upon each of the cushions opposite us. Before uncovering the dishes they took me a little by surprise, by bending forward and pressing their warm, pink cheek against the right cheek of the guest they were about to serve. My maiden unconsciously shivered a little, for my cheek must have felt cold, even though my surprised blushes did their best to warm it. Her dish, when opened, contained nothing but flowers, waxy white, but emitting a delicately sweet perfume. She held them toward my face, and presently breathed gently across them, as if to waft their perfume to me. Then scattering them about my cushion, she pressed her left cheek to mine, arose and tripped down the steps again. There was a modest self-possession about her which enchanted me, and I hoped she would soon return bringing something more substantial.

But another group of maidens, differently clothed, had already begun to mount towards us with earthen goblets and reed-pitchers, which looked as if they might contain wine. Dropping on her knees on the cushion before me, this maiden saluted me as the other had done. Then sitting gracefully before me, she tipped her reed pitcher toward the goblet, and poured out apparently nothing! But, watching the others, I saw them carry the goblet to their lips and draw a deep breath from it, while tipping it as one might a glass of wine. I did the same, and inhaled a deep draught.
of stimulating, wine-flavoured gas, which, when I exhaled it through the nostrils, proved to be deliciously perfumed.

"I have heard of some poets who could dine upon the fragrance of flowers and sup the sweetness of a woman's kiss, but I am hungry for grosser things," I whispered to the doctor.

"There are ten other groups of these serving maidens to come up to us," he replied. "They will certainly bring us something more tangible before it is over. Meantime, while we are in Kem, let us imitate the Kemish;" and I must say he was succeeding remarkably well.

The next maiden who tripped up toward me was wonderfully beautiful and most becomingly dressed. I was a little disappointed that, upon taking her place on the cushion in front of me, she omitted the salutation the others had given. However, she carried a small flask in her right hand, which she placed near my mouth. Then opening the top of it slightly, it jetted forth a deliciously perfumed fine spray, which moistened my lips. Waiting just a moment for me to enjoy the perfume, she then pressed her pretty cheeks in turn against my lips, until they were soft and dry. This was the nearest approach to a kiss which I saw among these people, and I learned it was given always just before eating solid food. The plate she carried to me contained small morsels of fish, served upon neat little wheaten cakes. There was no knife, fork, chopstick, or anything of that kind, but each little cake was lifted with its morsel of fish, and they were together just a delicate mouthful. This maiden quite took my fancy, and I watched her evolutions and listened for her voice in the chorus during the rest of the banquet, for she had no more serving to do.

After this course Zaphnath arose, and waving to the music and singing to cease, he thus addressed the Pharaoh:--

"It doth appear, O Pharaoh, that these visitors of ours come from a strange, small world, where, though much is done, but little is enjoyed. At thy bidding I have offered unto them all the luxuries of Kem, such as our people strive all their lives for, and dying still desire; but they wish no gifts or presents. Like slaves they only wish to work, but at some noble, fitting occupation. This younger man, whose wondrous learning hath taught him to speak even the tongues of other worlds, hath been a great handler of grain upon his proper star, and for him the fitting occupation is not far to seek. Thou knowest how the gathering of thy bounteous harvests hath distracted my own attention from weightier matters; wherefore, O Pharaoh, I do entreat thee to put into his charge the labour of gathering, storing, and distributing all thy harvests; and as a fitting compensation, let him have one measure of grain for every twenty that he shall gather for thee."

Nothing could have suited my wishes and abilities better, and my pay on Earth had been only one measure in five hundred. The Pharaoh's reply was thus translated to us,--

"The gods put into thy mouth, O Zaphnath, only the ripeness of their wisdom, and Pharaoh granteth thy requests ere they are uttered. But what desireth the wise man?"

To this I made answer for the doctor,--

"When thou knowest his wondrous wisdom touching many things, O Pharaoh, thou mayest think fit to give him a place among thy wise men, where they may learn from him and he from them. Will it please thee to send a slave for the Larger Eye and have it placed by yonder window, and he will presently show unto thee many of the wonders of the starry heavens that are hidden beyond the reach of man's unaided vision."

While two slaves were despatched in charge of a soldier to bring the telescope, we were served with a highly-sparkling, gas-charged wine, which further whetted my appetite. Then came another maiden with a small roast bird, neatly and delicately carved, and each tempting piece was laid upon a small lozenge of bread. I never ate anything with more relish.

There was an excited buzz among the women, and the Pharaoh himself was visibly affected at the sight of the telescope, whose burnished brass was evidently mistaken for gold. The doctor mounted it upon the backs of slaves near a high window, whence there was a good view of the heavens, and signalled to me to explain its use.

"O Zaphnath, wilt thou make known unto the Pharaoh, and these, his guests, that the wondrous value of this instrument lieth not in its bright and glistening appearance, but in the farther reach and truer vision of the heavenly bodies which it affordeth us. With this we ascertain all and far more than yon monstrous Gnomons tell thee; we learn the periods of the day, the seasons of the year, and vastly more than our common tongue hath words to tell thee of. Tell me, what callest thou yon risen orb, which hasteneth a rapid backward journey through the heavens?" I asked, indicating the full disc of Phobos.

"That is the Perverse Daughter, sole disobedient Child of Night, whose stubborn, contrary ways are justly punished by her mother. For she must draw a veil across her brilliant face for a brief period during every hasty trip she makes."

"Behold her, then, just entering upon her punishment!" I exclaimed, for the regular eclipse was just beginning. "Look! and tell us all thou seest."

"I see a glorious orb, far larger than the Day-Giver and very near to Ptah! But it is the Perverse Daughter, grown larger and come nearer, for she alone knoweth how to draw the veil of night across her face like that. Now
she hath fully hidden! It is most wonderful, O Pharaoh!"

"Be not deceived by mere appearance, O Zaphnath," replied the Pharaoh. "All that thou seest may be contained within the thing thou gazest into. 'Tis true, the Perverse Daughter hath drawn her veil, but be thou sure thou seest what is beyond and not merely what is within."

As soon as this was translated to us, the doctor focussed the telescope upon the Gnomons, which were just visible over the edge of the plateau, and I said,--

"Look now again, and behold all the familiar features of the landscape, the plateau yonder and the ponderous Gnomons, which could never be contained within this little enclosure."

"'Tis all most true, O Pharaoh, and with this little instrument thy reign may be more glorious, and come to greater wisdom, than any of that long line of Pharaohs, whose toiling slaves have built the towering Gnomons. Let this grey-beard be made chief of all thy wise men; let the others teach him our language and make him acquainted with all our monuments and records; also command them to record most faithfully all the wonders which he is able to reveal. Mayhap he may be able to write thy name among the stars of night, to shine for ever, instead of upon the crumbling stone which telleth of thy ancestors!"

"O men of Kem," replied the Pharaoh, addressing the other guests, "hear ye the wisdom of Zaphnath, which cometh with the swift wings of birds, while thy halting counsel stumbleth slowly upon the lazy legs of asses! What Zaphnath asketh hath already been decreed touching these two men from the Blue Star, provided only that they live peaceably among us obedient to our laws."

We assured him of our obedience and our best efforts to discharge our new duties, whereupon the feast continued. Courses of small birds’ eggs and of fruits and confections were each served by a separate group of maidens. When the feast was finally completed, I turned to Zaphnath with my cigars and said,--

"In our travelling house I brought with me many such things as these and others of a smaller, milder form, which might delight the women; but now that the house is gone, I have but three, one of which wilt thou send to the Pharaoh, one keep for thyself, and the other I will smoke to show you the manner of it. There is naught to fear about them; your taste for heavy vapours will have prepared you to enjoy the warmth and fragrance of this peculiar weed."

A servant came to carry the one to the Pharaoh, and I struck a match upon the stone floor and held the cigar designed for Zaphnath in the flame. Then I touched the flame to my own, and puffing gently, I asked Zaphnath to do the same. When I saw that his custom of inhaling gases led him to breathe in the smoke, I puffed very slowly and gently, until he should become accustomed to it. When Pharaoh saw that it did no harm to Zaphnath, he lighted his own and inhaled the smoke in long draughts with evident gusto.

"How sayest thou, O Zaphnath," he said at last. "Is not this warm vapour most stimulating? It is a treat worth all the rest of the banquet. Continual feasting hath made the luxuries of Kem to pall upon me, but this hath novelty and comfort in it. If, indeed, there were many of these in thy travelling house, my slaves shall search all the width and breadth of Ptah, until it be found."

The music now burst forth again in new volume, and the singing girls went through a new evolution, which broke up their groups and formed twelve new ones, containing one girl from each of the previous sets. Then the entire number began ascending the steps together, and I noted that those approaching me were the twelve maidens who had served me during the banquet. They came and circled around me, and presently stopped with their hands upon their cheeks in salute. The other groups did the same to the guests they had served, and each guest selected a maiden by saluting her upon the cheek, whereupon she left her circle and took her position upon the cushion opposite him. Zaphnath, seeing that we did not understand this ceremony, explained it to me.

"It is an ancient custom with the Pharaoh to present each of his guests with a living reminder of the occasion and his hospitality. Wherefore he desireth thee to choose which of the twelve serving maidens hath pleased thee best, and he will give her to thee, to be always thy maidservant."

I translated this to the doctor, and watched him curiously, with an inquiring twinkle in my eye.

"Let us accept them, and bestow their liberty upon them," he said.

I immediately chose the third maiden, who had pressed her pink cheeks to my lips, and when she came to sit opposite to me upon the cushion, I spoke to her through Zaphnath,--

"Thy ways have pleased me, but upon my star we do not think it proper to own any slaves. When we know well-favoured and graceful women, such as thou art, we prefer to be their slaves, rather than they ours. If I could take thee with me to the Earth, the laws there would set thee free to do whatever pleased thee best. Wishest thou that I make thee free here?"

She was evidently surprised when Zaphnath put this question to her. She replied in a sincere and pleading tone, but her words astonished me,--

"Whatever the dark Man of Ice wisheth, I will do. I know not why he hath asked what I desire. He speaketh of freedom, but I beseech him not to send me back to that! I was born an unhappy and masterless maiden, and many
years I struggled and laboured for a miserable existence. I drove asses, gleaned in the fields, and did the menial work of men. But I felt I was fit for better, nobler things. At last, I heard that the armies of the Pharaoh were coming to my land, and I took heed of my appearance, put on my neatest feather clothing, and went to throw myself before the soldiers. They were pleased with me, and brought me to this city, where fortune favoured me, and Pharaoh, looking over all the women whom the soldiers brought from the wars, chose me, with many others, to join his household. And here in the Palace for a few years I have been happy and well cared for. I pray thee do not turn me out again; do not degrade me to the labour and misery of freedom. Even the beasts have masters! They are housed, and fed, and cared for; why should I then be cast out and left to drudge or beg?"

"Doth she mean this?" I exclaimed. "What then is the chief aim of women in Kem? What is the highest state to which they may aspire?"

"'Tis a strange, simple question!" he answered. "There is no greater blessing for a woman than to belong to the household of the Pharaoh. Here they are delighted with constant music and dancing; their beauty is cultivated and heightened by rich and tasteful clothing; and their charms and graces may win for them a selection as one of the one-and-twenty favourites of the Pharaoh. What they fear most is being chosen and carried away by guests whose palaces and ways of life are less luxurious than the Pharaoh's."

"Why then, as we have no palaces and wish no slaves, it were best to return these maidens to the Pharaoh if they will be happier and better cared for here than anywhere else in all the land of Kem," I said to Zaphnath.

"This age is not ripe for the grand idea of freedom which dominates our own," remarked the doctor, as we returned the grateful maidens to the constant delights of an ornate and sensuous slavery.

CHAPTER VII
Parallel Planetary Life

I was sleeping soundly on my deliciously soft heap of downy pillows, when in the early morning I was awakened by a pounding on the door of the ante-chamber. As one always wakens from a sound sleep with his most familiar language upon his tongue, I cried out in English, "Who's there?" The doctor answered, wishing to be let in. I fumbled about in the darkness sleepily, and opened the door, and he lighted two of my gas-lamps with the one he carried. He looked rather tired and worn.

"I am possessed by a tyrant idea, which will not let me sleep," he said. "I must get rid of it before morning. Come, get your senses about you, and listen to me," he commanded, as I yawned and rubbed my fists into my eyes, blinded by the sudden strong light.

"If you think I can sleep with it any better than you can, out with it," I answered.
"How does it happen that a young Hebrew is ruler over all these people?" he demanded.
"Do you lie awake thinking up conundrums?" I ejaculated.
"On Earth, what notable Jews have been rulers over a great people not of their own race?" he continued.
"Disraeli in England, Joseph in Egypt, and--well, that is all I can think of just now."
"Perhaps that is enough. Egypt was the greatest grain-raising country in Joseph's time, wasn't it?"
"Yes, of course," I answered. "And Joseph's rule began with seven years of most wonderful crops."

"Zaphnath told us this morning that the seventh great crop, and the most plenteous of all, is now growing," he interrupted.

"What has that to do with Joseph? We are not on Earth, but on Mars. Have you been dreaming? Zaphnath is----"
But, by the way, Joseph's Egyptian name was Zaphnath-paaneah, meaning a revealer of secrets! When I heard that name this morning, I thought it was strangely familiar. Pharaoh called him that when he appointed him ruler, because he had interpreted his dream," I said, just realizing the very peculiar coincidence.

"You are as good as a Bible!" cried the doctor. "Perhaps you can also remember by which of Jacob's wives Joseph was born?"

"Of course I can. He was the first son of Rachel, the wife whom Jacob really loved, and worked fourteen years to secure."

"But how could he have ten older brothers, if he was Rachel's first son?" he demanded, a little perplexed.

"They were all the sons of her sister Leah and her handmaidens. Rachel was barren all her life until Joseph was born," I explained.

"And Zaphnath said this morning that his mother was barren all the years of her life that the Blue Star wandered. He also called himself revealer of God's hidden things."

"Yes; and it struck me as peculiar at the time that he said of 'God's' not of 'the gods'," I reflected. "Evidently he thinks there is but one God. The whole matter is altogether peculiar."

"Here are the facts," replied the doctor. "Listen to them attentively. We have dropped down into a civilization here upon Mars which coincides in every important particular with that of the Ancient Egyptians on Earth. They are great builders, erecters of monuments, raisers of grain, polygamists, and they now have a young Hebrew ruler,
corresponding in every important respect with Joseph. We chance to have arrived during the seventh year of plenty of Joseph's rule. Grain abounds; the soil brings it forth by handfuls. It is, 'as the sand of the sea, very much,' and the Pharaoh, probably at the suggestion of his young ruler, is storing it up--

"By all the Patriarchs!" I interrupted. "They are running a wheat corner, and I didn't know it! Go on, go on!"

"These are all very singular coincidences with a history which was enacted many thousands of years ago on Earth. Now, how can you explain their strange recurrence here?" he queried.

"How should I know? I haven't been lying awake! How do you explain them?" I asked, full of interest.

"I have tossed on my pillows in there for three hours evolving a theory for it. If it is correct, our opportunities here in Kem are simply enormous. Now listen, and don't interrupt me. The Creator has given all the habitable planets the same great problem of life to work out. Every one of His worlds in its time passes through the same general history. This runs parallel on all of them, but at a different speed on each. The swift ones, nearest to the sun, have hurried through it, and may be close upon the end. But this is a slow planet, whose year is almost twice as long as the Earth's, and more than three times that of Venus. The seasons pass sluggishly here, and history ripens slowly. This world has only reached that early chapter in the story equivalent to Ancient Egypt on Earth. We have forged far ahead of that, and on Venus they have worked out far more of the story than we know anything about. If Mercury is habitable yet, his people may have reached almost the end, but it is most probable that life has not started there; when it does begin, it will be worked out four times as rapidly as it has on Earth."

"Then a seven years' famine will begin here next year, and I am in charge of the world's entire wheat supply!" I gasped, almost overwhelmed by the speculative possibilities which this unfolded.

"It is not likely that there will be more than a general similarity of the history. But Zaphnath has told us that this is the seventh year of plenty. If the famine begins soon, it will be fair to suppose it will for about seven crops. In its later developments the entire history may change when the crucial period comes, and have a very different outcome. But we are now almost at the beginnings of civilized history. Joseph, the first Jew in Egypt, is a ruler here, and your entire race must follow him hither, and pass through a miserable captivity. Even if you remained here all your life, you would not last that long; but upon the later doings of your people and their treatment of the Martian Messiah, when He comes, depend the future conditions of this planet. Will it be different then from the Earthly story? It is an extremely interesting theory to follow to the end, but that would take thousands of years, and we are concerned with the present."

"Doctor, if this theory be true, then we are nothing short of prophets here!" I exclaimed, still struggling with the wonderful bearings of the idea on our personal welfare.

"In a general way we are prophets, but Zaphnath has forestalled us on immediate matters. Let us keep our own counsel as to any foreknowledge. If we disclose it, we may suddenly lose our opportunities, and, besides, we shall be powerless to change history here in any important respect."

"I might prevent Zaphnath from bringing all Israel down into Egypt, and thus save them from that captivity," I exclaimed.

"Then you would forestall a Moses, and prevent the miraculous deliverance of your people, and all the paternal care which God bestowed upon them during that time. You will never be able to do this. Zaphnath is in the way. He is headstrong and wilful. He is an active thinker and a hard worker among a race of idlers, who live only to enjoy the fulness of a rich land. He knows the greater activity and industry of his own people, and he will wish to make them masters of this goodly land. I will warrant that his head is full of plans at this very moment for bringing his old father and all his race down here to give them important places. See how readily he gave the keystone of the whole situation to you. It will pay you better to keep on good terms with him. Instead of trying to change the situation, let us make the best of it as we find it."

"Well, I must say the present situation is attractive enough to me," I said, and then inquired, "How many gold coins have you, Doctor?"

"I have only a hundred half eagles and a little silver coin," he replied; "and I wish to be very sure of the correctness of my theory before I undertake any speculations with that."

"Nonsense! What is money for, but to double, and then to double the result again!" I exclaimed. "You work out this great theory, and then fail to grasp its commercial importance to us. You and I will embark in the grain business, with our entire stock of gold, the first thing in the morning. We have iron enough to live on."

"I didn't come here to go into business," he answered. "I have a grand scientific career to pursue, and last night's appointment puts me in just the position to carry it out."

"Go ahead with it then, but invest your gold coins in my enterprise. I will manage it all," I said, reaching for my belt under my pillow. "I have here three hundred eagles and one hundred double eagles,--five thousand dollars in all. I scarcely need your five hundred dollars, but I don't wish to see you left out, and buying bread of me at a dollar a loaf in a short time. Gold must have an enormous value here, considering the small amount of it used as ornaments"
in the Pharaoh's household, and the general currency of iron money. Three of these double eagles would make a pair of ear pendants equal to his. I wonder how he would like to have pure gold bracelets on all his women instead of those rough iron things? And wheat must be cheaper than dirt after seven enormous crops. I will buy all the grain he has to sell before to-morrow night! Even if your theory is all wrong, we can't lose much."

"That is all very well, but we may as well be sure," he replied cautiously. "You can find out much by a few discreet questions to Zaphnath in the morning."

"The trouble about the whole matter is, that I will be obliged to do business through him altogether until we learn this language. Come, you must contribute your share. I have furnished the Hebrew, you must learn the Kemish at once through those wise men. But I can't wait for that. I will make Zaphnath teach me the necessary shop words and stock phrases for carrying on the grain business to-morrow. I can't perform my new duties unless he does that."

However, the doctor did not respond wholly to my new enthusiasm. He was sleepy, and retired yawning to his own room to get the rest which had evaded him. But I lay and tossed on the pillows, revolving a hundred plans, and feeling anything but sleepy. Presently I thought of a scheme, which would demonstrate whether there was anything in the doctor's theory. I knew it would just suit him, and I sprang up and knocked gently on his door, saying,--

"I have it, Doctor. Here is the very idea!" There was no answer, so I knocked louder and listened. I heard him breathing heavily in deep slumber. After all, the morrow would do for ideas; just then he needed sleep.

CHAPTER VIII
A Plagiarist of Dreams

Being unable to sleep, I arose early to get the refreshment of a morning walk. I passed quietly through the next room, where the doctor was still sleeping soundly, out into the courtyard. I was scarcely outside when I heard a familiar, excited barking, and Two-spot ran across the open space toward me as fast as his four short legs and his very active tail would carry him. His frantic jumping up toward me was extremely comical, for he sprang with more than twice the swiftness I was accustomed to seeing, almost to a level with my face, but he fell very slowly to the ground with only one third the speed that he would have fallen on Earth. He could jump, with almost the agility of a flea, and yet he fell back deliberately like a gas ball. He was evidently enjoying his muscles as much as I had mine. When he made a particularly high jump, I caught him in my hands and patted him fondly.

"So you didn't fly away with the projectile? Or, did you go with it, and is it safely back again, somewhere? How I wish you could speak my language and tell me all you know! These different tongues are a great bother, aren't they, Two-spot?"

He answered me volubly, but apart from the fact that he quite agreed with me, I could not understand his message. Had I been able to, it might have made a very great difference to me.

There was a beautiful, filmy snow on the ground, which had fallen during the night. It was scarcely more than a heavy hoar frost, and as the sun sprang up without any warning twilight, the snow melted and left the surface damp and fresh. As I afterwards learned, this thin snow fell almost every night of the year, except for the warmest month of summer when the grain ripened. There were hardly ever any violent storms or quick showers. The thin air made heavy clouds or severe atmospheric movements impossible. But the coolness of night, after a day of feeble but direct and tropical sunshine, precipitated the moisture in the form of those delightful feathers of darkness. I also learned that the months were distinguished by the time of night when this snow fell; for it was precipitated directly after sunset in the winter, but gradually later into the night as summer advanced, and finally just before daybreak. The month in which none fell at all was midsummer, of course. It had scarcely finished falling this morning when I came out into it.

I sprang to the top of the wall, and was watching the quick rising of the Sun, and enjoying the sensation of looking fixedly at his orb without being dazzled, when I noticed that there was a dark notch in the lower left-hand part of his disc! Soon after I distinguished, somewhat farther in, a faint and smaller dark spot. This must be the beginning of the double transit of the Earth and the Moon! I experienced a sensation of joy in finding the home planet again. I confess it had given me a curious shock not to be able to see it in the heavens. It was more comfortable to have it back in the sky again, and at last I knew just where we were in the calendar. On Earth it was the third day of August, 1892. The summer there was at its height, and all my friends were as busy and as deeply immersed in their own affairs as if their little spot had had no idea of coquetting with the Sun. Possibly a dozen pairs of studious eyes out of the teeming hundreds of millions on Earth were turned Marsward. This led me to wonder what all-absorbing topics of sport, politics, or war may fill the minds of the possible million people on Venus, when the Earth is so much excited over one of the infrequent and picturesque transits of that planet across the Sun.

But the doctor and Zaphnath must know of this! I hastened into the ante-chamber and called out,--

"Come, get up! I have already discovered two very significant things this morning."

"What are they?" he asked wearily between yawns.

"Two-spot and the Earth!" I exclaimed. "The former crossed my path in the courtyard, and the latter is just now
crossing the Sun. Where is the telescope? quick!"

The doctor was not long in propping it up by the east window, and I went to look for a servant. By repeating the word "Zaphnath" several times, I made him understand that we wished the attendance of the young ruler, and he started for him.

By this time the notch was almost a complete circle of dark shadow within the lower edge of the Sun. The smaller spot, one-fourth the diameter, was forging ahead like a herald to clear the way. Zaphnath soon arrived, for he lived in another part of the Palace. He quietly pressed his cheek to mine, but in my excitement I had seized his hand, and with a pressure which must have hurt his shrinking flesh, I exclaimed,--

"This is the day of thy greatness, O Zaphnath, for, behold, the Blue Star is already upon the face of the Day-Giver!" I led him hastily to the telescope, and explained to him that the smaller forward spot was caused by a moon like Phobos, and that the Earth was really a round ball, like the Sun. He looked intently for a long time, and then turning about to me he said,--

"It is well ye left just when ye did, for the fire of the Day-Giver hath by this time burned every living thing upon your star! See how she hastens through his hot flames."

I attempted to explain that the Earth was more than twice as far from the Sun as she was from us; but he believed the evidence of his eyes, and I had to give it up in despair.

"I pray thee, bring this Larger Eye to the Council Chamber. I must summon all the wise men at once to behold this wonder. How long will it continue?"

The doctor told me it might last almost two hours; but I found it impossible to convey any idea of this period of time to Zaphnath, until I told him that it would continue half the time of the crossing of Phobos, who had just risen dimly in the west.

We made a quick breakfast on fruit like grapes and a wheaten gruel, and hastened to the chamber where we had been received the day before. Zaphnath was already there, and so were eleven of the grey-beards. We did not wait for the twelfth, but Zaphnath led the doctor to the place at the centre of their oval table, which thus filled all the seats. Then the young ruler ascended his throne and thus addressed them:--

"While ye have tossed and tumbled in an idle slumber, two things of grave importance have happened touching you. The Pharaoh, acting upon my urgent advices, hath appointed this grey-beard from the Blue Star to be your chief; and now the Blue Star herself hath re-appeared upon the very face of the Day-Giver, even as these, her people, told us yesterday that she must do."

Just at this point the belated wise man came straggling in, a slow surprise growing upon him when he saw that his seat was taken. Zaphnath then turned, addressing him,--

"Thou hast not heard, O lazy idler in the lap of morning, what I have just spoken to thy brothers? Then go thou to yonder Larger Eye and speak truthfully to these grey-beards all that thou seest."

I adjusted the instrument, and placed him in the proper position to see. He looked long and carefully, then left the instrument and looked with the unaided eye. Coming back he gazed again, and finally spoke very slowly, as if resigning his life with the words:--

"I am old, and my sight deceiveth me, O my brothers, for when I gaze into this mysterious instrument the Day-Giver suddenly groweth very large, and hath two blots of shadow upon the upper half of his brightness. But when I look with my proper eyes, he keeps his size, and there are still spots upon him, but they are upon his lower side."

I explained to Zaphnath that the telescope made things look wrong side up, just as it made them look larger, and I focussed it upon the Gnomons to convince the wise man of this. Then the youth spoke to him again:--

"The Pharaoh hath appointed this grey-beard from the Blue Star to be chief of all the wise men, and as there can be but twelve, thou art no longer one. Unto thee, however, is given the duty of teaching our language to the chief. See that thou dost it well, for the lives of all of you, having now been forfeited by the law, are in his hands. But so long as his wisdom spares you, ye shall live."

As there was now a lull, I saw an opportunity for my plan which I had not yet found time to explain to the doctor. I translated to him as I proceeded, however,--

"Tell me, O Zaphnath, is it the custom here to relate dreams to the wise men for interpretation? I had last night a most peculiar one, and I will give this golden coin to whomsoever is able to explain its meaning." All the great eyes opened wide and round at beholding the eagle I held up to view. So large a piece of gold must have been uncommon. The youth replied,--

"It is, in truth, an obsolete formality to submit dreams to the wise men, for they have interpreted none since I came into Kem. But let us hear it; if they cannot make it known, mayhap I can do so."

"I dreamed that I stood by the great river which runneth just without thy city walls, and I saw coming up out of the water, as if they had been fishes, seven familiar beasts, such as I have not seen since I came to Kem. Knowest thou here such large, useful animals, each having a long tail and four legs, and whose peaceful habit is to eat the
grass of the fields, which, having digested, the female yieldeth back in a white fluid very fit to drink?"

"It is kine thou meanest," answered Zaphnath. "In truth there are but few within the city, but they are well
known, for in the land of my father my people do naught but to breed and raise them and send them hither for
ploughing in the fields. At the season of planting thou shalt see many of them."

"I saw seven kine, most sleek and plump of flesh, feeding in a green meadow by the river; but suddenly there
came up out of the water in the same manner two lean and shrunken kine, whose withered bones rattled against their
dry skins, they were so poor and hungry. And they stayed not to eat the grass of the meadow, but fell upon and
devoured their fatter sisters----"

"Saidst thou two?" interrupted Zaphnath.

"Two of the lean and shrunk, but they ate the fat-fleshed, which were seven," I answered, watching Zaphnath
and the wise men closely, for he was translating to them phrase by phrase as I spoke. He faltered when I described
the eating up of the fat cattle; there were wondering and inquiring looks among the wise men and a constant
chattering in Kemish. I waited patiently for some time, then waving my coin I demanded,--

"Can none of the grey-beards declare the meaning to me?"

There were more consultations among themselves and with Zaphnath, and presently he said,--

"Before the wise men can declare thy dream, they demand to know whether the lean kine only slaughtered the
sleek ones, or if they ate them wholly up? And were they filled and satisfied when they had eaten their fatter
sisters?"

"In truth, I forgot to say that they devoured the fat kine wholly and completely, yet it could not be known that
they had eaten anything, they were still so lean and ill-favoured."

This caused even a greater chattering than before, and the youth finally asked,--

"Didst thou dream aught more, or is this all?"

"Truly I had another dream, but it was different. I thought that all the wheat in the field grew upon one stalk in
seven great kernels; then a shrivelled and withered stalk began to spring up; when suddenly a rapping on my door
awakened me, and I dreamed no more."

The effect which this produced was most curious. Blank surprise, hidden cunning, anxious debating and uneasy
hesitation, succeeded each other among the wise men. I watched it with great interest, and perceived the doctor's
satisfaction, but I again demanded the interpretation.

"Know, then, O dreamer," answered Zaphnath, "that we understand not only the import of all that thou hast
dreamed, but even what thou wouldst have dreamed hadst thou not been wakened! But, in spite of thy handsome
offer, it doth not appear fit or proper to us that the interpretation of it should be made known to thee. Tell me,
however, hast thou had conversation with any other person in Kem, save with me and with the wise men?"

"Thou knowest well, O Zaphnath, that I speak not the Kemish tongue, and can understand or communicate only
through thy interpretation. I have spoken with no one on all of Ptah except through thee, and if thou wilt not declare
my dream I care not, for while ye have been debating among yourselves I have learned its meaning!"

"Thou understandest it already!" he exclaimed. "Pray tell us, then, how thou hast learned it."

"The chief wise man hath declared it to me in my own tongue!" I exclaimed, with a meaning look toward the
doctor, who had been speaking to me to urge caution. "He saith that the seven sleek kine are the Kemish people,
and the two lean and ill-favoured are we two from the Earth—for are not thy people larger and plumper than we!—and
the seven denoteth their much greater number. But the dream meaneth that we two, poor and hungry, might eat up all
your people and become their masters."

There was still more delighted jabbering and excited comment. Then Zaphnath arose, and turning graciously to
the doctor said to him,--

"Thy marvellous interpretation, O chief grey-beard, is most correct and wise, and it hath wholly eaten ours up!
We quite agree with thy superior wisdom, for thou only hast read the dream aright!"

CHAPTER IX

Getting into the Corner

The doctor's new official position carried with it the use of a spacious, rambling dwelling, situated just inside
the gate where we had met Miss Blank. It was thus conveniently located for the doctor's duties at the observatories
on the plateau. Another house would have been assigned to me, but I preferred to live with the doctor, and I desired
to keep my eye on those enormous stone structures which our telescope had quickly relegated to scientific
uselessness.

We had established ourselves comfortably in this house, surrounded ourselves with a modest retinue of
servants, and were rapidly becoming acquainted with Kemish life and manners. The doctor learned the language
laboriously from the deposed wise man, who had no means of communicating with him except in the tongue he was
teaching. Thus it happened that the doctor could teach me in a few hours in the evening what it had taken him all
day to learn. Naturally I picked up the most common phrases used in receiving and handling the grain, by hearing them frequently; but I soon learned that I must pronounce them with exactly the same intonation and emphasis, or they were not understood. Knowing but one language themselves, they had no facility in recognising mispronounced words, or in guessing at the meaning of incomplete phrases on which I stumbled.

The most difficult thing I encountered was their method of telling the time. During the day it was reckoned rationally enough by the passage of the Sun, which was never obscured by clouds and could always be seen. Every house had a small hole in the roof, at a fixed distance from the floor, and the daily track and varying shape of the spot of sunshine thus admitted gave names to the periods of the day. There seemed to be a settled superstition that no house was fortunate unless this spot of sunshine entered by the door in the morning. For this reason the principal door in nearly every house was built in the west, so that the rising Sun would cast its spot first on the porch outside and then gradually creep in through the door, across the floor, and up the opposite wall late in the afternoon. Of course there were daylight periods in the early morning and late afternoon when the Sun was too low to cast a spot, and these were known by terms which are best translated “before the clock” and “after the clock.”

No one dared to make a social call while the Sun was still outside the door, but friends were best welcome when the Sun was just entering it. Moreover, whoever slept until the Sun had entered the door was looked upon as an irredeemable sluggard. The track of the spot from the door-sill to the wall opposite was measured by linear distance from the centre or noon-position of the spot. As in different houses the apertures through which the clock-light was admitted were always the same distance from the floor, such expressions as “two feet before noon,” or “a foot and a quarter after noon” (which I translate from the Kemish) always had a definite and exact meaning. The nearer the spot drew to noon the more exactly circular it became and the more slowly it moved. Therefore, very fine measurements were needed in the middle of the day, and an inch near noon represented nearly as much time as a foot in the morning or evening.

But the daylight methods were simplicity itself compared with the night methods, which were calculated on an entirely different system, based on the combined movements of the two moons, neither of which agreed or coincided with the movement of the Sun in any close degree. I urged upon the doctor, as one of his earliest duties, the necessity of reforming their calendar and establishing a uniform method of denoting the time, to extend throughout the day and night. But on this point he failed to agree with me.

"What are our seconds, minutes, hours, and weeks after all?" he queried. "They are only arbitrary and meaningless divisions of time, which we have found necessary because we have a very meagre heavenly clockwork; but here they have a very elaborate one. Our day is a rational period based on the Sun's revolution. Here they have seen fit to give up the Sun-day to simplify matters and stick to a Moon-day. Their two contrary moons furnish a rational, if rather intricate, method of telling the time at night. They are best understood by imagining them to represent the two hands of a clock. The smaller moon is what may be called a 'week hand,' completing its revolution in five and a half Sun-days; which they have for convenience divided into six Moon-days of twenty-two hours each. The larger moon makes two complete revolutions in a day, just as the hour hand of a clock does; and it really makes but little difference that it travels around the dial in an opposite direction to that of the 'week hand,' or that they both gain two hours a day on the Sun. These are mere details, that one gets used to in the end."

"Doctor, you argue like the old farmer I used to know, who stuck to the clock handed down by his grandfather, and maintained that no new-fangled arrangement kept as good time. It was true that the striking apparatus had long ago failed to agree with the hands; and the hands themselves, owing to the accumulated inaccuracies of years, no longer denoted the real time; nevertheless, whenever it struck seven he could always be sure that the hands were pointing to a quarter-past twelve, and it was then just twenty-two minutes to three. This was something he could depend upon with a certainty which quite compensated for the annoyance of incessant calculations and mental corrections."

"Pray leave joking aside and consider the wonderful nightly clockwork here, which makes automatic time-keepers unnecessary. This accommodating inner moon, within the brief space of five hours, goes through the phases of a thin crescent, first quarter, and just as it approaches fulness it submits to a total eclipse, followed by a waning quarter, then the reverse crescent of an old moon, and finally it sets where the Sun must soon rise. It is a wonderful heavenly clock, which is never obscured by clouds, and turns its face toward every one alike."

"Yes, but one must remember that this hurrying moon gains two hours a day on the Sun, and therefore goes through her performance that much earlier each night. Besides, she is capable of rising twice in the same night occasionally."

"Those are mere details that one learns to allow for. Moreover, consider the convenience of being able to tell the day of the week by the smaller moon. If it is just risen, we know we are on the eve of the first day of the week; if it is high or eclipsed, it must be the second day; and if it is sinking in the west, it is the third day—"

"But for the last half of the week it is not seen at all, and one is free to guess which day it is," I interrupted.
"Then no two days of the week begin at the same hour. The first day begins with sunrise, the second two hours before sunrise, the third four hours before, and the fourth at midnight, and so on--two hours earlier each day till the week ends, when they throw in a whole night for good measure and begin the next week at sunrise again!"

"Yes, that arrangement is made necessary because their Moon-day will not agree with their Sun-day in any other manner. But it is rather remarkable that the two moons agree with each other so well, the larger one making twelve revolutions while the smaller makes one, so that at the end of every week they both rise together, but on opposite sides of the horizon, which is the signal for that night to be disregarded in the count. The next week begins on the following morning, the first rising of the larger moon being disregarded, and her second rising being the one reckoned from."

We were discussing this during our noon-day meal, and, when we had finished, I walked with the doctor out to the plateau, where I was supervising some important work on the Gnomons; for I had not been ten days in Kem until I attempted to buy, with my gold coins, a large amount of wheat from the Pharaoh. Through the interference and objection of Zaphnath, however, I failed utterly in getting any. But the gold had its effect just the same, and later the Pharaoh showed an evident willingness to part with anything in his possession in order to get a liberal number of the smaller coins. But I put a very high value upon the gold, comparing closely with the worth of diamonds upon Earth, and refused to part with any, until one day the wisdom of buying the Gnomons occurred to me. I considered the project carefully, and finally made him an offer of a hundred half-eagles for them. Many of the small ones had been built to watch the course of the birth-stars of his various ancestors, and these were now in a sense monuments to his dynasty. He reserved these and a small one, built to observe his own star of nativity, and finally sold me all the large important ones, upon the doctor's representation that they were no longer needed for astronomical purposes. He specified only that they must not be torn down, but that I might use them as I should see fit.

As I have said before, the Gnomons contained numerous large, long chambers, and it only became necessary to put a permanent bottom in these to convert them into enormous warehouses. All the storage places inside the city were rapidly filling with grain, which poured in at every gate on tens of thousands of mules. The plenteous crop, already ripening, would have to be housed somewhere, and even if I did not succeed in buying a large store of grain for myself, I knew how to make a storehouse eat up a large portion of the value of the grain it housed. I had seen wheat, stored year after year, finally become the property of the elevator owner, by virtue of his charges.

I was not only putting a bottom to the storage chambers, but converting the inclined slopes of the largest Gnomons into a passable mule-trail, by roughening and corrugating the surface to give the patient animals a surer foot-hold, so they might climb to the top to discharge their cargoes. This was a simple form of elevator, and I laughed to think what some of my former acquaintances would think of it! One of the smaller Gnomons had already been completed to receive my share of the grain which I earned in the Pharaoh's service, and to this I was adding such meagre purchases as I could make from the small farmers. These, however, were not numerous, for the land was mostly in the hands of the Pharaoh and of a few large owners, more or less bound to him. I was therefore not a little surprised now upon approaching to see a long line of mules picking their way up the inclined side of the finished Gnomon, and as they reached the top their drivers emptied the pair of sacks they bore into my storehouse. Including the drove of unladen animals at the bottom of the Gnomon, there must have been a hundred in all, and I was awaited by the chief driver, who rode one sleek mule covered with a soft blanket of feather texture, and had another similarly saddled by his side. After a slow salute of each hand upon his cheek, he said to me:--

"My master, the glorious Hotep, sendeth to the keeper of the Pharaoh's grain a present of two hundred bags of wheat, and wisheth to know if it be true that thou desirest to buy a large store of grain with gold? For hath not Hotep the gathered harvests of two full years in his bins, and upon his fertile lands the largest crop in all Kem (save only that of the Pharaoh) is nodding and awaiting the warm, ripening breath of the Snowless Month! Yet Hotep hath no use for iron money, for he is weighted and fettered with it already; but if thou desirest to bargain with him for as much yellow gold as thou hast bartered to the Pharaoh, he will be most pleased to treat with thee, and sendeth me with this ambling mule to fetch thee. Will it please thee to come with me now to his palace within the city?"

"What do you think, Doctor? This Hotep must be almost a rival to the Pharaoh, if he has stored so much grain and owns so many ripening fields. He must have seen the new gold ornaments upon the Pharaoh's women, which have rendered him envious. If, indeed, he has such a vast quantity of grain to sell, I will deck him out with gold, such as will turn the Pharaoh green with envy! I shall lose no time in seeing him;" and so saying I mounted the mule, and assured the chief driver I would express my thanks in person to the great Hotep.

He conducted me to the opposite side of the city, and, as we crossed a height near its centre, he pointed out to me the long fields of his master lining the left bank of the river. There were miles of waving grain just beginning to turn from a luxuriant green to the lighter yellow tints of harvest. Presently we approached a large palace, which I had often before seen from afar against the distant wall of the city, but had never known. Upon entering, I observed every sign of the same idle luxury which marked the Pharaoh's dwelling, but none of that regal disdain or imperial
haughtiness which separated every one but his favourite women from the immediate presence of the monarch.

I was graciously received in a large, lighted chamber, where Hotep reclined lazily upon a billowy heap of downy cushions, surrounded by many women. He only arose from his elbow to a sitting posture when I saluted him. Without saying a word to him, I approached, and, loosening my belt from about my waist, I unbuckled its mouth and poured out upon a large cushion by his side my three hundred shining golden eagles. The effect was electrical, for they were twice the size and three times as many as the coins I had given the Pharaoh. It must have seemed impossible to him that I could possess larger coins, and more of them, than he had seen upon the monarch’s favourites. He was simply delighted with the mere view, and his women crowded around or ran out in haste to bring in their absent sisters to behold a marvel of riches such as Kem had never seen. But though they wondered and gloated over the sight, none of them touched a coin until I spoke.

"I pray thee, most gracious Hotep, examine all these coins, and pass them among thy women to see if they be pleased with them. Observe their regularity of form and beauty of design, and test the music they give forth when cast upon thy floor of stone. Mayhap, thou wouldst rather own all these than to be cumbered with so much grain."

Thereupon Hotep seized a heaping handful, which he poured jingling from one palm to the other, and all the women delved their pretty fingers into the shining heap and passed the coins to their admiring sisters, until not one was left upon the cushion.

"Thy Chief of Harvests hath made known to me, O Hotep, that thou still hast the full crops of two years. Wilt thou tell me how many bags of grain grow upon thy fields at a single crop?"

"Are not the number of my mules a thousand and one, and bear they not two bags each? To gather a single harvest, each faithful animal must make five trips each day for the period of an hundred days."

I had often estimated an average mule-load at five bushels, upon which basis each crop would aggregate two and a half million bushels. This seemed impossible for a single farmer, but his fields wearied the sight to follow down the left bank of the Nasr-Nil.

"If thou wilt leave all this gold with me, I will deliver by my mules to thy storehouses upon the plateau all the grain of my past two crops with which my whole palace here is cumbered."

"I fear thou holdest thy grain too dearly, and that thou knowest not the value of this gold. What is more plenteous in Kem than wheat? There be more bags of it than the stars in heaven. But this gold I bring is more than all the store of it upon Ptah before I came. Pray give it back again," I said, gathering up the few pieces which had been returned to the cushion, and glancing about among the women as if searching for the rest. They returned them slowly, but Hotep still held his handful. After a brief pause, I continued,--

"Hast thou not a fair crop growing which thou mightest also give me, so that no other than Hotep shall receive any of these coins?"

"In truth, I have never ridden as far as my waving fields stretch down the Nasr-Nil; but one cannot sell what hath not fully ripened, for who knoweth what it may turn out to be?"

"Then I must beg thee to return my coins," I answered slowly; but, unbuckling the other end of my belt, I poured out upon another cushion the hundred magnificent double eagles which I was holding in reserve. Then, taking a particularly bright one of these, I continued,--

"But as thou hast been generous and thoughtful enough to send me a present, O Hotep, I desire to return one to thee, such as no man in Kem ever possessed before. Will it please thee to accept this disc of gold as large as the lesser moon that creeps across the sky? And with it go my wishes that Hotep’s crops may always be great and plentiful."

Slowly and unwillingly the women returned the eagles to the cushion, while they stared in wonder at the heap of larger coins. Hotep filtered the handful through his fingers to the cushion, and accepted the double eagle with gladness. With his eyes fixed on the second heap he seemed to be thinking deeply and making calculations.

"The people are wont to call thee Iron Man, but I believe thou art golden!" he ruminated, and then suddenly, "For these heaps of riches, large and small, what desirest thou of all my possessions? Wilt thou have all my grain and half my land? Shall I give to thee all my fields which cannot be seen from the palace here?"

"Why should I wish thy land when I have no cattle to till it, nor mules to gather the harvest? In lieu of the land, give me only a share of what it should produce for a few years. Now give heed to the bargain I will make with thee. If thou wilt deliver to my storehouses, upon the plateau, all the gathered grain of thy past two crops, and all the grain thou shalt gather from this growing crop (save only what thou needest for seed), and half of each of the crops of the three succeeding years,--provided, however, that you assure me each year as much as thy thousand mules can carry in an hundred journeys;--then thou mayest keep all this store of gold, which is, indeed, all that both of us from the Blue Star possess."

He seemed to be revolving these terms slowly in his mind to be sure of them, and then called out to his servants,
"Bring in spiced wine, and bid my Chief of Harvests enter! He shall be witness that Hotep agrees to this compact, and, should I die before it is fulfilled, he shall see that it is carried out to the last year. But wilt thou leave all this gold with me now, or must I wait until the harvests are delivered?"

"What Hotep promiseth me I believe, as certainly as if it were done already. I will leave the gold with thee, knowing thou wilt perform the contract in every item; but if thou faildest in any year, thou shalt return to me one small gold-piece for each trip that thy thousand mules fall short of an hundred."

He agreed, and arose and recited the terms of the compact to his Chief of Harvests, charging him to carry it out, and to cause to be engraved a small stone cylinder as a permanent record of its provisions, as it was their custom to do in such cases. Then filling three goblets with rich spiced wine, he exclaimed,--

"For thy sake, O most generous youth, may the Nasr-Nil fondly nurse every harvest, and may the gentle Snowless Month ripen them in such abundance as they have never shown before! And may Hotep's mules grow old and weary bearing the plenty to thy storehouses!"

CHAPTER X

Humanity on Ptah

The magnificent abundance of the seventh great harvest, which ripened late in the year of our arrival, attracted a multitude of both men and animals from all the out-lying countries into Kem to assist in gathering it, and many of them remained to spend their gains in the luxuries of the great city. It was an unparalleled period of prosperity and plenty; and though the rich wasted everything with a careless hand, the poor were better provided for than they had ever been.

Like an endless caravan Hotep's mules trailed across the city day by day, and emptied their cargoes into the bottomless pits of the Gnomons. And Hotep's thousand cattle tramped his threshing-floors during the long winter, and until the later nightly snows signalled the coming of a tardy spring; and yet the patient mules streamed through the city, and wore deeper paths into the sides of the Gnomons, until one by one the great chambers were filled and sealed.

Late in the spring the toiling cattle left the threshing-floors, and traversed the fields in long procession, two and two, lashed together by a bar across the horns instead of a yoke, and dragging heavy stone ploughs slowly after them to prepare the soil for a new planting. But while the whole left bank of the Nasr-Nil swarmed with Hotep's patient teams and their busy drivers, the right bank was deserted, idle, and lifeless. Every one wondered why the Pharaoh's planting was being delayed; no one knew why the Pharaoh's men and cattle were idle; and the old men shook their heads and muttered that the river would overflow its banks long before the Pharaoh's seed was in. After a while Zaphnath sent for me, and when I came before him he said,--

"The Pharaoh is sick with the plenty of the land, weary of the sight of grain-laden mules and ploughing cattle, and so cumbered about with mountains of wheat that he desireth not to plant his fields. Thou art not one to see his lands lie idle. If thou hast aught with which to tempt him, I can persuade him to let unto thee all his land and to hire unto thee all his men and mules and cattle. For hath he not acquired all his riches in seven years' harvests? and in another seven thou mayest be as rich as he."

"Mayhap, O Zaphnath, the coming seven years may not be as plenteous as the last seven have been; but, in any case, I have no more gold with which to tempt the Pharaoh, having parted with all of it in a bad bargain with Hotep, whom thou knowest, for half of his coming crops."

Thereupon he bade me remain, and sent for Hotep, and said to him,--

"Behold, have not the harvests of seven years made Pharaoh the richest man upon Ptah, so that he covets no more grain, but only things of rare beauty? And are not thy harvests reduced by half through thy compact with him from the Blue Star? Now, if thou likest to tempt the Pharaoh with an hundred of thy golden coins, and one-and-twenty of the moon-sized discs of gold such as thou wearest there, thou mayest hire his land for the next seven years, and all his men and animals for a like time, if thou wilt feed and nourish them; and then shall not both banks of the great river bring forth riches, and be burdened with the plenteous harvests of Hotep?"

"Is the Pharaoh indeed weary of rich harvests, or doth he rather itch for my gold? Yet, had I the seed to plant all his fields, I might consider the undertaking thou shewest me."

"Let not that delay thee," answered Zaphnath, "for I am sure he will gladly lend to such a man as Hotep the seed thou needest until thy next harvest be gathered."

So the matter was thus finally concluded, and I was a witness to the compact.

Then Hotep's Chief of Harvests worked early and late to finish planting before the Month of Midnight Snows, when the Nasr-Nil usually overflows its banks and waters the harvest. But, as if to oblige a man so industrious in preparing the way for it, the great river did not rise at its customary time, and Hotep was able to finish his seeding on both banks.

The black loam along the shores parched and crumbled, and borrowed the look of the great desert; the feathers
of darkness fell later and later, until they began to appear with the dawn, and yet the river failed to rise; the priests went through their perfunctory rites to placate the god of the Overflow, and made their impotent sacrifices to tempt him to bless the harvest; but Hotep saw the Snowless Month, which should have ripened his grain, dawn upon fields that were dried to seas of drifting dust and void of all vegetation. His army of men, augmented by the Pharaoh's thousands, and his ten thousand cattle and mules, all ate and waited and waited and ate, and yet there was no work for them. The following spring there was no need to plough the fields, and no seed to plant them.

When Zaphnath learned that Hotep must deliver a hundred thousand mule-cargoes of wheat to me, or forfeit a hundred gold pieces, he sent for him, and sold to him for the hundred pieces enough of the Pharaoh's grain already on the plateau to pay me, and lent him the seed to plant all the land again. But aside from this, the Pharaoh sold not a bag of wheat, and during the first year all the small stores of grain throughout Kem were consumed, and the price rose to three times its former value. Therefore, Hotep comforted himself with the thought that he could make more out of one crop after a failure than he could have made out of two crops without it, and he happily sowed his fields anew.

Before the river was due to rise the second time, the poor began to suffer from the famine. There was no employment for the thousands who had been attracted to Kem to gather the previous large harvests. Only those fortunate enough to be slaves enjoyed an assured living, and this entire class was now dependent upon Hotep, for Pharaoh supported only his women and his personal servants. Many people desired to deliver themselves into slavery, but Pharaoh would not accept any, and Hotep already had more than he could feed. During the Month of Midnight Snows the entire population of the city watched the river with apprehension, noting its slightest fluctuation. But day after day the people saw no change, and idleness fostered grumbling and discontent among them. Zaphnath and the Pharaoh were privately criticized because they did not attend or contribute to the sacrifices made to the god of Overflow; because they hoarded so much grain, and did nothing to alleviate the distress of the people. And there were many who attributed the unusual action of the river to the presence upon Ptah of two strangers from the Blue Star.

When two fruitless months had passed without any rising of the waters, Hotep lost courage, and was obliged to proclaim that all his men and beasts must exist upon half-rations. It was then that public suffering became general. About this time I consulted with the doctor whether to press Hotep for the second delivery of a hundred thousand cargoes of wheat.

"Certainly; demand it from him," he answered, greatly to my surprise, "especially so long as it amounts to squeezing the wheat out of the Pharaoh. It is certain he will furnish the wheat in exchange for Hotep's gold, and a few coins are really nothing to him or to you either. As long as the Pharaoh covets them, make him pay well for them."

"But I expected you would advise leniency, as you have never sympathized with my wheat speculation in the least," I replied.

"I do not share your idle dream of riches, but nevertheless I want to get as much wheat into our hands as possible, especially if it comes from the Pharaoh. You do not seem to appreciate the real reason, but blindly chase after the bauble of fortune. It was the same when I first saw you in Chicago, and now you are just as impulsive and thoughtless. I have no doubt but you have already computed a hundred times how rich you are in Earthly terms and figures."

"The time for a big value has not quite come yet, but I confess I have estimated that it will run into many millions of dollars."

"Rubbish! What is the use of such childish nonsense? Even if we had our projectile to return with, you could never take any of your riches back to Earth with you!"

"And why not?" I demanded in astonishment.

"What is your fortune? It now exists in grain at an inflated famine value. You couldn't transport the grain back to Earth, and if you could, it would shrink in value and fail to pay the freight. What can you exchange it for here? For lands, for women, for slaves, none of which have any commercial value on Earth."

"But I can sell it for money!" I put in.

"Yes, for iron money worth a few dollars a ton on Earth! Why, not even your entire fortune will buy enough iron to build a new projectile to enable us to return. You parted with the only valuable and portable form of property when you exchanged your gold. Now that is rapidly going into the Pharaoh's hands, to remain there, and you can never return to Earth as rich as you left it, though you be worth all the money and property in the land of Kem!"
"I have heard that sort of talk often before, Doctor, but I never saw the truth of it quite so plainly as now. I have outwitted and squeezed Hotep, the man on whom the whole city now depends for existence."

"They think they depend upon him, but you know as well as I do that he will be powerless; that he must see them starve by thousands, and part with the last bit of his cherished riches to save his own life. No, Isidor, your business sagacity has not been in vain, for this entire people depend not on Hotep, but on you! You alone have the food to preserve many of them alive through a famine and a pestilence whose horrors are just beginning. Pharaoh and Zaphnath will squeeze and pinch them, and see them die, and turn it all to their own profit; but let us constitute ourselves a relief committee, you and I. Let us set these Kemish rulers an example of humanity, as we know it on Earth."

CHAPTER XI
Revolutionist and Eavesdropper

In Kem, where agriculture was almost the only occupation, and where the ox was helpful both in planting and threshing the grain, it was quite natural that he should be revered, or at least respected as a partner in the toil, and that a strong prejudice should prevail against his being slaughtered for food. In fact, it was not the practice of the Kemish to eat any large animals, but they confined themselves to fish and small fowl for meats. Nevertheless, I urged upon Hotep the necessity of killing some of his cattle to provide food for his miserable and poorly-fed labourers. But he stubbornly refused to do so, saying his men would rather eat the flesh of mules than of cattle.

Without being pressed for it, he paid me the second hundred thousand cargoes of wheat, which he bought from the Pharaoh with gold, as he had done before. But I divided this entire quantity of grain among Hotep's labourers, which eked out their half-rations for almost a year. I stipulated that none of this grain should be used for seed, for I firmly believed it would be wasted. But Pharaoh again lent the seed for planting a third crop, insisting that the discouraged Hotep should put it in the ground, and reminding him that the only way he could get grain to pay his heavy debts was to raise a crop.

Thenocris had not been long in learning the location of our house near her favourite gate, and it was her habit to call on us every day at the time of the noon-day meal. She always carried and caressed her white rabbit, and they came to us like two dumb animals to be fed. Her tall, stately figure, traversing the city on her daily journey to our house, soon became a familiar sight; and when the people began to be oppressed by hunger, they gradually overcame their early fear of us, and followed her to our door for food. We had never turned any away, for beggary was rare enough in Kem, and no sane person ever resorted to it except in the sorest extremes of need.

Zaphnath doubtless looked with an evil eye upon the crowds that daily thronged our door to secure food. The Pharaoh rarely left his palace, and bothered little about affairs outside, and Zaphnath must have been at the bottom of an edict which was shortly issued. Nothing that I remember in Kem better illustrated the absolute power of the Pharaoh and the unrestrained enforcement of his merest whim. The edict referred to the scarcity of bread and the multitude of foreigners who were flocking to the city to secure it, and provided (ostensibly for the good of the Kemish people) that no man in the city of Kem should give bread or any sort of food to any but the members of his own household. Moreover, no man should sell grain or bread at a less price than that established by the Pharaoh for the sale of his own.

The doctor and I realized that this was aimed at no one but us. They were jealous of our charity, and wished to turn everybody's need to their own profit. We scoffed at the tyranny of such an edict, but it was the arbitrary sort of law to which the Kemish were accustomed. Yet if we gave up our undertaking, and the unfortunate multitude went unfed for a few days, bread riots were certain to break out, and they might result in the death or overthrow of the short-sighted Pharaoh, and the seizure of his grain. Even this would not settle the question, for the victors might enforce a worse monopoly of it, if that were possible.

"We must continue to feed them all outside the city,--at the Gnomons, for instance," I suggested.

"Yes, we must feed them there in a large chamber, and eat with them, so that they may be considered members of our household," added the doctor.

Thus it happened that the paths which Hotep's mules had worn so deeply were now thronged by a great multitude of the city's poor in their daily pilgrimage to the Gnomons. In an enormous chamber which we fitted up for that purpose, we served to each comer one generous meal, and there were so many who came that this meal was going on almost all day long. The Pharaoh fed no one but his favourites and his soldiers, and of these last he discharged a large number, reducing his army to a hungry, ill-fed thousand men. Those who were discharged came to eat with us, and many of those retained would gladly have done so, had we not excluded every one in the Pharaoh's service.

Meantime the Nasr-Nil ran lower in her banks than ever before, and gave no signs of rising; the nightly snows were brief and evanescent, and the rains, which had never been copious on Ptah, now ceased entirely. Every green
thing gradually vanished from Kem, and Hotep's third crop rotted or lay sodden in the ground as the others had
done. He knew that I had been offered the opportunity to plant the Pharaoh's fields, and that I had not only refused,
but had hoarded grain. This may have led him to conclude that I knew some reason for the famine, and I was not
surprised when he sought me one day at the Gnomons. He begged a strictly private interview with me, and I
conducted him to a small room I had constructed by running two thin walls of porous stone from one Gnomon to
another, and covering the enclosure with a flat roof.

"Dost thou know that thou hast linked together with thy slender walls the monuments of two antagonistic
dynasties?" he began. "This structure to the left was built by the fifth ancestor of the present Pharaoh, in truth the
first ruler of his dynasty. The structure to the right, however, is vastly older, and was built by the tenth Pharaoh of
the dynasty, from which I am directly descended. My ancestors were vanquished by dint of wars, and their powers
usurped by the ancestors of this same selfish Pharaoh, who hath not so good a right to rule as I."

I think I was born without a vestige of revolutionary spirit, for I have always felt a respect for the institutions
that are, and an allegiance to the powers that rule. I remember the distinct shock which this utterance of Hotep's gave
me. I said nothing, but he answered the surprised look on my face.

"Thou knowest well that the entire labouring population of Kem is fed by me in my fields on one side of the
city; while all the poor and unfortunate are fed by you here on the other side. What man of Kem thinks of the grand
palace of the Pharaoh in the midst of the city, but to curse it? What subject who knows how the Pharaoh and his
favourites gorge themselves in luxurious plenty, while he nurses his hunger, but would a thousand times rather pay
allegiance to those who save him from absolute starvation? And Zaphnath, in his nightly wanderings and his daily
errands of espionage, thinkest thou he overhears a public grumbler who fails to curse him and his Pharaoh, and to
extol the men from the Blue Star, and the unfortunate farmer, who, until now, has been able to give the people work
and sustenance?"

"Doth Zaphnath spend his time in watching and spying, then?" I asked.

"Aye, that he doth! I crossed his path even now, coming through the city, and he set at following me, but by
quick turns I eluded him. He it is who by his loans and compacts hath snared and tricked me until now I am utterly
ruined, unless I can claim my rightful turn at ruling. Alone I cannot do it; with thy help I can."

"How, then, could I be of assistance to you?" I exclaimed in some astonishment, without stopping to think of
the justice of his claims.

"From what I have heard of the thunder thou commandest, and the lightning thou art able to carry, it doth
appear that thou couldst overcome the Pharaoh and his thousand half-starved men, who secretly itch to change
masters. Thou hast the means to do it; I have the right to do it; and the people would unanimously applaud the doing
of it. Let us strike together, then; let us seize the Pharaoh's grain and apportion it among our supporters and the
needy, and when I am established as Pharaoh, thou shalt be my ruler in the place of Zaphnath."

"Thou temptest me but little, O Hotep. Once before I was offered a rulership in Kem which I refused. Besides,
am I not bound by an agreement to loyalty and obedience to this Pharaoh?"

"Aye! Even as I am bound to come to a sure ruin; and as every man in Kem is bound to sit meekly by and
starve. But is a ruler no way bound? May he claim the life of his subjects for his profit? How long will they suffer
such treatment? And if we are restrained by loyalty, how long will it be till some one else strikes the blow we stick
at----?"

He was interrupted by a vigorous knocking at the door, as of one who commands rather than entreats an
opening. Who could it be? I turned to see, but Hotep caught me by the arm.

"Before thou openest, tell me if thou wilt join me in this undertaking for the sake of a suffering people?"

"Nay, Hotep; it is wrong, and I will not do it. I am bound to this Pharaoh, bad as he is, and to thy dynasty I owe
nothing." The rapping began again and more loudly now, but Hotep still restrained me.

"For half of all my fields wilt thou furnish me the grain to pay the Pharaoh, and thus avert my ruin?"

"And if I would, how wouldst thou feed the men and mules and cattle through another year of famine, and
another, and another?"

"Thou thinkest the crops will fail yet three more years!" he exclaimed, half stupefied by the thought.

"Aye, four! I know it for most certain," I answered, and the insistent knocking was vigorously renewed.

"Then I am too deep in the mire for thee or any one to pull me out. Open to this importunate knocker."

I threw open the door, and there stood the keen-eyed, angry-visaged Zaphnath! How long had he been listening
outside there? How much had he stealthily overheard before he began knocking? All the Kemish had need to speak
doubly loud to us from Earth, for our ears were not made for thin air and its weak sounds. Moreover, Hotep had
spoken throughout with a fervent declamation. But what I said in my ordinary tones was always easily understood
by Hotep's keen ears. Therefore it seemed quite certain that Zaphnath had heard through the thin wall all that Hotep
had said, and probably none of what I said. So much the worse. He had doubtless supplied my speeches to suit
himself, and made them fit into Hotep's plotting. At any rate there was hot anger in his face when he spoke to me,—

"Thou servest the Pharaoh well, by contriving how to cross his wishes at every point! It were well thy office were withdrawn; I have brothers about me now who could better fill it."

"Whenever it pleaseth the Pharaoh or his all-potent ruler to abrogate his compact with me, I am quite ready to begin where we left off when it was made," I retorted. I did not think till afterwards that this might serve wrongly to indicate to him the tenor of my answers to Hotep's scheming. His eyes flashed angrily at this, yet he made no reply, but spoke to Hotep instead.

"Before the end of the clock this day, the Pharaoh requireth of thee full settlement of all thou owest him. Attempt nothing but a just and full repayment, O most precious Hotep, for thy every act is watched and known to us!"

CHAPTER XII
The Doctor Disappears
Hotep saw that he was ruined, and he went to fall down before Pharaoh and beg for mercy. The monarch, not having the courage of his own hard-heartedness, answered him,—

"I desire not to deal harshly with thee, O Hotep; for thou hast struggled desperately against an unwilling soil and unpropitious seasons. But thou knowest all my affairs are in the hands of Zaphnath, without whom I do nothing. Therefore go thou before him and do even as he telleth thee."

And Hotep, having made an invoice of all his money, and slaves, and mules, and cattle, took it before Zaphnath, saying,—

"Behold, O most merciful ruler of Kem, I have threescore-and-ten of the great golden discs, and seven hundredweight of the coins of Kem wherewith to repay the Pharaoh for the seed which the seasons have stolen from me. But I have neither food for all the men, and mules, and cattle which are the Pharaoh's, nor yet for mine own; wherfore I beg of thee to take back his slaves and animals, and release me from feeding them; and I will forfeit unto the Pharaoh all my working slaves, which are thirty score, and all my mules, which are a thousand and one, and all my cattle, which are an hundred score, and they shall be his for ever."

"Methinks thou borrowest with a large hand and repayest like a very miser," answered Zaphnath. "All the money thou namest will not buy a thousand cargoes of grain, for behold, is not wheat worth iron money, weight for weight? And to reimburse the Pharaoh for feeding all his men and animals through the famine, which may continue, it is a rare kindness in thee to desire to give him also all of thine to be fed and nourished! What wilt thou do with all thy land when thou hast no men or beasts to till it? And how wilt thou maintain thy proud palace, with three hundred women, when thou hast no revenues left?"

"'Tis true, O Zaphnath; and if the Pharaoh covet them, take them all—the palace, the women, the rich clothing and rare jewels, and even the endless fields which have cursed me! For the days of Hotep's riches are ended. Let him be acquit, and go from thee in peace!"

"Even with them all, thou knowest he is but poorly paid; yet it is I who have prevailed upon him not to be harsh with thee. But if the famine continue, what thinkest thou of doing to gain a living?"

"By my beard! Doth the Pharaoh wish to make a slave of me also?"

"Nay, Hotep; not a common slave. But hast thou a mind to starve? I have besought him to give thee an honourable and luxuriant service, befitting thy tastes and habits. He will make thee chamberlain of his palace."

"Is there no other thing thou canst think of or invent, O most merciful Zaphnath? Lands, slaves, animals, money, women, jewels, palace, and even my life and body for the gracious Pharaoh's service! Is that all? If so, I beg thee declare the bargain made and all my undertakings fully acquit."

Hotep came to me the following day, with his beard shaven and the Pharaoh's bird-wing on his brow. He wore the dress of the Pharaoh's chamberlain, and he told me how it had all happened. He also told me that the Pharaoh had now thrown wide open the doors of slavery, and offered to feed all who surrendered themselves to his service for life. And Zaphnath never ceased to itch for all the lands, and cattle, and slaves of every one in Kem and her tributary countries, either in exchange for the bare needs of life, or as pledges for seed which he knew would only rot and ruin the borrower.

I went about my affairs on the plateau that day, wondering how long I should continue there, or whether my threat had been effective in silencing the enmity of the rulers. When I returned that evening, I did not find the doctor at the house. My servant said that a messenger from the chamberlain had summoned him on important business, soon after the noon-day meal. I waited a little longer, and then I began to fear that the chamberlain had been used to decoy the doctor into some trap. If he was staying away of his own account, why did he not send me some word? Messengers were plenty. At last I sent the servant to the palace to inquire and search for him. After a long stay he returned, saying the doctor was nowhere to be found. No one had seen or heard of him there that day.

"And the chamberlain?" I demanded.
"He was not to be found in his rooms, and no one had seen him since noon-day."

"Didst thou make inquiry for the messenger who summoned the doctor?" I asked.

He had not thought of it; so I started to the palace myself. I had gone but a few steps when it occurred to me to act with a little more caution, and be prepared for some plot against myself. I turned back to the house, and had the servant remove the heap of pillows where I slept. Underneath was a loosened stone of the floor, and below it we kept the rifles, revolvers, and ammunition hidden. I carefully loaded all of them, and put all the remaining cartridges into our two old belts. I thought of strapping one of these about me, but reflected that this would have a hostile and treasonable appearance, so I contented myself with concealing one revolver in my coat, and then I carefully covered up all the rest, and had the servant pile the pillows over the stone slab again.

Then I went out and walked to the palace. Leaping the wall, I questioned every one I saw about the doctor, the chamberlain, and his messenger. No one had seen anything of them. The messenger was absent from his lodging, as well as the chamberlain. Either they were all gone somewhere secretly together, or they had all suffered a common mysterious fate. Unable to do anything more, I returned home full of apprehension.

I slept fitfully a few hours, and then I had a most realistic dream, which began among my old surroundings on Earth: the wheat pit, the closing of a turbulent session, the drive through the parks till I came suddenly in sight of the great spherical cactus design of the World in Washington Park. As I approached this, it seemed to leave its pedestal and move freely through space toward me. I seized one of its meridians, and, clinging tightly, was carried off over the park, over the lake, over seas of ice, through an ocean of sparkling light, faster and farther every moment, until presently my little globe refused to hold me longer, and repelled me through a long, giddy, awful fall which filled me with terror. But I landed in the dark chamber of a Gnomon, waist-deep in loose wheat. It seemed gradually to grow deeper about me, rose to my shoulders, to my chin; and as I looked up I saw Slater pouring in wheat in a steady stream. He meant to smother and choke me with it. Ah, if I only had a thousand, aye, ten thousand mouths to eat it, he could never do it. I could keep even with him. But it gradually rose past my mouth, past my nose; it covered my head and was smothering me. What an awful thing was too much food, after all! And then I wakened to find my head covered with pillows until I was half-choked for breath.

It was all so vivid I could not rid my mind of it. It seemed really to have happened but a moment ago. My mind was palpitating afresh with those Earthly scenes which had for years been fading out of it. What could it all mean? Then I thought of the doctor. Perhaps they were smothering him in one of the Gnomons. It seemed hardly probable, but the idea took a strange hold on me. The chambers were all full and sealed, but one; it had been opened, and wheat was daily being used out of it; none was at hand to be poured in. It was foolish to do so, but I could not rest until I had gone to the Gnomons to see. Of course I would find nothing there, but I should not be content till I had tried. At least, the night air and the gently falling feathers of darkness would restore my calmness again.

I had the precaution to take my revolver again, and after a very short walk I stood face to face with the great stone gate, barred and locked to confine all others within the city. The fact that it was fastened on the inside proved that the doctor's captors were not outside, or, at least, did not expect to return till after daylight. With a brisk jump I cleared the wall easily, and walked rapidly to the plateau. There was no sign of life there. I mounted the only unsealed Gnomon and shouted down into its cavernous depths. Of course there was no answer. I was now so wide awake it seemed to me quite silly to follow the promptings of a dream, so I began to return in a leisurely walk.

The night scene all about me, how different it was from those to which I had been accustomed on Earth! Out of a pink sky flakes of frozen dew were gently falling, starching the arid, verdureless soil with a glistening coat of evanescent white. Along the river bank, tall, slender, lightly-rooted trees reached far up into the breathless air, but there was never the movement of a bough or the rustle of a leaf, except from the flutter of birds. Jungles of spindling reeds also towered from waste marshes, in testimony to the easy struggle which vegetable sap had been able to accomplish over a weak gravity. Everything was eloquent with the reminder that I was on a different world; but yet, when I looked up at the starry heavens, they were the same. All the familiar constellations, changing their positions through the night with the same stately dignity, were there. The Pleiades, Orion, the Great Bear, with his nose constantly pointed at the Pole Star, made me feel that, at least in the heavens, I was at home! Only the colour of the night, the two little moons, and the planets looked different. Great Jupiter, king of the Martian night, whose brilliancy, if not his size, outrivalled the pale moons; Saturn, with his tilted ring, was visible to the naked eye; and yon pearly blue star, just rising to announce the morning, was Earth. Earth, which I had so unwillingly left, would I ever see her again as anything but a Sun-attending star? Would I ever walk her familiar paths, and know my brother creatures there again?

With this thought came over me an unspeakable sense of loneliness, a depressing home-sickness, an aching yearning for that life, tempestuous as it had been. And how I despised the monotony and lowness of the Martian life; how I loathed the spreading misery of the famine, and the vile and dreadful pestilences which it was begetting! How could I ever endure the four more slow years of it which I confidently expected to ensue? What would I not give to
leave it all and return!

I had retraced my steps, leapt the wall again, and as I approached our house was surprised to see, in the dim light of the coming morning, a figure standing guard at the doorway. He was a soldier, and on closer approach I saw that he wore a beard, which showed him to be a captain. But what surprised me far more was that he held awkwardly in his arms one of our loaded rifles. Here was certain treachery. Since he stood guard, he doubtless had soldiers within; and if they had found one firearm they must have found the others also. But how had they succeeded in finding them? A mere search never would have revealed their secret place. Some one who knew of their location must have disclosed it. Could it have been the doctor? Had they brought him back, and forced him to produce the arms?

In that case, now was my chance to liberate him. Fortunately they did not know how to use the arms they had captured, and I had one revolver with five good loads in it. With five telling shots I ought to be able to create panic enough to enable the doctor to get possession of another gun and help me rout them.

All this flashed through my mind in a twinkling, and just as I drew out my revolver the captain caught sight of me. He quickly shifted the rifle in his hands and tugged at the hammer. He knew nothing of the necessity of taking aim, or of the use of the trigger. It would only be by the merest chance if he hit me. I had half drawn the trigger, and was just correcting my aim, when a long flash of flame from the rifle startled me, and unconsciously I fired wild. By lifting the hammer of the rifle and letting it snap back, the captain had exploded one cartridge at random. But my careful aiming had now taught him a trick; I saw him attempting the same arm's-length aim with the rifle. He did it awkwardly enough, and pulled up the hammer with the other hand. It fell with a snap on the discharged cartridge. He could be relied on never to learn the trick of ejecting them and reloading with the sixteen that lay ready up the length of the barrel. Therefore, instead of firing again, I rushed at him to capture the rifle. But he was too quick for me, for thrusting it inside the house with a quick command, the other was handed out to him. I was now at such extremely close range that his awkward aim covered me; but I was quicker on the trigger than he was on the hammer, and with a cry the first Martian to suffer by gunpowder fell to the ground. I sprang for his rifle just as some one from inside snatched it away and pointed it at me again. Whoever had it, stood half behind the door and out of range. But I aimed at his fingers on the rifle barrel, and by a lucky chance I hit them, for the rifle dropped and the body staggered into full view. Another quick shot sent this fellow to the ground, but as I reached for his rifle, it was snatched away again.

Now I saw the absolute necessity of possessing myself of another firearm, for I had but one load left in the revolver. I felt little fear of their awkward aim, therefore I made bold to rush inside on the chance of seizing the first gun I could lay my hands on. At the same time I would be able to see the position of the doctor. He must be gagged, for he had made no answer to my frequent cries to him in English. Once inside, I saw that the room was full of soldiers--twenty at least. They had a prisoner, true enough, but not the doctor. It was my servant, whom they had forced to disclose the location of the arms.

The soldiers quickly blocked the door and began closing in on me. One seized me by each arm, but with a quick shake I threw them off. Then a third fellow clutched my left arm so tightly I could not loosen him. Had I taken my eyes or my revolver off the crowd in front, they would have been upon me in a body; yet with my left arm I was able slowly to turn the clinging soldier around in front of me and to bring him gradually within close range of my revolver. When he saw its gleaming muzzle, he broke from me and fled to the others.

Little did they know that I could not afford to sacrifice my remaining load to kill a single man. I must use it to capture the other revolver, for rifles were of no use at such short range. I manœuvred cautiously to keep most of the soldiers in front of me, and stealthily backed toward the door, where a soldier stood guard with the other weapon. I was reckoning on the cowardice of most of those in front of me, but I had failed to count on the men I had shot. As I now backed quickly toward the door, I suddenly felt the arms of the fallen man about my legs, and I stumbled backwards over him. In a twinkling the whole crowd was upon me, my revolver was seized, my arms were pinned to the ground, and the dying soldier clutched my legs in his last frenzy. I expected no better than to be shot immediately by a rifle held against my head, but their orders were evidently different. My arms were securedly bound with rough fibrous thongs, and then they marched me to the palace just as the sun was rising.

CHAPTER XIII

The Revelation of Hotep

I was not a little surprised to see that they carried me to the same ante-room in the palace which I had occupied on coming to Kem. But it was now quite stripped of all furnishings, and over each door were hung large, closely-spun fabrics, which completely covered and concealed them from sight. There were but two little windows high above my head, and had I been free to leap up to them, they were too small to afford me an exit. Driven into a stone slab of the floor were two large bent-wood staples. Between these they placed several cushions, upon which they laid me.
"May it please the strong man to rest here quietly, aye! and to slumber if he feel the need, until my master, the worshipful Zaphnath, be risen?" sneered the leader in polite irony, as the soldiers, having unbound my arms, proceeded to tie each hand securely to one of the wooden rings. Then with jeers they left me, pointing the fire-arms and swords at me as they went. I heard them bar the doors on the outside and try them with a severe shake; then their footsteps receded and all was still.

As I lay on my back looking up at the vaulted stone roof, I had my first leisure to reflect on the desperate condition into which we had at last fallen. The arms, which had meant our supremacy, were in the hands of our enemies; Hotep, our only friend in the palace, had mysteriously disappeared; the doctor was taken, perhaps killed by this time; and I could hardly outlast the day, for Zaphnath would reserve but one fate for a conspirator who sought his place. How soon would he come, and how would he dispose of me? I remembered having seen the punishment for treason of a noble personage, with whom I had once eaten at the Pharaoh's table. He was confined at the bottom of a tight stone pit, and a heavy, poisonous gas was slowly poured into it. He could see it slowly fill the pit, and as it gradually rose toward his nostrils, he could feel his death gradually measured out to him by inches. When he had breathed it in a little, his face swelled a livid purple, he choked and strangled, staggered and fell beneath the murky surface to die out of sight. The terror of such a slowly creeping danger! the horror of such a repulsive death! I remember saying at the time that in his place I would have snatched a quick respite from the lingering agonies by strangling myself, or tearing my wrist open with my teeth. Now, as I thought of it, I suddenly remembered my dream of being similarly smothered in the Gnomons by slowly inpouring grain. A superstitious mind would have feared that dream foretold my fate, but I was rational enough to perceive that it must have been suggested to me by a vagrant memory of the poisoning I had seen.

As I lay thinking thus, I shifted my position a little on the pillows for better comfort, and my eyes wandered slowly from the vaulted roof to the daylight at the two high windows. I started in terror at what I saw, but blinked my eyes to make sure I was awake, and then looked more intently. There was no dreaming this time! I saw clearly, and at both windows, a curling, purple stream of dense, noxious gas pouring down into the room! It was much heavier than the air, and trickled slowly down like the ghost of murky waters gradually filling up a great well. Then I turned to look at the floor, the stones were no longer visible, but a coat of muddy purple covered them to a depth of several inches, and the noisome gas already reached almost to the tops of my cushions! All this had trickled in within ten minutes, and twice as much more would rise and cover me completely. Then an awful but silent death would creep into my lungs, and my only friends, the common people of Kem, would never know how I had perished.

Did I try to strangle myself or tear open my wrist? I could not get hand and mouth near enough together for either of these expedients, had the stubborn instinct of self-preservation left them any place in my mind. I kicked away the cushions, which gave me a little more room to work my knees under me. Then by straining on my thongs I was able to lift my head and shoulders upright, and save my nostrils from the noxious stuff for many minutes longer. All the years of my life on Ptah I had been vain of my superior physical strength. Would it serve me now to break the thongs that bound me? I tugged, and pulled, and struggled until I cut the flesh, but they only drew tighter; yet at each effort I gained a little more length of thong.

The purple surface, on which death floated, crept up toward me. The room was gas-tight; the doors were so covered that they could not leak, and had I succeeded in breaking loose I could not have shaken their bars. To save myself, I must make a breach in the floor; I must pull up a slab and let the gaseous poison run out below. That was my only chance. I worked my knees back as nearly as possible to the edge of the slab into which the wooden staples were fastened, and threw all my weight and strength into the effort. The stone did not move. Yet I got more thong-room, and succeeded in doubling my feet under me to give more force to the next heave. I felt sure I could have lifted the weight of the stone if it were free, but struggle as I would, I could not loosen it from its wedged position. The purple poison had risen to my waist by this time, and in my violent efforts I had stirred it into billowing waves which occasionally surged almost to my nostrils. I had breathed a little which made me faint and giddy. I feared lest I should stagger and fall into it. Once my head below the surface, and I was most surely and horribly drowned!

I stood resting a second, anxiously thinking, planning in desperation and keeping my eyes always fixed on the rising purple. Suddenly, though I had given no tug, I heard the stone under me crunch at its edges, and felt it begin to rise a little at one side! What could have loosened it, when all my efforts had failed? No matter! if I could pull it away now and make a breach, I would at least gain a long respite. I tugged again and found it easy to pull the loosened stone up on one edge, till it tottered and fell over against me. Feverishly I watched the poison about me; it rose no longer; slowly it began to sink away. Thank God for so much!

Then suddenly I heard voices calling me. They seemed to come from below. Yes! It was Hotep in Kemish,-- and the doctor in English! Were they confined in the cavern below, then? And had the gas been reserved for them, when it had finished its dread work with me? Horrible thought! If so, in saving myself I was only sending the sure
poison to them. Where were they? I could not see down through the murky stuff; but I must warn them.

"Halloo! The gas is poisonous! Leap through, save yourselves! Climb out, or it will kill you!"

"Bear up!" I heard the doctor's voice begin, "one minute more and we------" Then there was a violent coughing, a door slammed, and the voice was barely heard--afar off--as through a wall. Had they escaped, then, to another room? I had no further time to puzzle what it meant, for another slab of my floor rose, wavered and fell over with a crash, and up through the purplish gas I could see a great round black thing rising, stretching high up into the room until its top almost touched the roof.

My God! It was the projectile!

When the breach in the floor was cleared, all the gas rushed down into the lower chamber. The projectile eased over on its side, and out of the rear port-hole came Hotep with a revolver and a sword. He soon had me cut loose, and then he told me how it all had happened.

He had been chamberlain but a single day when he discovered the existence of a secret subterranean chamber under the ante-room of the banquet hall. His curiosity led him to explore this, and in its darkest recess, unseen at first entrance, he found our projectile. It had been there ever since the day of its disappearance. During our interview before Zaphnath and the wise men, they had learned from us that others could not come from Earth without the projectile, and that we had left no third person in charge of it. It must have been with an order to make away with the projectile, and to secrete it in this chamber, that the third messenger had been dispatched that day. Also on my first evening in this very ante-room, I had heard Two-spot barking in the chamber below, and the servant, on hearing him too, had him hastily released, lest he should betray the hiding-place.

As soon as Hotep had found the projectile, he had sent for us, but it was the doctor alone who joined him. They two had been busy all that day and night repairing the projectile and storing it anew. In this manner the doctor had escaped the soldiers who came at daybreak to capture us both. Beyond the projectile, Hotep had discovered a secret passage leading outside the palace walls, which they could use on their errands of repairs without being observed.

All night they worked without disturbance, but early in the morning something happened to alarm them. They heard footsteps outside and a noise at the door which led to the palace. It probably meant death to be discovered there, but they extinguished their lights, entered the projectile, and closed the port-holes and lay there quite still. The door was opened, and soldiers bearing lights entered. But they made no search; they carried with them our swords, fire-arms, and the two belts of cartridges, which they deposited here, it being the natural place for their safe keeping.

When they were gone, the doctor emerged and examined the revolvers and rifles, and finding that five cartridges had been discharged, he knew there had been a struggle with me in which I had been worsted. This caused them to hasten their efforts and make an escape with the projectile as soon as possible. All the supplies necessary to the batteries had been found intact in their places, and the compressing of air with the repaired pump and the further storing of food could be postponed till they were more free to do it.

At last the projectile lifted and worked; slowly it loosened the stones of my floor above them; but when one stone was pushed aside they noticed that the daylight did not come through the breach as it ought. They had heard my cries, and as the gas came down on them, the doctor had slammed the front port-hole, which was never wide open, and had thus saved himself. Hotep was safely shut into the other compartment with the fire-arms and ammunition.

The doctor now came down to the rear port-hole to speak to me.

"My plan is to escape now to the Gnomons, where we will leave Hotep in possession with most of our fire-arms. You can give him some instructions how to use them, so that he may defend himself. There we can finish our stores of air and food." To this I assented, and said to Hotep,--

"The Gnomons I give to thee, and all the land round about them, as a reward for thy most valuable assistance. Also I put into thy charge all my stores of wheat, to be distributed among the needy. Thou must husband them to last yet four years more, and for thine own thou mayest keep one measure in twenty. Take thou also a sword, a rifle, a revolver, and a belt of cartridges. Mayhap, to thy right to rule they may add the power to be a Pharaoh!"

I was interrupted by a noise below, as of some one opening the door of the secret chamber. All the deadly gas lurked in that room now, and it was certain death to whoever opened and entered! Yet if an alarm had been raised it was there they would immediately go for the fire-arms. I listened and heard faintly a voice of command, like that of Zaphnath, saying, "Haste, get me the thunderers!" Then, as the door below creaked open, I heard it louder: "The thunderers!" Next I heard many men in violent fits of coughing; I heard some groan and fall; but who or how many died by the purplish poison intended for me, I never knew.

It was but a moment later that hurried footsteps in the banquet-hall were heard approaching the veiled doorway. I took the revolver from Hotep, and motioned him inside the projectile. How cautiously they opened the door I could not see, for it was behind the great curtain. Presently, however, the captain who had bound me and bade me wait, drew aside the curtain, and the Pharaoh stood in the door, and behind him were a crowd of soldiers armed with
cross-bows. In all the number I did not see the face of Zaphnath. They beheld me alone, and had no reason to suspect the presence of the others inside the projectile.

"Guard both the doors!" the captain commanded, and a detachment of soldiers barred the other door, as if thus to prevent me from escaping with the projectile; for of course they had not seen it rise through the floor.

"Seize and bind yon traitor!" cried the Pharaoh; "and he who hesitates shall be flayed!"

"And he who attempts it, shall die ere his first step be taken!" I replied, levelling the revolver. The captain started for me and I shot him down.

"If a man of you moves till I have entered this thing, I will kill the Pharaoh, as I have killed this dog! Ye serve him best who stand still as ye are!" So saying, I covered the trembling monarch with the revolver, and with my other hand I opened the rear port-hole; then stooping, I sprang inside with a quick motion. When the Pharaoh had recovered from his fright, I heard him cry out,--

"Cast that black thing, and the traitor inside it, into yon poisonous hole again!"

The soldiers did not fear to act this time, and the whole company seized the projectile and carried it toward the breach in the floor. As they lifted it on end to thrust into the hole, I called out to the doctor, who turned in two batteries, and gently we lifted out of their dumb hands and rose steadily till we touched the roof. There the vaulted stonework stopped us, and an exultant shout went up from below. Suddenly a score of arrows twanged against my window, but the doctor turned in two more batteries and then gradually we lifted the key of the great stone arch, broke through the roof, and the whole universe was an open sea before us!

Crouching by me at the port-hole, Hotep watched the roof collapse and tumble in. "For thy sake," I said to him, "I hope a falling stone may have crushed him!"

* * * * *

Thus ended our other-world life. In a time of activity it would never have occurred to me to write down these events. It was to relieve the uneventful quiet of our trip back to Earth that I undertook to set down all our Martian experiences in their proper order. No doubt it was the changeless monotony of that return journey which made the record appear to me novel, unusual, and at times exciting. But now, six little months again on Earth have made the more than three Martian years (equalling six years of Earth) seem slow, tame, and profitless. If they were pregnant with adventure, they lacked the real experiences of life which have been crowded into the half-year since our return.

The very day I reached my old home I found another wheat corner more wide-spread, if less complete and impregnable, and I set to work to break it down. Thus the maelström of modern commercial life dragged me into its dizzy whirl before I slept the first night on Earth, and I am already surfeited with it. I seem to take the Earthly life in too large and rapid doses. Into the half-year she has put a flattering success and a dismaying failure. She has given me a month of her sweetest experiences and another of her bitterest disappointments. As if she knew I would not remain long at her feast, she has served to me in quick succession a measure of renown, a taste of fortune, the rapture of wooing, the bliss of marriage, and the rare delight of loving a soul created to love me. Then one little drop from the cup of Death embittered the whole feast and turned me against it all.

In the rush and turmoil of it all I should never have thought of my crudely written narrative again had not my cousin Ruth, who never tired of the story, fished it out and sent it to a literary friend in Boston. It was probably the instant success in the scientific world of Dr. Anderwelt’s scholarly books on Mars and His Life, and the new direction given to modern thought by his Theory of Parallel Planetary Life, which led my literary sponsor to think the world would be interested in a plain, unscientific narrative of our trip Marsward and our doings there. In agreeing to look it over and cause it to be a "good delivery" in the literary world, he exacted a promise from me to make my recent Earthly experiences and our adventures on Venus join in producing another story. For before the eyes of the first reader have reached these words, Dr. Anderwelt and I will have departed sunwards, on the visit to our brilliant sister planet, where, according to his theory, life will have run through some 31,000 years more than Earth toward the perfect existence. By the first return of the projectile I have promised to send back a thorough account of the evolution of life and the advancement of civilization on Venus, so far as Earthly eyes and wits can see and know it.
Bryce Carter could afford a smug smile. For hadn't he risen gloriously from Thieves Row to director of famed U.T.? Was not Earth, Moon, and all the Belt, at this very moment awaiting his command for the grand coup? And wasn't his cousin-from-Montehedo a star-sent help?

"What do I do for a living?" repeated the slim dark-skinned young man in the next seat of the Earth-Moon liner. "I'm a witch doctor," he answered with complete sincerity.

"What do you do? I mean, what do they hire you for?" asked Donahue with understandable confusion and a touch of nervousness.

[Illustration: Bracing themselves, Bryce and Pierce gave the body a combined strong shove toward Earth. Two gone.]

"I'm registered as a psychotherapist," said the dark-skinned young man. He looked too young to be practicing a profession, barely nineteen, but that could be merely a sign of talent, Donahue reflected. The new teaching and testing methods graduated them young.

"I know I am a witch doctor because my grandfather and his father and his father's father were witch doctors and I learned a special technique from my uncles who are registered therapists with medical degrees like mine. But the technique is not the one you find in the books, it is ... unusual. They don't say where they learned it but it's not hard to guess." The dark youth shrugged cheerfully. "So--I'm a witch doctor."

"That's an interesting thought," said Donahue. It would be a long three day trip to the Moon and he had expected to be bored, but this conversation was not boring. "What do you do?" he again asked. "Specifically."

Donahue had rugged features, a dark tan and attractively sun-bleached hair worn a little too long. He exuded a sort of rough charm which branded him one of the class of politicians, and he knew how to draw people out, so now he settled himself more comfortably for an extended spell of listening. "Tell me more and join me in a drink." He signalled the hostess and continued with the right mixture of admiring interest and condescending scepticism. "You don't chant spells and hire ghosts, do you?"

"Not exactly." The dark innocent looking young face smiled with a cheerful flash of white teeth. "I'll tell you what I did to a man, a man named Bryce Carter."

* * * * *

A group of men sat in a skyscraper at Cape Hatteras, with their table running parallel to a huge floor-to-ceiling window that overlooked the clouded sky and gray waves of the Atlantic. They were the respected directors of Union Transport, and, like most men of high position, they had a keen sense of self-preservation and a knowledge of ways and means that included little in the way of scruples.

The chairman rapped lightly. "Gentlemen, your attention please. I have an announcement to make."

The buzz of talk at the long table stopped and the fourteen men turned their faces. The meeting had been called a full week early, and they expected some emergency as an explanation. "A disturbing announcement, I am afraid. Someone is using this corporation for illegal purposes." The chairman's voice was mild and apologetic.

Bryce Carter, second from the opposite end, was brought to a shock of tense balanced alertness. How much did he know? He gave no sign of emotion, but reached for a cigarette to cover any change in his breathing, fumbling perhaps more than usual.

The men at the long table waited, showing a variety of bored expressions that never had any connection with their true reactions. The chairman was a small, inconspicuous, sandy-haired man whose ability they respected so deeply that they had elected him the chairman to have him where they could watch him. They knew he was not one to mention trifles, and there was a moment of silence. "All right, John," said one, letting out his held breath and leaning back, "I'll bite. What kind of illegal purposes?"

"I don't know much," the small man apologized, "Only that the crime rate has risen forty percent in the average of the cities served by UT, and in Callastro City, Callastro, and Panama City, where we just put in a spaceport, it more than doubled."

"Funny coincidence," someone grunted.

"Very funny," said another. "If the police notice it, and the public hears of it--"

There was no man there who would willingly have parted with his place at that table, no one who was unaware that in fighting his way to a place at that table he had seized some part of control of the destiny of the solar system.
UT—Union Transport, spread the meshes of its transportation service through almost every city of Earth and the
hamlets and roads and bus and railroad and airlines between—and even to the few far ports where mankind had
found a toehold in space. But its existence was precariously balanced on public trust.

UT's unity from city to city and country to country, its spreading growth had saved the public much discomfort
and expense of overlapping costs and transfers and confusion, and so the public, on the advice of economists,
grudgingly allowed UT to grow ever bigger. There was a conservative movement to put all such outsize businesses
under government ownership as had been the trend in the last generation but the economy was mushrooming too fast
for the necessary neatness, and the public rightly would not trust politicos in any operation too confusing for them to
be watched, and preferred to leave such businesses to private operation, accepting the danger for the profit of
efficient and penurious operation, dividends and falling costs.

But all these advantages were barely enough to buy UT's life from year to year. It had grown too big.
Its directors held power to make or break any city and the prosperity of its inhabitants by mere small shifts in
shipping fees, a decision to put in a line, or a terminal, or a crossroad. The power was indirectly recognized in the
honors and higher offices, the free entertainment and lavish privileges available to them from any chamber of
commerce and any political representative, lobbying discreetly for a slight bias of choice that would place an airport
or spaceport in their district rather than another.

Perhaps some of the directors used their position for personal pleasure and advantage, but power used for the
sake of controlling the direction of growth of races and nations, power for its own sake was the game which was
played at that table, its members playing the game of control against each other and the world for high stakes of
greater control, nursing behind their untelling faces who knows what megalomaniac dreams of dominion.

Yet they used their control discreetly, serving the public welfare and keeping the public good-will. When it was
possible.

As always Bryce Carter sat relaxed, lazily smiling, his expression not changing to his thoughts.
"Who knows of this besides us?" someone asked.
The chairman answered mildly. "It was a company statistician in the publicity department who noticed it. He
was looking for favorable correlations, I believe." His pale blue eyes ranged across their faces, touching Bryce
Carter's face expressionlessly in passing. "I requested that he tell no one else until I had investigated." He added
apologetically, "Commitments for drug addiction correlate too."
That was worse news. "Narcotics investigators are no fools," someone said thoughtfully.

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Neiswanger, a thin orderly man near the head of the table, pressed his fingertips together, frowning slightly. "I
take it then that our corporation is being used as a criminal means of large scale smuggling of drugs, transport of
criminals on false identification and transport for resale of the goods resulting from their thefts. Is that correct?"
Neiswanger always liked to have things neatly listed.
"I think so," said the chairman.
"And you would say that the organization responsible is centered in this corporation?"
"It would seem likely, yes."
The members of the board stirred uneasily, seeing a blast of sensational headlines, investigations which would
spread to their private lives, themselves giving repetitive testimony to inquisitive politicians in a glare of television
lights while the Federated Nations anti-cartel commission vivisected the UT giant into puny, separate squabbling
midgets.

It was not an appealing prospect.
"We'll have to stop it, of course," said a lean, blond man whose name was Stout. He could be relied on to say
the obvious and keep a discussion driving to the point. "I understand we have a good detective agency. If we put
them on this with payment for speed and silence--"
"And when we know who is responsible," asked Neiswanger, "Then what do we do?"
There was silence as they came to another full stop in thinking. Turning culprits over to the police was out of
the question, an admission that such crimes had happened, and could happen again. Firing the few detected could
not impress the undetected and unfired ones enough to discourage them from their profitable criminality.
"Hire some killings," said the round faced Mr. Beldman, with simplicity.
The chairman laughed. "You are joking of course, Mr. Beldman."
"Of course," said Mr. Beldman, and laughed barkingly, being well aware of the permanent film record taken of
all meetings. But he was not joking. Nobody there was joking.
The detective agency and the hired killers would be arranged for.
Bryce Carter leaned back with the slight cynical smile on his lean face that was his habitual expression.
"Suppose the top man is high in the company?" he suggested softly. "What then?" He did not need to point out that
the disappearance of such a man would be enough to start a police and stock-holders investigation of the company in itself. The implication was clear. Such a man could not be touched.

"A hypnotist," suggested Raal. "Someone to make our top man back track and clean up his own mess."
"Illegal, dangerous and difficult, Mr. Raal," Irving said sourly. "There are extremely severe penalties against any complicity in the unsupervised use of hypnotism or hypnotic drugs, and their use against the will of the subject is a major crime."

"A circulating company psychologist would be legal," suggested the lean blond man whose name was Stout.
"We have over seventy-five of those on the company payrolls already and I fail to see what use--"
"One of the special high priced boys who iron out kinks in groups by joining them and working with them for a while, like that Conference Manager we had with us last year. Every member of the group that hires one has to sign an application for treatment, and a legal release. They are very quiet and don't broadcast what they do or who they talked with, but they have a good record of results. The groups who hire them report better work and easier work. We could use one as a trouble shooter."

"Are they a special organization?" someone asked. "I think I've heard of them."
"Yes, some sort of a union. I can't remember the name."
"What would you expect them to do for us?" asked Irving.
"I hear--" Stout said vaguely, his eyes wandering from face to face, "that they have a special tough technique for hard case trouble makers." For those who knew him, the vague look was a veil over some thought which pleased him. Presumably he was thinking the thing which had occurred to them all.

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The culprit might be a member of the Board. There was a sudden cheerful interest visible among them as they wondered who was quarry for the "tough treatment."

"I've heard of that," said Wan Lun, remembering. "It has been said that they not only do not inform others of the fact of treatment but frequently do not inform the man under treatment but seem to be only a new friend until--poof." He smiled. "I think the guild name is Manoba. The Manoba Group."

Stout said, "They'll probably charge enough for the skill."

Wan said, smiling, "I also heard some idle rumor that in a few such cases discord within a group was alleviated by sudden suicide. Presumably a psychologist can grow impatient and push a certain button in the mind--"

"Sounds like a good idea," Beldman said. "Do you think if we offered this Manoba the right kind of money--"
"You don't mean that, Mister Beldman," cut in the chairman reprovingly. "You're joking again."
"We're all great jokers," said Beldman, and laughed.

Everyone laughed.

"I move we vote a sum for the hiring of a Manoba psychologist."
"Seconded, how about five hundred thousand?"
"I don't know their fees," the chairman objected cautiously.

"You can turn back any surplus. We stand to lose more than that by several orders of magnitude. Spend it at your discretion."

"Make it seven hundred thousand. Give him a little more room."
"I so move."
"Seconded.
"Carry it to a vote."

They slipped their hands under the table edge before their respective seats, and each man ran his fingers over two buttons concealed there, before him, chose between the yes and the no button and pushed one, the choice of his fingers unseen by the others.

Two numbers lit up on the small divided panel before the chairman. He looked at them with his mild face expressionless. "Rejected by one vote."

Unanimity was the law on Board decisions, which by a natural law was probably the reason why no love was lost among them, but this time irritation was curbed by interest. They sat watching each other's expressions with glances which seemed casual. Whose was the one vote?

"I move that the vote be repeated and made open," someone said.

"Seconded."

"All in favor of the appropriation for the psychologist raise your left hand," the chairman requested.

They complied and looked at each other. All hands were up.

"Carried on the second vote," the chairman said without apparent interest. "For my own curiosity will the gentleman who voted nay on the secret vote the first time speak up and explain his objections, and why he changed his mind on the open vote?"
There was silence a moment--Neiswanger looking at his neat fingernails, Bryce Carter smoking, and smiling slightly as he always smiled, Stout leaning back casually scanning his eyes from face to face. Beldman lit a cigar and released a cloud of blue smoke with a contented sigh. No one spoke.

"Gentlemen," said the chairman. "It is entirely likely that the culprit is among us."

"Never mind the melodrama, John." Irving tapped the table impatiently. "We've dealt with that. Let's get on to the next business."

II

In the exit lounge at floor five Bryce Carter stopped a moment and glanced at himself in the mirror. Thick neck, thick body--a physique so evenly and heavily muscled that it looked fat until he moved. Atop the thick body a lean face that he didn't like stared back at him. It was darkly tanned, with underlying freckles that were almost black. Years had passed since he had worked in space, but the space-tan remained indelible. It was not a bland or pretty face.

At the dinner, deep in discussion with Mr. Wan, he had been surprised to find himself smiling at intervals, irrepressibly. He hoped it had looked cordial, and not too much like a cat enjoying the company of mice.

They had no defense against him. The drugs organization could never be traced to him. The connection was too well concealed. Even the organization knew nothing about him.

The only evidence which could make the connection was in his own mind. The only witness against him was himself. He cast his mind back over the meeting and dinner but there had been no slips past the first shock of the chairman's announcement, and that had been unobserved by anyone. The psychologist they had hired might perhaps get a betraying flicker of expression from him in an interview, many well-trained observers of human reactions could read expressions that keenly, but the interviewing of all of the Board by the psychologist was not likely. The Directors of the Board were even now climbing into trains and strato planes to scatter back to the far points of the earth. It would take many days for an investigating psychologist to follow to interview each one. He and Irving would be last on the list, for he went to Moonbase City, and Irving to Luna City.

He had weeks.

He smiled, fastening bands in his cuffs that folded them tightly on his wrists, zipping up his suitcoat and slipping on gloves. He looked at himself again. Where he had been wearing a conservative dark silk business suit with a short cape, he now seemed to be wearing a tailored ski-suit with an odd cowl, or a pressure suit without boots or helmet, which was what it was. Carrying the zipper up further would have turned the cape to an airtight helmet bubble.

Employees and executives passing in and out of the UT building gave the clothes an approving and interested glance as they passed. The justification by utility was obvious. It had cost money to have a pressure suit designed light and flexible enough for comfortable wear, but long ago he had grown irked by the repetitious business of climbing in and out of clothes every time one stepped through a space lock, while overcaps and hoods were needed stepping outside of any temperate zone Earth building in winter.

A pressure suit was completely independent of weather and regulated its own internal heat. Since the suit had been designed the manufacturer had begun to receive an increasing number of orders for duplicates, and was now being put into mass production. Probably in these five minutes he had just made many more sales for the manufacturer.

He was setting a style, he thought in pleased surprise, stepping out of the building. The salt wind hit him with a blast of cold, and the automatic thermostatic wiring in the suit countered with a wave of warmth as he leaned into the wind and started to walk. The connection between the Union Hotel and the building he had just left was an arched sidewalk that curved between them, five stories above the sand and surf.

The hotel was an impressively towering building against the ragged sky, and as he walked a gleam broke through from the hidden sunset and spotlighted it and the low scudding clouds in a sudden glowing red. He stopped and leaned against the balustrade to watch the red gleams reflecting from the bay. Red and purple clouds fled by low overhead, their colors changing as they moved. This was something a man couldn't see in space or on the moon.

But after a moment he couldn't fully enjoy it, because he was being watched. The feeling was disturbing.

Damn rubbernecks, he thought, and turned irritably, half hoping that at least it would be an acquaintance or some pretty girls.

But there was no one watching him.

A few pedestrians walked by hurriedly because it was growing dark and the view that they had come to enjoy was fading. The wind wrapped their enveloping capes around them and made them all look abnormally tall and columnar.

It was darker. The sidewalk lights abruptly flicked on in a flood of amber light that thickened the twilight beyond their circle to an opaque purple curtain of darkness.
He noticed a pedestrian walking slowly towards him from the direction he had come. The figure approached more slowly than seemed natural, with his head bowed and his hands in his pockets as though lost in thought.

A trailer from the detective agency? It was too soon for that. If it were arranged that every member of the Board be trailed, still it could not have been arranged and begun so soon.

Besides, there was something more deadly than that in the walking man's indifference.

A killer arranged by Beldman? It would be natural for Beldman or Stout to take a chance and fight back the direct way. But there was no evidence. How could either of them have decided who to blame or who to fight?

The few huge buildings that stood dark against the night sky were being brightened now by lights going on in hundreds of windows. In long slender spans between them stretched the aerial walks and the necklaces of amber lights that outlined them. The wind blew colder across the walks and the view of sea and sky that had been visible from them now was blotted out by night. The walkers were going in. There was small chance of sheltering himself in a crowd, or even of keeping only one or two walkers between himself and the one who followed him.

At the first sight of the approaching figure he had instinctively leaned back against the concrete railing and taken his gun from its pocket holster, holding it lightly in his gloved hand.

An aged couple and a vigorous middle-aged woman hurrying in the opposite direction glanced at him without interest or alarm. His pose was not menacing, and anyway most men with money enough to travel carried hand arms.

This was an indirect effect of a Federated Nations ruling that only hand arms of a regulated deadliness be manufactured as the armament of nations. The ruling had been carefully considered for other secondary effects, for any nation growing over-centralized and militaristic was likely to arm its citizens universally for greater military power by numbers, and then suffer the natural consequences of having armed their public opinion.

An armed man need not vote to be counted, and once having learned that lesson, the feeling that an armed man carried his bill of rights in his pocket made this the first clause of the written and unwritten constitutions of many suddenly democratic nations. "The right of the yeomanry to carry arms shall not be abridged." They kept their guns.

And with weapons instantly available to hot tempers, dueling came back into custom in most places.

All this had little effect on the large calm manufacturing countries who had run the UN and now ran the FN, but it made easy their decision that since, in space, policing is almost impossible, the citizens who venture there must be armed to protect themselves. Thus, in spite of the continued outcry of a minority of Christian moralists, a holster pocket was now built into all space suits.

Bryce had grown up in a famine country, an almost unpoliced area, and weapons had been as familiar to his hands as fingers since he had passed twelve. And when, as a steel-worker, he had been one of the first settlers in the foundry towns of the Asteroid Belt, he had found life no gentler there. But it was all right as far as he was concerned. He had heard of safer and duller ways to live but had never wanted them. Life as a moonbased transport manager had been a short interval of nonviolence, five years of startling calm which he had not yet grown accustomed to.

The gun fitted into his hand as comfortably as his thumb, or as the handshake of an old and trusted friend, but it was useless here. Reluctantly he slipped it back into his pocket and began walking again. A director of UT couldn't shoot people on intuition.

He had barely stopped for a count of ten, and there was still distance between them when he had turned, but the follower could be walking faster now, narrowing the distance between them.

If he had waited and fired, an inspection of the man's pockets could have confirmed his judgment by the finding of an assassin's illegal needle gun. That alone might be enough to satisfy the police if he were still merely a spaceworker, but a Director of UT couldn't live that casually. It would be difficult to explain his certainty to the police, and still more difficult to explain to the newspapers. He could not afford that sort of publicity.

Bryce let out a soft curse and lengthened his stride.

He had to wait for proof of the follower's intentions. And the only proof would be to be attacked, and the first proof of that, since needle guns are soundless and inconspicuous, would probably be a curare-loaded needle in his back.

After that the follower could inconspicuously drop his weapon over the balustrade, its self-destroying mechanism set to melt it before it reached the sands far below.

However since the follower certainly would not openly run after him, the most logical thing to do, Bryce decided, was to run to the hotel as if he were in a hurry. The idea irritated him.

He walked on, slowing perversely. It was irrational to walk, and he knew it, but he walked, and the knowledge that it was irrational irritated him further. The skin between his shoulder blades itched meditatively in its own
imaginative anticipation of an entering needle. What good did it do him to be proud of his brains when he put himself in a spot where he walked around like a target?

He controlled a rising rage but he walked.

The sky was totally dark now and there were only two or three couples ahead on the slender concrete span and one old couple he had just passed, so that they were between himself and the follower. But that was no adequate screen.

Far above soared the sky taxis. And now he wanted a taxi. He was approaching a place where there was a hack stand. Just ahead, at the midpoint, where the upward curve of the sidewalk leveled off and began to curve down, a narrow catwalk jutted into space with a small landing platform at its end. "TAXI" a luminescent arrow glowed at him directly as he came abreast of it.

He walked rapidly out along the railed catwalk, making a perfect target he knew, silhouetted against the glow. He cursed under his breath, reaching the end of it. Here he made an even more perfect target, with the single bright light that poured down brilliance on the bench and landing platform spotlighting him against the darkness of the night. The bench was thin iron grillwork. It offered no cover.

He needed cover. He considered the white concrete pillar of the lamp, put his hand on the railing and jumped up to sit on the railing casually, a one hundred fifty foot fall behind him and the width of the lamp post between him and the follower, who now was an unmoving figure leaning against the railing of the sidewalk near where the catwalk began.

The sight of the insolently lounging figure did nothing to soothe his irritation. This escape was not the way he wanted to deal with a threat. There was an oddity in the man's waiting. The range was poor, and he probably was not firing, although he would look if he were not in any case, but if he were not going to take this chance for his murder attempt, why did he openly exhibit himself, arousing suspicion and cutting off future chances? An innocent stroller or even a mere trailer from the detective agency would have strolled on.

Above came the nearing drone of a taxi which had spotted him in the bright pool of light at the hack stand.

There was something in the careless confidence of the follower's open interest in him that raised his neck hair as no direct threat could have, and filled the rumble of the night-hidden surf with obscure menace. The man acted as if his job was over, clinched.

Bryce reached the answer as the taxi floated down on hissing roter blades and settled to the platform. Sliding down from the railing he walked toward it, stiff-legged. The light was out inside it, and the cabby did not climb out or attempt to open the door for him. Bryce turned his head and looked back as if for a last glance at the watching figure, grasping the door handle with his right hand as if fumbling blindly. He was left handed. When the door was open a crack, it stopped opening, and those inside saw the muzzle of a magnamatic in his left hand looking through the crack at them.

"It's easier to catch wolves if you're disguised as a rabbit, Pop Yak had told him once. He must have looked a complete sucker, starting to climb into a dark cab with his head turned backward!"

"Don't move," Bryce said, some of his anger reaching his voice in a biting rasp. Inside, the driver was frozen with his head turned enough to see the glint of a muzzle behind his neck, and in the darkened far corner of the back seat where there should have been no one there was the pale blur of a face, and a hand holding something. Bryce knew that there was no way a shot could reach him except through the shielding steel door or the shatterproof window, and a man would hesitate before shooting through glass when he was looking down the throat of Bryce's gun. Bryce waited for him to think it over.

The hand of the man in the back seat came into focus as his eyes adjusted to the dark inside, and he could see that it was holding a gun. The gun was not pointing at anything in particular. It was frozen in mid-motion. The man had a half-smile frozen on his face, probably in the way he had been smiling just before Bryce spoke.

"Open your hand. Drop it." The glint of the gun disappeared, and there was a faint thud from the floor. Bryce opened the door and slid into the rear seat, watchful for motion, ready to shoot. "Face front!" They faced front like two puppets, perhaps the uncontrollable rasp in his voice was convincing. He still did not know whose men they were, or why they had been hired. It would be no use questioning them for they would not know either. He could guess who it was, a name came to mind, but there was no way of checking up. This kind of business did not fit well with the crucial balance of his plans for the next two weeks. "Be careful," he said perhaps unnecessarily, "I'm nervous. Union Hotel please."

The short ride to the hotel was made in dead silence, with the man in the opposite corner barely moving enough to blink his eyes. He was middle-aged, with the resigned sagging lines to his face of ambition disappointed, but he sat with a waiting stillness that Bryce recognized as something to watch. There was probably another gun within quick reach of that passive right hand.
The roter drifted down to a landing space on the floodlighted landing roof of the hotel and settled with a slight bump. "Don't move." The clumsy careful business of opening the door backward with his right hand and sliding out without taking his eyes from either of them was tediously slow.

Once out, he slammed the door briskly. "Take off." Not until the red and green lights had faded into the distance did he turn away, pocket his gun and walk into the wide doorway to the elevators. As he brushed past the hotel detective standing in the doorway the detective was reholstering a large size police pacifier. Apparently he had been ready to impartially stun everyone concerned at the first sign of trouble, which probably explained why those in the aircab had not attempted any retaliation. The detective gave Bryce a cold stare as he went by, probably in disapproval of guests waving weapons on hotel premises.

III

In his luxurious hotel room Bryce checked his watch. Eight o'clock. A telephone call was scheduled for some time in the half hour. He filed the question of who was behind the night's attack and picked up the phone. The dial system was in automatic contact with any city in the world. He dialed.

Somewhere in a city, a phone rang. It rang unheard, for it was locked into a safe in a tiny rented office with some unusual mechanisms attached. The ringing was stopped abruptly and a recorded voice answered, "Yeah?"

Bryce took a dial phone from the night table where it had been sitting innocently like a toy he had bought for some child. "Hi Al," he said cheerfully to the automatic mechanism at the other end. "Listen, I think I've got a new phrase for that transition theme. How's this?" He put the receiver against the back of the toy and dialed the toy dial. It responded to each letter and number with a ringing note of different pitch that played a short unmelodious tune.

The pitch notes went over the line and entered the mechanism, making the contacts within it that dialed the number he had dialed on the toy phone.

"How's that?" Bryce said cheerfully.

The recorded voice said, "Sounds good. I'll see what I can do with it." Somewhere far away and unheard another phone had begun to ring. "Want to speak to George?"

"Sure."

A phone rang in a pay booth somewhere in a great city railroad station, and someone browsing at a magazine stand or sitting on a suitcase apparently waiting for a train strolled casually to answer it. "Hello?" said a noncommittal voice, prepared to claim that he was merely a stranger answering the phone because it was ringing in public.

"Hello George, how's everything going?" Bryce asked. Those words were his trade mark, the passwords that identified him to everyone as the Voice who gave Tips. Among the monster organization which had grown from the proven reliability of those tips, the voice was known as "Hello George." Hello George's tips were always good, so they had come to be followed as blindly as tips from God, even when they were not understood. Certainty was one thing men in the fencing and drug smuggling business most sorely lacked.

They communicated only by phone. They transmitted their wares by leaving them in public lockers and mailing the key. They never saw each other's faces or heard each other's names, but even the use of a key could be a trap that would bring a circle of narcotics agents of INC around the unfortunate who attempted to open the locker.

Far away over the bulge of the Earth between, a man sat in a phone booth waiting for his tip. "Pretty well. No complaints. How's with you, any news?"

"I think you'd better cut connections with Union Transport. They're getting pretty sloppy. I think they might spill something."

"Wadja say?" asked the man at the other end cautiously, "I didn't get you."

"Better stop using UT for shipping," Bryce repeated, wording his sentence carefully. "They aren't careful enough anymore. You don't want them to break an inc case wide open, do you?" INC was the International Narcotics Control agency of the F. N. But the conversation would have sounded like an innocent discussion of shipping difficulties to any chance listener on the telephone lines.

The flat tones were plaintive and aggrieved. "But we're expecting a load of stuff Friday. Our buyers are expecting it." Stuff was drug, and expecting was a mild word for the need of drug addicts! "And we've got a lotta loads of miscellaneous items to go out." The contact was a small man in the organization but he evidently knew just how "hot" fenced goods could be. "That can't wait!"

He had planned this. "Maybe they are all right for shipments this week. I'll chew them out to be careful, check up and call back Friday. Meanwhile break with them."

"Tell them a few things from me, the--" the distant voice added a surprising string of derogatory adjectives. "Friday when?"

"Friday about--about six." The double "about" confirmed the signal for a telephone appointment that was general for all contact numbers.
“Friday about six, Okay.” There was a faint click that meant he had hung up and the phone in the safe was open for more dialings on his toy dial.

Bryce hung up, leaned back on his bed and pushed a button that turned on the radio to a semiclassical program. Soothing music came into the room and slow waves of colored light moved across the ceiling. He tuned to a book player, and chose a heavy economics study from the current seller list of titles which appeared on the ceiling. The daily moon ship was scheduled to blast off at five thirty, its optimum at this week's position of the Moon. By this time tomorrow night, he and all the other members of the Board would be out of reach of any easy observation or analysis by their hired psychological mind-hunter.

With a slight chilling of the skin he remembered the cop-psychos the gangs had warned him about in his scrambling and desperate childhood, and what they were supposed to do to you when they caught you in a third offense.

He had been born into an ex-European quarter in a Chinese city, a descendant of something prideful and forgotten called an Empire Builder, and grew with the mixed gangs of children of all colors who roamed the back streets at night, looting and stealing and breaking. Population control was almost impossible in a land where the only social security against starvation in old age was sons, and social security was impossible in a land so corrupted by the desperation of famines, so little able to spare the necessary taxes. The nation was too huge to be fed from outside, and so had been left by the FN to stew in its own misery until its people solved their basic problem.

So, in an enlightened clean and wealthy world, Bryce Carter had grown up in a slum whose swarming viciousness was a matter of take, steal, kill, climb or die. Perhaps under those special circumstances police penal compulsion had to be brutally strong, stronger than the drive for life itself, as brutal as the lurid tales he had heard. Perhaps in other countries the methods were different, a hypno-converted man not a horror to his friends, but he had had no time to study and investigate if it were so, and the horror and hatred remained.

But there was no need to think about the psycho-hunter the Board had put on him for by the time the hunter could reach him UT would have fallen as a legal entity, its corruption would be completely public, and the psychologist would be called off before discovering anything. Bryce thought of the slight nervousness he had let show at the first words of the chairman's announcement. The only witness against him was himself. His control wasn't perfect. No one's was. But he was safe.

He concentrated on the opening pages of the Basic Principles of Economies.

* * * * *

In the darkened UT building which could be seen from his window a few lights still burned where the night shift dealt with emergencies.

In a small projection room on the fifty-fifth floor a man sat and looked at a film of the UT Board meeting of that day. He played only a certain small twenty minute interval, listening closely to the voices--"Gentlemen, your attention please--" Watching the faces--"Do the police know of this?" ... "Do you think if we offered this Manoba the right kind of money...." "Will the gentleman who voted nay on the secret vote the first time speak up and explain...." "It is entirely likely that the conspirator is among us." On the screen showed the apparently bored faces and relaxed poses of men accustomed to the power game, habitually masking their feelings from each other, shifting their positions slightly sometimes, some smoking. "We've dealt with that, let's get on to the next business."

The watcher stopped the film and silently reset it. It began again with the chairman on the screen rapping the table lightly. "Gentlemen, your attention...."

In the darkened projection room the chairman sat to one side smoking and thinking while the psychologist played the film through for the fourth time.

The chairman was wondering just how seriously the watcher was taking Mr. Beldman's proposals about what he should do to the culprit, and whether he would raise his fee.

The telephone rang.

* * * * *

"Four thirty, Mr. Carter," said the voice of the night clerk in the receiver.

It was time to catch the five thirty Moon ship. He splashed cold water on his face and the back of his neck until he was awake, took a hot shower, dressed rapidly, and gave up his key at the desk at 4:45.

"A letter for you, Mister Carter," she smiled, handing it to him. From the wall speakers a mild but penetrating voice began repeating, "Bus line for spaceport leaving in twelve minutes. All passengers for Luna City, Moon Base, Asteroid Belt and points out, please go to the landing deck. Bus line for spaceport leaving in twelve minutes--"

He opened the letter when he had settled down in a comfortable morris chair in the airbus. The letterhead said MANOBA Group Psychotherapeutic Research and Conference Management.

One sheet of it was a half page contract in fine print, apparently a standard form with the name of Union Transport Corporation typed in the appropriate blanks. Above it was printed in clear English and large type for the
benefit of those readers unaccustomed to contracts. "WARNING. After you have signed this release you have no legal recourse or claim as an individual against any physical or mental injury or inconvenience you may claim to have sustained as a result of the activities of the contracted psychotherapist(s) in the course of group therapy. Your group is the responsible agent. It must make all claims and complaints as a unit, and may withdraw from the contract as a unit. Those who withdraw from the group withdraw from participation in the contract."

Bryce smiled. Or in other words, if you didn't like it, you could quit your job and get out!

The other sheet he glanced at casually. It seemed to be an explanatory page to the effect that the Manoba's work was strictly confidential and they were under no obligation to explain what they had done or were doing or give their identities to any member of the corporation who had hired them. There was nothing resembling a sales talk about results, and the only thing approaching it was a stiff last sentence referring anyone who was curious about the results of such treatment to the National Certified Analytical Statistics of Professional Standing in such and such bulletins of such and such years.

He signed the contract, smiling, and mailed it at a handy postal and telegraph window at the spaceport before boarding the spaceship.

* * * * *

The phone was ringing.

Bryce rolled over sleepily and picked it up. "Eight A.M. L.S. S.S. Sir," said the soft voice of the desk clerk.

"Okay," he grunted, glancing at his watch and hanging up. It was two minutes after eight, but he didn't check her up on it. If he placed the voice rightly, it belonged to an exceptionally pretty brunette. He had not tried to date her yet, but she looked accessible, and Mona was becoming tiresome.

He turned the dial in the headboard that reversed the polarization of the window and rose reluctantly, stretching as sunlight flooded the room. It was daylight on Moonbase City. It had been daylight for a week, and it would be daylight still for another week.

Through the softening filter of the airtight glass the view of distant crater walls and the airsealed towers of Moonbase City shone in etched magnificence, but he gave it only a glance. It was always the same. There was no weather on the Moon and no variety of view.

"Good morning," he smiled, passing a bellboy in the luxurious, deep colored halls.

"Good morning, Mister Carter," the boy answered rapidly with an eager nervous smile.

Bryce had caught the management up sharply on several small lapses, and they all knew him now. He strode on, pleased. Efficiency.... No one gave him a second glance or noticed him in the tube trains, but he was not irritated by it. Someday they would. Someday the whole world would know his face as well as they knew their own. He promised that to them silently and then settled down to concentrate on some constructive planning before reaching the office. He was not going to waste his time gawking at ads or listening to the music like the others.

"Mister Carter?" said a hesitant voice behind him as he was reaching for the handle of the office doors.

"What is it?" he asked crisply, turning, but as he saw who had spoken he knew exactly what it would be.

"Pardon me Mister Carter, but--" It was a spaceman, a skinny wreck of a man in clothes that hung on him. A junky, a drug addict. Bryce knew the signs. He had spent all his money and gone without food for his drug, and now he had remembered from Belt talk that Bryce Carter was a soft touch for a loan. "Never mind," Bryce snarled, reaching for the door again.

He assisted the smuggling of the stuff but that did not mean that he had to admire the fools who took it. The man was muttering something about a loan when the door shut and cut off his words. The loan would be spent on more junk. If he had wanted food he could have signed into a state hospital to take the Cure, and be imprisoned and fed until the hunger for his drug had passed and released him. The Cure was a brief hell, but it was fair payment for having had his fun, and if the addict had any guts he would face it. Any time he was ready to pay the price of exit he could go back to being a man.

Bryce strode through the offices irritably. It did not matter if Earthlings chose to waste their time in artificial ecstatic, but it was different to see a good Belt spaceman let himself go.

The receptionist looked up with fright in her eyes as he passed and gave him a special good-morning, with a smile that was tremulous and very eager to please. He still had her in the stage of new employment where she was kept afraid of losing her new job with a bad reference. It was best to put them all over the hurdles at first.

He gave her a condescending smile as he went through into the inner offices. "Good morning." She was shaky enough. A few well faked cold rages against minor errors had done well. From now on she would need only smiles to give the utmost in loyalty and hard work. What had Machiavelli said? "Make them fear your wrath, and they will be grateful for your forebearance."

He did not bother to speak to Kesby when he passed his open office door. Kesby didn't need smiles or praise, he worked loyally just for the rare curt acknowledgement that he had done well. Three years of managing had made
him a good lieutenant, completely faithful. When Bryce quit Union Transport Kesby would follow him.

IV

He went into his luxurious inner office with its deep rugs and eye-relaxing colors and its comfortable wide desk with its speaker box and telephones that were like the nerve wires of power, and sat down comfortably like a king on a throne or a mule skinner in the driver's seat with ten pairs of reins in each hand. He never felt completely awake and up to his full size in the morning until he was here.

There was a good stack of letters and memos on the desk waiting for him. On top of the mail stack was a letter labeled PRIVATE in a beamed spacegram envelope. He did not recognize the name at the head of it but the return address was General Delivery, Reef Three, The Belt. It read:

Something urgent has come up. Must see you. Arrange when. Bob. Roberto Orillo, who had been his manager in the small line that UT had taken from him, now the owner of a tiny line of his own which carefully avoided competition with UT in the Belt.

"Arrange when." They could only meet in secret. What would Orillo want to discuss?

The theory he had held in the back of his mind for three days gave answer--Murder! It was Orillo who was behind the attempted attack on Earth. This meeting was another trap. Orillo wanted him dead.

Roberto Orillo had been his first helper with the shipping and delivery service Bryce had built up from the days when he had been merely an asteroid prospector with a ship overstocked with supplies and an obliging willingness to sell his surplus.

After he put his traveling stores on schedule he noticed that an increasing number of people began moving into the Belt to settle along his route without investing in the proper ship or supplies, depending on him, using his ship for a store and bus service, swelling his profits. He found that wherever he chose to extend a route and offer credit for a stake settlers would appear and a community begin to grow.

He absorbed that lesson and laid plans.

UT blocked them. Running his store ships on their regular rounds, making loans, mediating deals, taking half interests in ideas that looked profitable, selling fuel and power, subtly binding his customers to him with bonds of dependency deeper than peonage, Bryce found suddenly that UT, whose trade mark had never been seen in the Belt before, had slipped in five ships patterned precisely after his, but larger, more magnificent and expensive, and set them running on the same course as his but one day ahead. His customers told him. They were apologetic but they had bought at the ship which came earliest, enticed by the glitter and the bargain prices.

It was a killing blow, and was obviously meant to be so. The UT managers were wise in the ways of power, and with limitless money could bankrupt him.

That day Bryce saw that he could not fight UT from outside, and he saw a dream of empire greater than Alexander ever dreamed of being ripped from his hands. When a tactful and conciliating offer came from UT for a merger and an exchange of stock at double its value, he saw it was an indirect bribe for his silent submission without complaints to Spaceways or to the Anti-Cartel Commission of the FN, and he saw that the only way to compete with the gigantic corporation was to destroy it from within.

He held out for a seat on the Board of Directors. They gave it to him.

And in three years had done an efficient job of corrupting and undermining UT to the point where it was ready to fall. UT had a week more to live in respected public service before an outraged public tore it apart.

Bryce had left Orillo in the Belt to form a small delivery company servicing thinly settled outlying points where the profits were too small to disturb UT. It would be this company that would take over and buy out the UT equipment when Spaceways chopped up the monster corporation, and it was planned that Orillo offer Bryce full partnership when this event took place.

But perhaps Orillo objected to sharing his reign with a partner. And perhaps Orillo had always objected to the fact that Bryce was the only one who knew Orillo was a fugitive from justice. Bryce had never quite been able to tell what went behind the handsome blond face and impassive blue eyes of his assistant.

Bryce had taken him in hand and given him a job after Orillo fled from a murder charge in South Africa. And Bryce had arranged the operations that gave Orillo a new face, new fingerprints and an unworried future. Only Bryce could now give the word to the police which could bring the examination that would show Orillo's retina tallied with that of a wanted man.

But if murder had always lain behind those impassive pale blue eyes, why had there been no attempts before? The answer to that was easy. Up to this time Bryce's activities had been profitable to Orillo. He had seen where Bryce's plans were leading and wanted them to succeed, so that he might step into Bryce's shoes and reap the results.

In three more months Bryce's death would be the death of a partner, and bring the unwanted spotlight of police investigation on Orillo himself, but now, at this point, the disappearance of Bryce Carter would bring police inquiry and suspicion only to the already shaky and undermined fabric of UT.
Bryce counted the profit and loss of his death to the man he had helped, and smiled ruefully. Yet the request for the meeting might be genuine and important. He had to take a chance on it and meet his ex-assistant and future partner somewhere far away from witnesses, recognition—or protection.

Taking a memo pad he printed, I'll meet you Friday; 3:PM LM, and wrote in the coordinates of a position in space not very far out from Earth, indicated the radar blink signals for its buoy and clipped the memo sheet to the envelope with its false name and return address. Ringing for his secretary, he handed it to her.

"See that that gets beamed back immediately. Friend of mine seems to be in some sort of a jam."

That was that. He turned to his work. After an hour or so the intercom box clicked and Kesby said unexpectedly, "Visitor to see you, boss. Can I send him in?"

"Yes." The receptionist had strict orders to keep out everyone except those scheduled for appointment, and to announce the names and businesses of dubious cases for his deciding, but Kesby must have overridden her decision. He sounded confident. Probably someone important.

* * * * *

Kesby opened the door with an expression half nervous, half mischievous, "Your visitor," and closed it hastily as the person stepped in.

He didn't belong in there. It was obvious to Bryce that whoever he was, he had gotten in through a lie.

The young man who stood inside his office watching him was no one connected with the business. He was too young for any position of importance. The slender frailty of childhood was still with him. Yet that impression soon faded under the impressiveness of his stance. It was more than just arrogance or poise, it was an unshakable confidence. As if no failure could be conceived.

He stood balanced to move either forward or back. His voice was again a surprise. Absolute total clarity, almost without inflection as if the words reached the mind without needing a voice. "If you're going to throw me out, this is the best time to do it." Dark brown skin of one of the dark races, jet black straight hair, a dark pair of eyes that were merry and watchful and had the impact of something dangerous. Colossal gall, Bryce characterized it to himself. He might be as good as he thinks he is. He was probably selling the Brooklyn Bridge, and he should never have gotten in, but the fact that he had somehow gotten past Kesby made him worth a few questions before being thrown out.

"What do you want?"

He came forward to the desk to answer. "I want to be your right arm." He took out a pack of cigarettes, shaking one free and offering it with courtesy. "Have one?" Bryce shook his head and the boy put one between his own lips and put the pack away. "My name is Pierce," he said, lighting the cigarette with the flame cupped in his hands as if he were used to smoking in the wind. He looked up with his eyes squinting against the smoke, shook the match out and dropped it in the desk ash tray. "Roy Pierce."

He was as much at home as an invading army. Bryce felt an impulse to laugh.

He knew this kid very well, but he couldn't place where, when, or how. "Am I supposed to know the name?"

"Do you remember Pop Yak?"

Bryce remembered Pop Yak. He gave in with a sigh, and ordered in the singsong vernacular of his childhood. "Okay. Sitselfdel, speeltalk cutchop!"

Pop Yak was a grizzled man who had watched Bryce fighting with another kid. Afterward he had taken Bryce into his store and given him ice cream and some pointers on dirty fighting. Not much had penetrated the first time but Bryce went back for advice again, learning that that was the place to be told how to do things and get what he wanted. Pop was always patient with his teaching, and always right.

He had chosen Bryce as his agent to sell minor drugs to the other kids and acted as a fence for the things he stole, and he encouraged him to study in the compulsory school and loaned him books. And Pop was the first to give him the tip on legitimate business and how to pull money on the right side of the law and make a profit they couldn't kick about. Good old Pop. "Will-pay." The boy sat down and leaned forward with a slight intent motion of a hand that was Pop's favorite gesture, one Bryce had picked up from him himself.

"He told me you're on the way up." Roy Pierce held him with a steady dark gaze. "I want a slice of that, and I want it the easy way, hitching my wagon to your rocket. You can use me. A big man is too public. You need a new hand and a new voice, one that does what you want done, and can do it in the dark or the light, without your name—a stand-in for alibis, and a contriver of accidents so they break for you without your motion. A left arm that your enemies don't recognize as yours."

He was asking to be Bryce's substitute in the things that had to be done without connection to himself, and yet had to be done by Bryce himself, because no one could be trusted with the knowledge of them.

Could he be trusted? His coming could be another trap by the unidentified enemy. It was almost too providential, almost too well timed. "References and abilities?"

Roy Pierce reached into his wallet and handed out an aptitude profile card backed by the universal test score
listings in training and skills on the other side. Bryce played with the card and studied the youth. The boy was well
dressed in a dark tailored suit of the kind Bryce favored. He looked able, clean, cool and ruthless. "Armed?" Bryce
asked.

A thing like a very thick cigar suddenly appeared in Pierce's hand. The end of it pointing at him was solid
except for a very small hole. A needle gun, obviously, loaded with two and a half inch grooved drug carrying
needles.
"Sleep or death?" Bryce asked.
"Sleep," Pierce said, putting it away. "It's licensed." Bryce wondered what made him so sure he could trust this
kid. He analyzed while he questioned. He did not bother to look at the card.
"Languages?"
"Basic coast pidgin, symbolic and glot." Basic English and Poliglot, the two universals.
"Detector proofed?" Lie detectors could be a nuisance, for they were used casually and universally without
needing the legal warrants and deference to constitutional immunities and medical supervision of hypno-
questioning.

Pierce smiled with a flash of white teeth. "First thing I ever saved my money for."

Though they spoke standard English, Bryce had placed his intonations almost to the block he grew up in.
Almost to the half block! He was as familiar as Pop Yak, as familiar as his own face in the mirror, and as
understandable. Bryce knew the inside of his mind as well as if it were a suddenly attached lobe of his own. It was
like looking back through time at himself younger and less complex.

Pop Yak had turned out another on the same model, a younger simpler duplicate of himself. Pierce was doing
exactly what he said, offering service to Bryce as he would offer him a sword, simply for the risk and delight of
being an instrument in a power game with stakes as high as he had guessed Bryce's game to be. There was no danger
of him being a plant, and no danger of him squealing under pressure: the risk of death or arrest was part of his pay.

* * * * *

"Okay," Bryce said. He gestured with his head to a corner of the room behind him. "Sit over there. You're my
cousin from Montehedo, and I'm showing you the town." He turned to his appointment pad again and read. After
Pierce had placed a chair in the indicated position, Bryce said without turning. "This week I can use a bodyguard.
Someone's hiring killers for me."

There was no sound of motion for a moment. Bryce got the idea that Pierce was more surprised than the fact
warranted. But his question was gentle and deadly. "Any idea who?"

"The line forms to the left." Bryce said dryly, "Put away that needle gun and buy something legal that kills." He
handed back a sheaf of letters, memos and graphs. "Read these and learn." For some reason he felt exhilarated.

He turned back to work, routing shipments, shifting rates to balance shifting costs, lowering rates for
preliminary incentive on lines that could run at lower cost with a heavier load, occasionally using the Bell
communication load analyzer and Kesby's formula analysis for a choice of ways of averting bottlenecks and
overload slow-down points, sometimes consulting the solar system maps on the walls.

Good service built up customer demand and dependency on good service. Producers manufacturing now on
Earth with the new materials shipped in from space could not be cut off from access to the new materials without
ruin to the manufacturers. Earth was becoming dependent on space transport.

Once the customers were given it, they grew to need it. He smiled at the thought. It was another kind of drug
traffic, and wielded the same kind of potentially infinite power over the customers.

One thing he had learned from the Economics tome he had struggled with four nights ago, a simple inexorable
principle he had recognized dimly before--that since it was difficult and more expensive to ship out goods from
Earth to space than it was to drop goods into Earth from space, eventually spacepeople might be independent of
Earth, and Earth totally dependent on space products.

The potentialities of the business game were amazing past anything Pop Yak had ever hinted, but the funny
thing was he had to find it out step by step for himself. That kind of excitement wasn't in stories. The adventures of
explorers, research men, and detectives were written into stories, but not money men. The life and growth and death
and blackmail of individuals were in the stories he had read, but not the murder of planets and cities, the control and
blackmail of whole populations, in this odd legal game with the simple rules. Funny there hadn't been lurid stories
about this in the magazines he read as a kid.

He grinned--Well, the kids would read about him. In fifteen years he'd have everyone under his thumb and
they'd smile and bow and be frightened just speaking to him.

The work vanished rapidly, the pile of accumulated letters and reports dwindling, and the phone ringing at
intervals.

Complaints he dealt with carefully, wording each letter in reply so as to give the impression that he, Bryce
Carter, was personally breaking the corporation policy to satisfy the complainer, and adding a word of praise on the intelligence and lucidity of the complaining letter. So far he had made a total of some six hundred letter-writing allies that way. Complainants were usually loquacious, interfering types who expressed more than their share of public opinion, and many would glorify him to everyone whose ear they could hold, if only to have it known that they were on pally terms with a Director of the great UT.

Many of the letters were merely friendly and chatty, telling of money troubles, successes and family affairs. To these he recorded a few friendly remarks on wire spool, telling the same joke to each, and slipped each loop of wire into an envelope to be mailed.

Pierce, studying a transport routing map, looked over and grinned at the sixth repetition of the joke, and Bryce grinned back and continued on recording a letter to an address in the Ozarks. "Got a young cousin of mine in from Montehedo, Miss Furnald, he's sitting here watching to see how a big business office operates and he's grinning at me because it looks like I want to just sit and talk at my friends all day long. I have fifty-nine business letters here to answer--honest to God--fifty-nine, I just counted them, so I guess I'll cut off and show the young squirt how I can work. Send me that photo of your sister's new baby."

He hung up the record mouthpiece. One more voter and loyal friend to pull for him when he was a public figure and the going got rough.

He grinned. It was a strange life and a strange game.

When he left the office with Pierce, someone stepped out of a corner of the corridor and clutched at his sleeve, speaking rapidly. Bryce brushed off the hand carelessly and walked on.

"A junky," he remarked to Pierce. There was a quick flash of motion behind them that sent them whirling to one side. Pierce stood aside with the small needle gun in his palm waiting to see if it would be needed, while Bryce finished the downstroke of his hand that sent the knife and the junky reeling to the rubbery corridor flooring.

"Shall I report him?" Pierce asked, making his needle gun vanish in the same smooth motion it had appeared, and indicating a phone sign.

"No. It doesn't matter," Bryce walked on thoughtfully. "Everyone wants to kill me at once."

Pierce said, "It's easy to sway a miserable man to the point of pinning all his troubles and hate on to one man, like Bryce Carter."

"I know," said Bryce. He saw that the smiling dark young man was alert, walking a little ahead of him and glancing quickly left and right as they approached corners and intersections and recessed doorways where a man could wait unseen, doing his job as a bodyguard efficiently and inconspicuously. "If it's the man I think it is," Bryce told him, falling into step again after they passed the turn into the tube trains, "he's working against a deadline. It's now or never. There won't be any more of this after next month."

Pierce answered after a glance at a passing mirror to see if they were followed, and a quick scan of the train platform. "Your usual haunts will be booby trapped. Better stay out of routine."

That night, in the spacehands end of the city, they ate the dinner that he usually had with Mona at a nightclub, or alone looking for a good pickup in an expensive cocktail lounge. It was in the shipping area around the docks, at the opposite end of the city from his usual haunts. The ceiling was low and the glasses shivered and danced with the constant muted thunder of jets that shuddered through the floor from the nearby landing fields.

His new assistant and bodyguard was pleasantly deferential, lighting cigarettes for him, listening respectfully to his opinions, drawing him out with questions that showed he understood what he was listening to.

Bryce could not remember having had such a good time talking since he left the company of the meteorite miners at the Belt. Everything he said seemed right and even brilliant. As he talked and told anecdotes of his life and sketched some of his plans he saw his past life with peculiar vividness as if he were a stranger seeing it for the first time. In the reflected light of the interest and enthusiasm of his audience, events took on a new glow of entertainment and adventure and success where they had seemed to be just work and risk and routine at the time.

They had an evening to pass. Somehow Pierce got into conversation with a little Egyptian who could have stood for Cyrano and had the same merry impetuous way about him. Raz Anna was his name. He claimed to be the Caliph of Baghdad, still incognito, or perhaps a professional explorer disguised as a native. After a few drinks he enlisted them, somewhat confusedly, as the two missing musketeers and they found themselves wandering arm in arm from bar to bar and up and down dark alleys interviewing the heathen natives.

Bryce realized that he was laughing steadily and enjoying himself in a way that had nothing to do with the small number of drinks he had had.

He couldn't get any deference out of Raz. Raz wouldn't have deferred to God himself, and it was no use trying to impress him, for nothing impressed him. Apparently the hook-nosed, merry little man had no ambition and no envy of anyone, and wanted no better of life than he had at the moment.
It was a strange new world they led Bryce through--Not the ragged, starving, crowded viciousness of his childhood--not the fighting equality of spacemen and rock miners, many of them wanted by the law--not the simple barren hospitality of the settlers in the Belt who owed him money, and who invited him to their sparse dinners in gratitude--Those he had always managed to keep in their places and exact a certain measure of respect.

Even the smooth powerful men of wealth around him now accorded him a certain measure of deference that was an acknowledgement of strength. But the two musketeers he was with and the world they opened for him seemed to respect neither distance nor politeness, nor hold any fear for strength. Friendly insults, and uncritical friendliness mingled oddly with the mock-solemn pretense of the fairy tale, and that part was genuine and spontaneous. It didn't seem to be a different kind of people he was meeting exactly: it was the same kind of people approached differently. He didn't know exactly how it was done, and he let the other two take the lead.

Perhaps he had drunk too much, he thought as he rode the hotel elevator. For in retrospect, the evening was a haze of pleasure that was hard to pin his attention to. Everything he had said, everything that had happened seemed profoundly right, an atmosphere which he had encountered rarely before and only then in the last stage of drunkenness. But he was sober. He had had only a few drinks, and his perceptions seemed sharpened rather than blurred. Yet, where there should have been critical thoughts and regrets for errors and restless plans in his mind, there was only a pleasant empty buzz.

"Too much talk," he thought, yawning as he walked down the luxurious hotel corridor to his room.

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It was that night that he first noticed something wrong with the mirror.

He glanced into it casually while undressing, then not so casually, walking up to it and inspecting his face. A slight, unpleasant tingle coursed along his nerves.

A stranger--When he tried to focus on what was wrong he could find nothing that looked any different, yet the total effect was completely wrong. He decided that it must be the mirror, some subtle distortion of the reflection. The old one must have been broken in cleaning and a new one put in.

The chill passed and still the good blank feeling lasted. He went to bed reviewing the evening and smiling, and went to sleep without resorting to the mental arithmetic that he generally used to clear his mind of dissatisfactions.

The next morning the mirror still looked peculiar. There seemed to be nothing wrong with the reflected image of the room, but when he gave himself the usual inspection before stepping out into the corridor the feeling of strangeness returned and his eyes felt as if they were blurring.

He put his hand up to his eyes instinctively and felt a distinct shock when the mirrored image did the same.

Odd.

A slender smiling young man joined him in the lobby, rising and falling into step with him as he passed, going through doors before him with the inconspicuous alertness and precaution. He did his duties as a bodyguard well, Bryce noted, but that was only to be expected. Efficiency is, and should be, unnoticeable.

One thing he discovered during the working morning at the office. There had been nothing wrong with the mirror in his hotel room. The washroom mirror was worse!

He stood for a while, frozen in midstep, while he looked at a lean tanned and freckled face which looked like a color movie of his, every feature in its proper place as he remembered it, but yet not his. It didn't belong to him. He made faces at it, and it made faces back as if it were his, while he tried to believe that he was looking out of the gray eyes which looked back at him, then he heard someone coming in and left suddenly and sheepishly.

That afternoon, after Pierce got into the swing of the work, he began to be useful, fitting himself into the work routine as though he had always been part of it, making the right calls and contacts and appointments on the barest hints, handing him the phone intuitively as he needed it, always at the right time with almost telepathic instinct. While checking over the decisions and plans of Kesby and the staff that needed his okay, and signing typed letters Bryce talked the thoughts and plans which came half formed to mind, almost thinking aloud. And when his remarks struck something that sounded like it would be good to do soon, he saw Pierce jotting them down, later detailing the preliminary steps for Bryce's use.

And too, all the small tasks were being taken from him with easy naturalness, saving him much time. His assistant was being what he had claimed he would be, a genuinely useful left hand. Bryce found himself proud of the kid's manifest efficiency, for he was a product of the same school that Bryce himself had climbed from.

On the way back to the hotel, after work, he caught Pierce glancing at him with a thoughtful expression, and realized that he had been faltering and giving a second glance to every public mirror that he had passed. He was momentarily embarrassed, wondering if any strain had showed on his expression.

There was a party he had to go to that night so he changed to formal clothes and stepped off again for the home of the FN Administrative Governor of the Moon.

He did not want to attend. It would be another of those stiff, lonesome dinners he had suffered through before,
but he had to learn to make friends on his own social level, and be easy and convivial with the kind of people he would be associating with the rest of his life.

After the first hour had given him a good test, Bryce decided that the evening was as bad as he had anticipated. He stood on the outskirts of a small group, holding a drink and watching resentfully as a startlingly beautiful woman laughed and talked with the others of the group and not with him. She had been introduced to him as Sheila Wesley. The jokes she had with the others were quick and subtle flashes of wit and insight, and seemed to be based on a mutual understanding that he could not share, even though some of the others had just been introduced and had been strangers to each other a few minutes back; it was something he grasped vaguely as a common background and approach to life that they shared, perhaps through education.

There were quick references to political situations they all seemed familiar with, or a name that could have been some character in a book they might all have read, or could have been somebody in history, each reference followed by a subdued laugh and an added witty statement from some other quarter. No one of them gave a word to him or noticed that he was there.

Why should they? He was dressed well and expensively, but so were they all. He was a person of prominence and power, but so were they all, and bored by it. He could not talk like the others. Then what could he do to make Sheila Wesley smile at him the way she smiled down at the ridiculous little fat man beside her as he excitably stuttered out his opinions.

* * * * *

Sheila Wesley was not like Mona, to be captured by money and clothes and influence. Would she be impressed even by the power he would have later? He tried to picture her as tremulous and awed, hanging on his words and flattering him, but he couldn't believe it. She probably wouldn't notice him any more than now. There was nothing he could do to impress her. He had thought Mona had poise, but now he saw that her manner was just an inadequate carbon copy of a completely spontaneous original. The woman, Sheila, managed to be poised, aloof, and yet friendly to everyone, simultaneously warm and unattainable.

He desired to be bitingly rude. That, at least, would make her admit that he existed. She was smiling at that ridiculous little fat man again.

He drained his glass and, completely unnoticed, left the party. Nobody would miss him, he was sure.

Outside in the corridor, Roy Pierce, his assistant, was engaged in conversation with two young men and two girls.

"There he is now," he heard Pierce say.

And one of the young men came toward him laughing.

"Is it true that this lunatic cannot go and make up with the lady of his heart because she has had him banned? If we all try to smuggle him in--"

And one of the girls, a really gorgeous blonde, called, "He was just telling us about that time you were in space with the pirates after you and they had stolen the big focusing mirror from the first Belt foundry furnace. I'm sure you can tell it better--you tell it."

He was surrounded by the five then. "Go ahead," they were urging, laughing, "Go ahead!" "It didn't really happen did it?"

This accusation was made by the pretty blonde. He looked at her half indignantly. "I don't know how he tells it but it happened." And he began to tell what had happened.

The two girls and the two young men listened, adding occasional startled interjections and admiring laughter.

Pierce inserted an occasional question and Bryce became aware that in answering them he was guided to stress and amplify points that made clearer the danger and comedy. Later he became aware that he was half consciously following the clues of Pierce's expression for the right stress and mood of the telling, now off-hand and smiling in telling what he had done, now heavily dramatic mimicking and burlesquing the tones and threats of the outlaws, now ironic and bitterly indifferent in passing over damage and deaths--as a wryly lifted eyebrow in the dark young face listening, and a faint imperceptible shrug made him see what had happened from a different angle than he had seen it then. Pierce apparently had something he needed, a good story sense. Following him must be something he had learned unconsciously last night, but it worked. He could see how well it worked in the expressions of his audience.

Someone leaving the party had stopped to listen, standing behind his right shoulder. When he finished, amid the exclamations and sighs of his listeners a cool, familiar voice drawled.

"That's quite a story. I picked up something about that at the new foundry on reef five, but it was already an old yarn then." She stood before him, still smooth and poised and lovely, offering her hand. "I'm glad to hear it from the horse's mouth. Aren't you Bryce Carter? We were introduced in there, I think, but the name didn't click."

It was Sheila Wesley.
That evening was something to remember.

First they were a private party at a nightclub, then at a small restaurant. Tom, Betty, who was the pretty blonde, Ralph and the pretty brunette whose name was Marsha, Pierce, himself and Sheila. The talk ranged wildly over a multitude of subjects, breaking sometimes into collective fantasies of nonsense like a hat full of fireworks that left them laughing helplessly, sometimes shifting to philosophy and mutual confidences. Every so often Pierce brought the subject around to something that struck home to Bryce and he found himself holding forth with unexpected passion and eloquence, and he was surprised to see that the others were keenly interested.

Pierce rarely said more than an occasional cheerful remark, but in the more subtle plays of conversation Bryce found himself still half consciously consulting the cues of his expression to find what his own reaction should be, to find the right word and the right attitude that pleased the table and urged them all on to greater and more fantastic heights of talk. It was obvious that Pierce never had any difficulty understanding anyone. He had an instinct that Bryce lacked, and Bryce willingly surrendered to superior skill and followed his silent lead.

Sheila he discovered, besides being a member of one of the top diplomatic families, had worked for a short while as a consultant at the Belt plastic manufactory when it was being set up, and had taken to space life. She shared his enthusiasm about the future of the Asteroid Belts.

It was an unprecedented evening. At the close of it he had four new friends, and had discovered that "Tom" was Thomas Mayernick, one of the attorneys of the Spaceways Commission, and one of the men whom he had gone to the dinner to meet.

And Sheila, tall and slender and beautiful, pressed his hand as the group parted, and said in her wonderful voice, "I want to see you again Bryce," she smiled. "I eat at the technicians' end of town, you know. I'll be with a Group at Geiger's Counter, tomorrow lunch. If you bear the company of slide rule artists we'd be glad to see you any time."

He stood for a moment, oddly surprised.
"Say thank you to the lady." Pierce smiled. And to Sheila, "You shouldn't startle people like that, Ma'm. His heart's weak."

"I just dropped dead," Bryce said, finding words. "You aren't leading me on? You'll be there?"
"On my honor," she smiled. "Good night, Bryce." She was used to such tributes. Half mocking as they were, she knew how much they were basically sincere, and accepted their tribute to her beauty as a matter of course. What a wife to have and introduce as his wife to other men, and see the look in their eyes.

He remembered suddenly that he had not once mentioned that he was a Director of UT. Somehow the conversation had never been led to a subject where he could have said it. He made a mental note to tell her next time. It seemed strange that he had been with five people so many hours without informing them that he was a Director of UT. But they had seemed to like him without it.

He let himself into his hotel room and turned on the light, but the first sidewise glimpse of himself in the mirror was disturbing. He solved that problem by the remarkably simple expedient of turning the light out again, and undressed in the dark, grinning foolishly.

VI

Approaching the scientists' and technicians' row along the subsurface arcades, the expensive restaurants grew fewer and were replaced by German-type beer halls, schools with courses advertised in their posted schedules whose titles were completely unintelligible to him, and second hand bookstalls selling battered technical books and journals whose titles were undecipherable in any tongue Bryce could think of. The lunch hour crowds were beginning to pour out into the arcades from elevators and tube trains in a rush to get first place in their favorite eating places.

Pierce half turned as if his eyes caught on the expression of a face behind them.
"Carter! There you are, you bastard!" The voice came from behind him, thick with rage, but more than that was the insult. It meant challenge. This was nothing in which Pierce could defend him!

Bryce wheeled, left hand automatically plucking out his magnomatic, wondering if the attacker would be the honorable kind of duelist who would hold fire long enough for him to get his gun out.

Miraculously it seemed to be happening. He already had his sights halfway on to the expression of a face behind them.
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Miraculously it seemed to be happening. He already had his sights halfway on to the speaker when he recognized him, a gross heavy figure he had seen a hundred times. Mr. Beldman of the Board of Directors. What was he doing on the Moon?

Beldman stood with his fists on his hips and his legs spraddled, sneering at Bryce. "That's right," he said, heavily sarcastic, "start shootin' when you're surrounded by innocent spectators; when you know I can't draw on you. That's the way of a crook." The husky base voice echoed from the walls. Behind him to the bend of the corridor people were scattering hastily out of the firing line.

Crook was the central word. Somehow Beldman had found out that Bryce was responsible for the corruption of
UT, and he was dealing with the matter in the most direct way that it could be dealt with, for a death in a private duel would be laid to a quarrel and not investigated.

How had he found out? Bryce forced down the question as he stiffly reholstered his magnomatic. There was no use thinking of that until the question of surviving the next five minutes was settled. He stood with his hands empty, feeling curiously empty inside, oddly missing the white rage and love of murder that usually carried him through such things.

It seemed too good a day to spoil. He would rather have continued his way to lunch with Sheila, and let the man live—or let himself live. This would be no duel for a little bloodletting. Beldman's purpose was to kill. And Beldman himself, knowing what he knew, had to die. "Do you understand what you have said, sir?" Bryce used the formal words of the dueling countries.

"You're damn well right I do!"

"Are you prepared to take the consequences, sir?"

"More ready than you are," Beldman said, his hands still on his hips. He amplified his remark with a few well-chosen words that harked back to his truck driving days.

"How many shots?" Bryce asked more softly, beginning to want to kill.

"Until one of us is down with his gun out of his hand."

Bryce repeated the provision to the crowd that had drawn up discreetly along the side-lines. "We fire until one of us is both down and disarmed."

There was a murmur of surprise among the crowd for that was an unusual and deadly provision for a formal duel. As Bryce paced backward the required number of paces, counting aloud, two men volunteered as seconds. They came forward to compare the guns rapidly and show them to the duelists. It had to be done and finished rapidly, for lunch hour had begun with its flood of people into the corridors, and they were holding up traffic.

Bryce's gun was a .42 magnomatic, working on an electrical acceleration of the slug by electromagnetic rings in the thick barrel. It was soundless except for a legal built-in radio yeep that announced its firing and number to the police emergency receivers. Beldman's gun was another maggy of the same make but heavier with a wide-mouthed barrel apparently throwing a much heavier caliber slug.

"Ready?" The second stepped back to the edge of the crowd and began counting off half a minute by seconds.

The faces of the crowd faded from his consciousness. Bryce stood with his hands empty at his sides as the seconds were counted. "Thirty, twenty-nine, twenty-eight, twenty-seven," came the voice, counting evenly and loudly. The world narrowed to a corridor of space with the blocky figure of Beldman at one end and himself at the other. Funny, Bryce thought, that he had never considered that bull-headed impatience and strength as dangerous. He was a massive block of a man; where Bryce was thick with muscle, J. H. Beldman was so wide in shoulder and barrel and so thick in arm that he looked almost round. Like Bryce he had worked up from the bottom, Bryce remembered, starting as a truck driver and labor organizer, and then owning his own line and giving UT a stiff battle before being bought out. Crude, but that didn't mean that there wasn't a lightning brain behind that round face.

"Twenty-six, twenty-five, twenty-four, twenty-three--"

He had underestimated the deadliness of the man. Beldman was obviously subject to rages, and in the grip of one now, and if he had survived all the duels and battles that his rages had brought long enough to grow as old as he was then his age was an indication not of weakness, but of the degree of his deadliness. The irritable thought came that he might well be killed by this ox.

"Twenty-two, twenty-one, twenty, nineteen--"

* * * * *

But the maggy was still there, held in the numb, unfeeling hand, pointed limply at the ground.

"Drop it and fall down," advised Pierce's clear voice from somewhere.
There was a stirring and whisper from the blur of the crowd who stood watching to see that the rules were observed. Beldman was walking towards him.

"Do you end the duel?" asked someone, probably the second.

"No," the blur of Beldman answered and suddenly he came into focus, walking up, his wide mouthed gun unwavering in his hand. Bryce remembered the provisions of the duel. Fire until one is down and weaponless. There was nothing said about remaining at a fixed distance. Beldman intended to walk up close enough to shoot him between the eyes. It was too late to let himself fall and end the duel. Beldman would fire if he saw Bryce begin to fall now. He was already close enough for a sure head shot.

Feeling was returning to his left arm. It dangled abnormally far and probably looked broken and useless, but there was nothing actually wrong with it, only something in his shoulder was broken. After the first cold numbness of impact, sensation returned tingling in his fingers, and pain was beginning to burn in his shoulder. Bryce waited a few more seconds, feeling the control returning to his fingers, not changing the glazed off focus of his eyes. How many duels had Beldman won like this? The impact of one of those heavy slugs hitting bone was a dazing blow, enough to stun some men, and he probably counted on that effect.

The square figure lumbered closer, a lumpish clumsy caricature of the self-made man, brutally strong, unashamedly misfit to the society of the smooth-wise, smiling, easy mannered people that he and Bryce had joined; a model of everything that Bryce was trying to destroy in himself.

With a quick twist of the wrist Bryce swung his palm flat up flipping the magnomatic muzzle into line with it and put a bullet into the round face.

In that position of his hand the back kick of the shot twisted his arm back in its broken shoulder and pulled the maggy from his hand, but it didn't matter. The duel was over.

The motionless crowd dissolved again into talking individuals going to lunch.

Pierce picked up the maggy and made the usual query of those who chose to remain.

"Which of you has any complaint of unfairness or advantage taken by either party of this duel?"

Most of them were leaving, anticipating the arrival of the police with their time-consuming questions, but twenty or so crowded close around Bryce and the corpse. "Press a thumb on your shoulder sub-clavian, man," someone advised Bryce. "You're bleeding like a faucet."

Pierce's clear voice said the standard words over the murmur and shuffle of feet. "No unfairness having been observed, when called to give testimony you can then say that he shot in self-defense and under duress."

A low wail of sirens was heard.

* * * * *

"Who was that character?" Pierce asked later, sitting beside the table while a surgeon patiently pieced together the three or four shattered pieces of Bryce's collarbone and fastened them with ingenious plastic bolts.

Bryce absently watched the process in a large tilted mirror slung overhead. Medicine bored him. "J. H. Beldman, member of the Board of Directors," he explained, and for the benefit of the policeman standing beside the door he added, "Bad tempered as they come." He looked into the mirror uneasily, trying to focus on his face.

His clothes were being cleaned of blood and dried somewhere. When the doctor had finished sewing and patching Bryce showered and dressed in a small dressing room beside the emergency ward, where he found his clothes hanging neatly in a drying closet.

As he finished a man in plain clothes entered and dismissed the cop with a word, and handed Bryce a printed notice and his magnomatic; "You're clear," he said, leaving again with a friendly half salute. "No charges." The police had already recorded the testimony of the witnesses and inspected the weapons used. It had been a fair duel and the survivor was clear with a standard case for self-defense. The printed notice called him to testify at the coroner's inquest into the death of J. H. Beldman during the next Saturday, but there would be no charges and no investigation.

There would be no trouble from Beldman, but who else knew what he had known, that Bryce Carter was responsible for the corruption of UT? How had he learned it? If someone else knew, there was going to be trouble.

Coming out of the emergency ward, he checked his watch.

One-fifteen. Too late to find Sheila Wesley still at Geiger's Counter. But he knew he could see her another day—and with a good story to explain why he had not turned up the first time.

They ate at the nearest stand and went back to work. Trying to write was almost impossible, and even using his left hand for minor tasks was difficult. In spite of quick healing of muscle and flesh from the amino and nucleic acid powders the doctor had packed in, the shoulder ached with a tightness that spoiled his coordination. He shifted to writing clumsily with his right hand.

After twenty minutes he abandoned the pretense of working and began thoughtfully doing practice draws with his right hand. It was stiff and clumsy, and there was no holster in his right pocket to make grasping easy. The
second time the maggy caught on his pocket edge and slipped from his hand he left it on the rug where it had fallen, sitting looking at it thoughtfully for a moment. Today was the day he would meet Orillo.

"How well can you handle a four tube cabin cruiser?"
"Line of sight only. I'm no navigator," Pierce responded.
Bryce said soberly, realizing what he had decided, "This is a good day to have a bodyguard who's a good shot. I have an appointment to meet a friend--and I'm not sure he's a friend."
"I shoot," Pierce said, writing at one of the letters he had been set to. "Happy to oblige. Shall I wear my bulletproof clothes?"
"You could do with something like that," Bryce said soberly.
Pierce looked up from the letters. "Would this be the man behind all these bullets, and you're meeting him in space?"
"Yes."
"In armor plated tanks with heavy artillery?"
"No."
"No light and heavy cruisers. No marines?"
"Just you." Bryce was smiling at Pierce's mock astonishment. He knew that the kid didn't care in the slightest where Bryce led him as long as there was a fight at the end of it, and he left it to Bryce to choose the odds.
The odds might be even enough. Orillo himself, if he came with murder as his intention, would bring no helpers for witnesses, and he would expect Bryce to bring none. Or if he had hired assassins, he would not come himself, and they would not know who had hired them, but they would have been told to expect one man only.

* * * * *
The secrecy of any meeting in space is practically absolute. If there is one thing which space has plenty of, it's distance--distance enough to lose things in, distance enough to hide in, distance enough so that even if you know where something is by all the figures of its coordinates, if it's smaller than a planet you can't find it even when you are there. To put it crudely, what space has is space. And finding something that doesn't want to be found in space is like looking for a missing germ in the Atlantic.
He had the coordinates of the beacon he had chosen for his appointment point and the robot pilot took him to that area with automatic precision. But once there he had to cruise manually back and forth three times through the perpendicular plane of Earth's equator before picking up the radar pip of the buoy, which was set to broadcast its presence by a circular sweep of radar pulses on a flat plane corresponding to the Earth equatorial average.
He found it no later than expected, which was over an hour early, on the principle that he who arrives first finds no ambush.
He left Pierce with certain instructions and floated from the ship to the familiar globe that spun so placidly on the anchoring rod that attached it to the controlling buoy. The buoy was powered strongly enough to have controlled the orbits of fifty such globes without strain. Buoys of that type were just beginning to be popular in the Belt.

Once inside he opened his faceplate, looking around with the same pleasure he always felt on his visits here. It was like being back at the Belt for a time. After the raw harshness of the moon and the artificial luxuries of its cities, after the agoraphobic vastness of Earth's giant surface, to be within this little close-knit familiar world was soothing and relaxing. It was a green glade of leaves and branches, greenness underfoot and overhead, a brown metal cliff with vines and a door to his left, a larger brown metal cliff like the round head of a barrel with doors in it to his right, and a circular silver door in the center. Behind the small right hand cliff was the small amount of regulating machinery required, behind the doors of the larger cliff was a small kitchen, and convertible study-bedrooms. Behind the silver door was a corridor leading to the airlock and space. It was forty feet from cliff to cliff, and from the growing greenery underfoot to the growing greenery overhead, as spacious as a wide glade in the woods of Earth.

He picked his way among the vines and shrubs to a carpetlike patch of green moss and sat down comfortably to wait. Pierce had drawn the ship off beyond detector range by now, and it would seem to any ship approaching that he had not yet arrived.

It was peaceful there, no breeze stirred the leaves. Twenty feet above, fixed in the air on clear spokes of lucite, the crystal globe that was the sun for this small world gave forth its warming flood of light, sunlight borrowed from the sunlight outside and led in on the lucite spokes.
He had an interest in its manufacture, and had anchored his globe here as a commercial sample of a spaceglobe for the viewing of likely settlers. It was slightly better and more compact, since it was a newer model, contained in an ovoid hull that was only forty-six by sixty-six feet, but in essence it was like any of the farms and homes of the asteroid belt, and there was nothing like it on any planet in the universe.

VII
Behind the silver door a bell rang suddenly. A spaceship was approaching.

It was still early. They would see the globe alone and assume that Bryce had not yet arrived. The spaceship itself might be armed illegally, but those within would not blast the globe without checking its interior. Bryce glanced up at the silver door in the cliff and arranged his position so as to be lounging on one elbow, with his gun hand lying relaxed under a thin curtain of leaves. The magnomatic was pointing up towards the corridor door.

There were a few tall bushes between the base of the cliff and himself, but the silver central door was five feet up a flight of steps and in clear view.

Four flights of steps radiated away from the circular door to the hull, like spokes from an axle, all of them leading "down" to the inside surface of the globe. As he waited he heard the faint clang of magnetic soles hitting the metal of the airlock, and then the door chimes that announced that the airlock was being used. Someone was coming in.

He could follow their actions in his mind, timing them. Now they would be floating in the vestibule, facing a circular wall with a door, the wall spinning silently and rapidly, and the door in its center turning slowly end over end. The door marked the axis of rotation. There was a turning bar with handles running through the center of the airlock. They would float up to that and grip it to pick up spin, until the vestibule seemed to be rotating around them and only the circular wall and the central door seemed to be steady. Beyond it would be the corridor, and then the silver door.

The door in the cliff dilated silently. Two spacesuited men stood in it.

It was incredible that he had let them come in without seeing the door open. In the first split second he saw that neither of them was Orillo. In the second instant he saw that no weapons were visible, but that one stood slightly behind the other and his right arm was hidden.

They had happened to come to the entrance at an angle to his orientation, almost at right angles, and they would be confused for a moment, before they identified his shape, for to their orientation if they used Earth-thought for it, he would seem to be leaning head downward on an almost vertical slope. He took advantage of the lag to move his gun under its curtain of leaves and get the sights lined on them.

They swung their eyes around the circle and saw him. "Mister Carter?" asked the foremost one. Their faceplates were still closed, and their voices slightly distorted by transmission through the helmet speaker, but he could hear a note of surprise. As the first one spoke the second one moved his hidden arm slightly, as if he were holding something.

Bryce did not tighten his finger on the trigger. These could be mere innocent sight-seers. The position of his head, almost upside down relative to theirs, was probably confusing them, though almost certainly they had studied trimensional photographs of him. At any rate they probably were aware that they were standing like targets in the corridor doorway and would be in no mood to postpone action.

"Take off your helmets, gentlemen, make yourselves at home." It was a partial admission that he was the man they wanted, but not certain enough for a decision. He saw the shoulder-twitch that meant that the second one's hidden hand jerked in a moment of uncertainty, and he thought he saw something glitter under the first one's arm--the old trick of shooting from under a friend's screening arm....

"Mr. Bryce Carter?" the foremost one was asking again.

Bryce smiled. "No, Pierce," he said. He had turned on the two-way speaker and tuned it to the ship as he came in.

Immediately the voice came in the corridor behind them. "Stand still. You're covered."

There was no chance that anyone could genuinely be behind them, but the rear one whirled and snapped a startled shot into the darkened corridor, and the other leaped sidewise down from the doorway, drawing his gun with blurred speed, and leveling on Bryce as his feet left contact with the sill. He was falling slowly, almost floating, and it should have been an easy shot, except for something he had obviously forgotten, or he never would have leaped.

Bryce disregarded him as a danger, and threw three shots at the other, who still stood startled and off balance in the corridor, firing three with his inexperienced right hand to make sure of placing even one. The figure dropped out of sight in the corridor.

* * * *

In the flick of time that Bryce's eyes had been away from the falling one, the path of the man's leap had begun to curve strangely, until now he seemed to be floating in a curve, flying sidewise and upward, faster and faster as he approached the hull. The rule of conservation of momentum was having its way. To the man's dizzied eyes, as he tried to keep Bryce within his sights long enough to fire, it must have seemed that the ground began inexplicably to turn and slide by, that suddenly the whole shell was turning around him like a big wheel, carrying his target up the wall and over his head.

He was almost to the sliding ground when a bush caught at his feet and yanked them from under him with a
crackling of branches, and the bottom tread of a flight of stairs swung at his head like a gigantic club. Among the sudden splintering of branches and snapping of vines was a crunching thud which sounded final.

To anyone within a globe, it did not ordinarily appear to be spinning, the only sign it was, was the comfortable pseudo-gravity for anyone standing on hull level. But to those who approached the ground from the lighter G corridor, the stairs were necessary--stairs whose treads were oddly dipped in the middle in a shallow U. By bracing against one side of the U coming down, and on the other going up, one invisibly picked up enough speed to match the speed of the ground level. Jumping was the equivalent of jumping out of a moving car at forty feet a second, the sixteen feet a second, half of the corridor plus an extra thirty feet a second spin, the side slip speed of an eighteen foot drop where it had looked like five.

It was probably these added extra distances in the air, Bryce decided, that sometimes made the bird flights look so bewilderingly variable in speed and direction. He had not thought before how difficult it would be to plot a straight course from one side of the globe to the other.

He waited for a sign of motion, his magnomatic ready, looking up at the gunman lying overhead, forty feet away on the other side of the globe. The limp figure was unmoving, it looked badly tangled in vines, and its gun was gone. There was no need to shoot, but he wondered suddenly, if he had, what kind of a curve would the bullet have followed?

There was no sound from the other, but Bryce hesitated to climb the stairs and put his head above floor level of the corridor. A voice might give the other direction for a snap shot if that was what he was waiting for. Bryce chanced speaking.

"I've got this one, Pierce. How's the other?"
The televiewer in the entrance hall replied, "Lying on his back with his gun five feet away. You all right?"
"Yes." Bryce walked around the circumference of the globe and searched in the vines for the missing weapon of number one. The body in the spacesuit nearby was quite definitely a corpse. He saw the gun glittering a little further on and picked it up, wiping off leaf pulp on a clean patch of moss. It was a heavy duty police pacifier, a distance stunner, adjusted to a narrow beam.

He climbed to the corridor and collected the other weapon. It was a police pacifier too. They had not meant direct murder then, but only to stun him and deliver him to Orillo, C. O. D.

"How are you doing with their ship?" Bryce asked, "Is it armed?" Armament for spaceships was illegal, and careful official inspection made it rare.

"I didn't wait to see," Pierce's voice came apologetically after a pause in which some background noise sounding like a crash came over the televiwer speaker. "It started swinging around when I came in sight, so I just rammed it with that pretty ornamental nose spike. I'm backing off now with the forward braking jets."

"Then whoever's inside is probably either spacefrozen or cooked. Jockey that ship around on the spike and give her a four minute shove toward Earth, then push that button that collapses the ornamental vanes on the spike and let it pull loose when you start braking. I don't want any ship hulls floating around here."

"Aye-aye, Cap."
"Go slow on those braking jets when you pull loose. The back wash could touch your hull."
Pierce returned and came in to help Bryce drag the corpses through the airlock and into space.

They braced against the silver curve of the floating spaceship and gave the body a combined strong shove towards Earth. Spinning slowly end over end it dwindled into a dark speck against the glowing orb of Earth, destined to be a meteorite and make a small bright streak in the Earth sky several days later.

When the tubes conk out, the fuel runs down, The cold creeps in to where I lie.
Pierce was reciting as they went back into the globe for the second corpse.

I'll take the meteor's trail--go home to Earth And make a Viking's funeral in the sky.

"This is too easy," Bryce complained as they watched the second corpse fade from sight. "The trouble is, in space all corpses are delicti. It's an incentive. Launch your enemies."

"Gaucho country did all right under that system," Pierce said somberly, "and so did the American frontier."

He floated motionless, a spacesuited figure turned toward the gray-green misted globe of Earth that shone against the black star-sprinkled sky as if he could have reached out and touched it. The sun caught the planet on its day hemisphere and reflected brilliantly from a shadowy blue glaze of water that was the Mediterranean, turning half of it to white fire.

Bryce's earphones picked up Pierce's voice again. "Frontier-born nations always look back and say that the first years were the best."

The words caught at something Bryce had felt before. He looked at Earth hanging splendidly in space. It was beautiful and he was fond of it, but--He said, "I don't think we'll ever go back." Nor would mankind itself. Never again--through all conquests from this point in time--would mankind go back down into the mesh of gravity to be a
thin film over the surface of a planet.

"Give old Earth a smile, Bryce, we've hatched."

For a moment longer Bryce hung, watching Earth turning below. The management of UT was down there. He'd be damned if he'd let them get away with thinking they could tell him what to do, or tell the Belt where a line should be extended and a colony planted. The belt was his country, not theirs. Space belonged to the people who lived in it.

"No taxation without representation," Pierce said irrelevantly, as if he had been reading Bryce's thoughts. They jetted back to the ship and into the spacelock.

"Frontier country--" Bryce said as he stepped into the cubical of the revolving door. Gently tightening elastic bands drew him into position within the man-shaped mold. "What's a frontier on your terms, Roy?" When he was in place the other half of the rubbery, air-excluding mold closed on him and the airtight cylinder rotated, delivering him into the interior of the ship. He pushed the button impatiently to have it revolve back for Pierce, but it remained obstinately open, its servo refusing to close on a mold full of air and rotate air back for release into space.

Bryce remembered then. This was something he didn't have to bother with when he flew alone, for when going in or out he was always in the door when it rotated; it never turned empty. Beside the door on a hook hung an inflated pressure suit, complete with gloves, boots, and helmet. Except for the absence of any sign of a head or face inside the dark translucence of the helmet it looked like a full-sized man. Bryce reached it down and placed it in the mold, and watched grinning as the mold closed and the door rotated, delivering the man-form to an equivalent hook in the spacelock. The doll was known by all spacemen as Hector Dimwitty, and every ship had one or two. There were a thousand yarns and jokes circulating about the adventures of the Hectors, most of them lewd, and a few of them true.

Pierce's answer was in his earphones, "A frontier is where people go when they are young, broke, or have the cops after them."

"Right. Suppose I stake the broke, and loan them transport, and offer the fugitives unregistered safety to receive mail and to buy supplies?"

"You do that?" Pierce stepped out of the door and they took off their helmets.

"Yes, when I am my own man, not working for UT."

"If you do that, you bring in ten times as many of the broke who wanted to settle there, and--" Pierce took a long jump in understanding, saying softly, "They're dependent on you. Handcuffed to you and praying for your health and prosperity as long as you hold their loans and secrets, for with your death or bankruptcy, another man might come to your books to read the records of your loans, and demand payment, and give the secrets to the police or keep them for his blackmail. But to do it is to take a risk of murder or arrest, and a high cost in hard work and money. Why do you want to do this? What payment do you take?"

"They pay by being my men, grateful and ready to back me up when I want help later. They don't have to be grateful, for they know I can call any loan if the owner crosses me, and I've built a reputation for an occasional fit of irrational temper that is threat enough for anyone to avoid crossing me, without feeling that I have wanted to threaten or force them. As for the fugitives they pay enough by wanting the Belt to be organized as a nation independent of Earth, so that the hand of the law can't stretch out and drag them back, and they can become wealthy in open business, in the million chances for wealth that lie around them in the Belt. They don't know that they want this yet, but they will see it when it is told to them. I can't do any of this now--it's suspended for as long as I am part of UT and have to drag the dead weight of ten Earth-tied conservatives with me in every decision."

VIII

He stopped to set in the coordinates of the Moon for the robot pilot, but he found himself still wanting to talk. "Man has reached space--do you think he'll ever go back to the ground? In space he has gravity only when he wants it, and any weight of gravity he likes, depending on how fast he spins his house. And no gravity when he wants that. You see what that means to engineers in the advantage of building things? No weight in transportation, no weight in travel, limitless speed and almost no cost as long as he stays away from planet pulls. His house is in the sky, and when he steps out of it he can fly like a bird. And food. To grow food there is sunlight Earth never dreamed of. For heat and power there is sunlight to focus. Space is flooded with heat, irradiated with power--"

"It's not child's play taming it, and those on the ground don't see it yet. But the next step of mankind is out into space, and it's never coming back."

Pierce, sitting in one of the shock tank armchairs, asked, "What part do you have in this?"

Bryce looked at him with a feeling almost of surprise, as if he had been called back from a long distance. "Me?" he laughed, a little awed by the immensity of the goal, and the ease of it.... "First President of the Belt and political boss for life. That's enough."

Enough to hold the solar system in the palm of his hand, if he chose. He who rules space, rules the planets. It was the first time he had ever mentioned his goal to anyone.
Roy Pierce asked, "What do I do about this 'friend' of yours who lays traps?"

The last attack had settled the question of who was behind the other attacks, and who had told Beldman, but Orillo would still be a useful pawn. All that was necessary was to evade his attempts at murder for a month or so until partnership tied them too close for murder.

Bryce explained some of that to Pierce, setting up a chess board to pass away the time until they arrived back at Moonbase City.

"What's my next assignment?" Pierce asked, when they were several moves into the game.

Bryce recalled a danger he had made no move to guard against. "The Board hired a psychologist, a mind hunter, to find out who's doing the undermining. He's one of the Manoba group. Remember the name, look it up and find out what their methods are, how to recognize them, and report back what to do about it."

"I'll take care of him," Roy Pierce said absentmindedly, moving his knight to threaten Bryce's bishop.

"No unnecessary trouble. Remember I have to keep my name clean." Bryce moved a pawn one step to cover the bishop and leave room for his other bishop to menace the knight.

"I'll be careful. There'll be no publicity. He won't get hurt," Pierce said, moving the knight into Bryce's second line where it threatened the king and a cornered castle. "Check." And he added, as if apologizing for having delayed his move, "I don't like to move until I'm sure what's going on."

The remark didn't seem to be suited to the game, as if he had referred to something else.

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It was during dinner on the Moon that he and Pierce loosened up for the first time since the ambush. Pierce had been comparatively silent since the chess game on the trip back and Bryce too, whether in sympathy with him or in a naturally parallel mood, had little to say. But now the tension had diffused and, with the stimulus of aromatic food, they climbed out of their depression of emotional solemnity.

The decorations of the dining room were lush. While they ate, the materialism of their lives was reinforced. From silvery-and-tapestried wall to wall there was life here, low-keyed with excitement in the blend of subdued talk and the shifting artistry of lights and music. Their table was almost in the center of the islands of tables and potted trees, and around them were the diners, their voices washing up at them both, inviting them with gentle tugs to surrender their resistance, beckoning them into the sea of simple pleasures.

"We owe ourselves some fun, Bryce."

At Pierce's words, Bryce sharpened his eyes on the face across the table. There was a touch of seriousness in those words; more like a statement than a suggestion.

Pierce smiled wryly and took a vial out of his pocket and poured it into his drink. He spun the empty bottle between thumb and fingers.

"We owe ourselves some fun," Pierce repeated. "We've nothing on the fire tonight, nothing to do that's crucial. It's a good night to experiment."

The warm voice waves lapping at Bryce's mind suddenly receded and left a chill. With instinctive wariness he thought of hypnotics and single-shot addictors.

Pierce couldn't have missed the emotionless freeze on the other's face. Still twirling the vial casually, he began to explain. It was a new drug, he said, found being used by a tribe in Central Africa. "I've heard of it for some time and what you mentioned a little while back reminded me of it."

Bryce caught the hidden reference. Central Africa--and the Manoba group. So Pierce had not dismissed the mind hunter from his thoughts as a problem to be easily dealt with.

"It's still in the testing stage," Pierce added. "But some of it is circulating among medical students. The tests have interesting effects. And, as I say, tonight's a good night to experiment, it's called B'nyab i'io."

The chill in Bryce's head and spine was thawing out. "You're not conning me?" He said it with a grin, but there was an edge to the question which demanded an answer.

Pierce gave it to him, for a brief moment deadly serious. "You couldn't get addicted if you swam in it."

Bryce believed him. He stared at the glass. "What does it do to the I.Q.? We've got to collect some information here and there this evening. I want to be able to read and talk." He smiled crookedly. "No worse than usual, that is."

"Either raises the I.Q. or leaves it alone."

"What's the effect?"

"It affects different people different ways. After hearing the reports I'd like to see how it hits us." Pierce pushed it towards him, grinning. "Leave half for me."

Bryce's wary thoughts touched poison and immunity and murder, but inwardly he began to scoff at his own habits of suspicion. However, before he could reach for the glass, Pierce had given a short snort as though in recognition of his presumptuousness and drank his own share first.

Then Bryce raised the cold glass to his lips.
As he put it down he could feel the change beginning to spread through his blood, warming and relaxing, bringing closer the memories of pleasure and good times. The restaurant was now completely seductive, with the surf of voices pleasant in his ears, calling to him to join the world and its offers of uncomplicated pleasures. He felt himself blending with the ethereal background mixture of light and sound.

"I like this," he decided.

"We should take notes." Pierce was smiling as he stuffed the empty vial back in his pocket.

* * * * *

The next day Bryce looked back on that evening with pleasure. Everyone had been remarkably pleasant, friendly and considerate, and Pierce had always had the right friendly word and gesture to reward them, speaking for Bryce, knowing his way around the cities of the Moon to the right places for the information they sought, always speaking for Bryce Carter, his employer, getting him the things he wanted, giving the orders he wanted to give before Bryce had even fully realized that he wanted them. Bryce had needed to say nothing the whole time except "Right. That's it," and everything went as he wanted it.

"A perfect left hand man," he smiled, stretching, and turned the polarization dial to let in the sunlight.

The telephone rang. He picked it up and the desk clerk said in a deferentially hushed voice, "Eight o'clock, Mister Carter."

For some reason the hushed voice struck him as funny. "Thanks, I'm up." He hung up and stretched again. It was soothing to have someone solicitous that he arose on time, if only a hotel. The hotel had given him a lot of good service. He felt suddenly grateful for all the pleasures and luxuries and small services they surrounded him with. It was a good place. He was feeling good that morning. Maybe because the sun was so bright....

He liked the look of the people passing in the lobby as Pierce joined him, and he liked the look of the passengers in the tube trains on the way to the office. They all looked more friendly. And as he pushed through the second glass door into his offices he liked the clean shine of the glass and the rich blended colors and soft rugs and gray textured desks and the soft efficient hum of work in progress.

Bryce usually passed Kesby's office with a businesslike nod, but Pierce smiled in, stopping for an instant with Bryce. "Good morning, Kesby. We're glad to see you." It was true enough and expressed what he felt.

Bryce exchanged a grin with Kesby at the boy's insolence and then went on into his office.

It was a good day.

It was a good day for what he had to do.

In the luxury of his inner office he sank into the deepest, softest chair, letting his cousin-from-Montehedo sort the mail, agreeing with the boy's suggestions for action or sometimes issuing his own instructions, keeping only half his mind on the routine day's business, relying on Pierce, and concentrating the other half on the deed to be done. The plan was set in his mind but he had changes to make.

He was barely conscious of the time slipping by as he lay, rarely moving, in his chair, while Pierce worked at top speed.

By one o'clock the deck was cleared for action.

Bryce stood up, stretched, and checked his watch again. It was 1304 hours. A telephone call was scheduled in about another hour, and five more successively about a half hour apart.

"Order us some lunch, Pierce, before I lift the drawbridge."

The food came in as he was instructing his staff to leave them undisturbed for the rest of the afternoon.

By the time they had finished eating, their isolation was complete. The office was a command post now, with only the slender, unattended telephone wires connecting them with the outside worlds.

Bryce moved over behind his desk. He drew the telephone toward him and dialed a number. Somewhere, in the locked safe, the phone rang.

From the case he took a toy dial phone. Pierce's eyes were on it, his eyebrows lifted quizzically, but Bryce offered no explanation. The boy was due for a series of surprises. And when it was over, he would know everything without any explanations, and too late to interfere.

"Hi Al," Bryce said to the recorded "Yeah?" at the other end. He dialed a number on the toy dial, the one receiver against the other's back. After the usual ritual, Bryce said, "Hello George, how's everything going?"

This is it, Bryce thought. This was the first part of the final blow to UT. And the only instrument he needed in his delightfully simple method was a telephone. Originally he had planned six brief warning calls to the six key numbers of the ground organization. He would tell them to refuse to take anything from the hands of the UT branch, and break contact with them immediately after accepting cash for miscellaneous items. That would set the stage.

The police trap would close on all members of the UT branch of the organization while they were encumbered with a maximum of incriminating objects to dispose of in too little time. Then would come his anonymous tip to the police. He'd inform them that certain employees of UT in a few listed cities would be found to be smuggling in large
quantities of drugs. The thing would be so simple. And the whole works would blow up with the efficiency of the
calculated explosion of nuclear reaction.

That had been his original plan.

But things would be different now. The morning in the easy chair had changed his approach. The newer, more
elaborate program, still remarkably simple, would bring down the whole structure within UT without the help of the
police, but by himself alone, planning it, initiating it, executing it with no one's help. Not even Pierce's.

He heard himself saying:

"This is 'Hello George.' Listen to me and don't interrupt.

'Somebody has talked. I've been betrayed myself. Get that? Hello George is washed up. Right now the cops are
tapping this line. It doesn't make any difference to me, now. But it does to you. This is an open warning from Hello
George to you. Spread the word. I'll keep making calls until they break in on me and cut this line.

'Meanwhile, spread the word. Break connections with me and the whole organization. Get out of range before
the trap closes. But pass on this warning first.

'I'll hold out against questioning a short time. The police will get me eventually, of course. And when they do
they'll pump me dry. They'll get names and addresses. The whole works will get grabbed, unless you move fast.
Spread the word."

Bryce paused and winked at Pierce who was standing at his elbow, "Any questions? Yes, I'm sure. Of course
I'm sure. Any other questions? Good luck, Okay."

He hung up.

As Caesar once said, the dice were rolling.

Pierce, beside him through it all, simply stood there, his eyes wide and his face sharp with curiosity and
incredulity, his body twitching now and then from the infection of the excitement which rippled over the room. That
excitement had been there, though Bryce had not permitted himself to indulge in it in any visible way. He had
showed Pierce a new facet to his operations, one which Pierce could not anticipate immediately, one in which only
he, Bryce, could make the snap decisions and evaluate the immediate responses demanded of him.

That was with the first call.

* * * * *

With the second one Pierce began to contribute, rising to the occasion as he had so often and quickly done in
the past. He began pacing up and down between calls, smoking furiously and laughing under his breath.

"Tell 'em the police are breaking down the door," he suggested during the third call. "Say you're hypnoed to
hold out against questioning five days at the most, two hours more likely."

His suggestions were a howl. Bryce repeated them into the phone with counterfeit desperation and was
rewarded by the sounds of panic at the other end. He and Pierce chortled over the frantic queries and exclamations
from the victim. The whole thing, succinct and pointed and with the dramatic power of simplicity, was one super
practical joke which would set the entire solar system scurrying around for the next few weeks.

The ramifications would be endless. Persons would vanish abruptly and take up new names and identities in the
obscure countries, others would draw out their heavy savings and take the first rocket out from Earth. There would
be a new influx of refugees to the Belt, new settlers to be honest farmers and factory workers and repair men.

Yes, the situation was dramatic.

The day was a good day.

But as Bryce hung up on the last call, a depressing sense of calamity, unsettlingly anti-climatic, began to press
down on him. Pierce was talking about plans for the next week with an enthusiasm which should have been
completely contagious.

But there was something wrong. There was something wrong.

What was it?

Bryce felt Pierce's enthusiasm catch at him and start to sweep him away. He savored the pleased glow produced
by the shattering changes he had managed to cram into one day. With six telephone calls he had broken the drug
ring completely and forever, broken it so completely that no member of it would ever have dealings with any
member of it again. All of them were out of business, fleeing with the imaginary hounds of the law baying at their
heels.

He smiled at the thought.

And then his smile faded for some strange reason and he ceased listening to Pierce for a moment, looked away
and ceased listening, for hearing Pierce just then distracted oddly from the clarity of his thinking. He wanted to
review what he had just done.

What was wrong?

What?
He struggled with a mounting confusion, the desk top and telephones blurring as he tried to concentrate with
desperate effort.
Unexpectedly the question sprang into focus. It was as if the room turned inside out, the day turned upside
down.
He had smashed himself--not UT!
Why?
Why had he made those calls--changed his plans--and made those calls?
With the most perfect and terrible clarity he saw the results of what he had done. The organization destroyed.
The contacts he had made fifteen years ago as an anonymous young dock hand, contacts that as Bryce Carter he
could never make again--vanishing--merging with the great mass of the public--becoming gray unknown figures.
The building of years melting like a sugar castle melts into the tide--the invisible army that had obeyed his
sourceless voice without being able to blackmail or rebel, the perfectly balanced tool in his hands that could be used
for the bribing of venal politicians, with a limitless fund for the bribery, the growing secret control of the most venal
of the political machines of Earth, that by the time he needed it it would have been an irresistible weapon in his hand
for the single swift political blow that would rip the Belt from Earth control, and give it a seat on the Assembly of
the Federated Nations, and mastery of the solar system--
But as he sat there the organization dissolved.
He grasped the phone, but there was nobody to call now, no one would answer. He could never reach them
again.
This was sanity now, but what had it been before when he was cheerfully destroying his future? It seemed to
him that there were two halves to his brain, each wanting different things. For a moment the one that had controlled
the day was gone, and he was sane again, but how long would that moment last? What sign had there been when it
took control? Would he know it when it came again?
He remembered that in the tube train that morning he and Pierce had had a half joking argument about the best
short-and-merry life. One of the happy ones on the list had been the INC agent, because they spent so much of their
lives working into smuggling gangs that they had all the pleasures and profits of being a crook and an honest man
too. Was that where he had slipped his cog?
Looking back on the things he had done that day he saw that much of it had fitted an abstract pattern of justice,
as if he had been thinking of himself as an INC man. Or as if--
He thought of the things he had seen in his childhood that they had called zombies, and jeered at and tormented
without fear of any retaliation or vengeance from their gray-faced victims. Imprisoned men--they looked normal--
but they had been mentally imprisoned. Law-zombies, memorizing and following laws and being honest with a
simple and terrifying literalness.
He had not known that he had any capacity for terror.
Bryce Carter. He had his name, his identity and his memory, and they were his own. Sometimes he had had
nothing else, only the pride and strength of knowing his identity, that it was his and stronger than others, just as his
hands were stronger, a thing they couldn't take from him.
Could they? There was a nightmare he had had more than once, that he remembered suddenly for the first time,
with all its atmosphere of childish strangeness. The cop psychos were after him. He was trapped in a big room with
lights and they had his head open and were chasing him around inside his head somehow, trying to catch him, and
kill him, the him that lived in his mind.
Would he know if it was gone?
The black sharp-edged shadows of the crater walls were drawing across the landing plain outside, bringing to a
close the two weeks of daylight, and the reflected sunlight was dimming in the room. He could hear the rumble of a
heavy ship of a cargo fleet lowering in to a landing.
His assistant was sitting quietly on the edge of the desk as he had been for some time, motionlessly watching
the thin plume of smoke that rose from a cigarette in his hand. He was as still as if he were listening for some subtle
sound far away. Rocket jets flashed an orange glow through the venetian blinds and fell in stripes of orange light
across the dark young face. The brief rumble of a rocket take-off came, transmitted through the ground and the
building. Smoke curling up from the cigarette was the only motion.
"Roy, is Pierce your real name?"
The light flashed and faded in bars of orange across the young face he had thought was like his own, the boy he
had thought had come from Pop Yak. The quick deep rumble of sound came and faded in the walls around them. A
fleeting smile touched the face, and the dark eyes rested on his for a moment as Roy Pierce gave the information
casually as if it were any other information, answering the question that had been meant. "It is my mother's name. We
always take our mother's names. I am a Manoba--a Manoba of Jaracho."
IX

Looking into Bryce's face he slid to his feet slowly, ground out the stub of his cigarette and stood before the desk.

Bryce took out his gun and held it where Pierce could see it. "Are Manobas ever shot?" It was a heavy little gun, his maggy, its barrel sleek and rounded, the heavy metal warm from being worn close to the skin.

"Sometimes. It's a natural enough reaction."

It was a spaceworthy gun with adjustable velocity for driving through padded suits and pressure suits. The velocity was set high, but it would be inartistic to blow a large hole through a psychotherapist. Bryce turned the dial down slowly, watching him.

"Do the professional ethics of privacy and non-publicity cover this kind of situation?"

Pierce was smiling slightly with a touch of bitter humor. "It's undiplomatic to tell you that, but yes, the contingency is covered. There is nothing to connect myself with you as a case in any records, nor anything to identify me as a member of the Manoba group contracted by your company. The ethic of privacy is allowed to have no exceptions for the family's record."

A cool curiosity held him. "Tell me--when you saw that I was beginning to think, why didn't you just needle me down for a short nap and leave?"

The smile remained. "I am supposed to control the shock of realization, and make sure that it is assimilated without damage to the subject." His dark expressionless eyes met Bryce's, and Bryce felt the impact of them, and realized for the first time that there was the same slight bitter off-hand smile on his own lips, and inwardly the quiet ironical mood with the still clarity of a deep pool. His own mood? He hefted the gun in his hand, feeling its weight and balance. "You could have done that over the televiewer," he pointed out dispassionately. "What is the average mortality, do you know?"

"Not high. It is only inexperience that is dangerous. If one can get through one's first three or four cases, it's safe enough."

Looking back over the past days it was quite clear that Pierce had control over his emotions. Any emotion Pierce chose him to feel he would feel. It remained to be seen how much that could influence what he was going to do. The dark-skinned young man stood before the desk casually and answered questions with a slight restrained smile that set the wry irony of both their minds.

A man does what he wants. That is freedom, but what he wanted could be controlled apparently. A man is what he wants. But what he wanted could be changed. How easy had it been to change him. Bryce tried himself with a thought of the power and glory of rule, the reign and mastery of space--a goal that had warmed his thoughts for many years.

He didn't want it.

There was a numbness where there should have been emotion, and all he could feel for his loss was the resignation and the faint bitter humor permitted him by Pierce's smile. Watching that smile he shifted the heavy little gun in his hand, turning it over casually, feeling its familiar weight and the texture of its surfaces.

He spoke gently. "If you don't mind my asking, have you passed through your first three cases yet?"

"You are my first," said Roy Pierce, whom he had trusted. "I'm afraid I was clumsy."

"Oh--you did all right." Bryce shot him then, placing the bullet carefully in the pit of his stomach where it would hurt. That was for doing well. For justice. No man has the right to meddle in another man's mind.

Pierce had been starting to speak. He swayed back a half step with a flicker of change crossing his face then stood steady and smiling again. That brief grimace touched Bryce's nerves with a sensation that was like the jangle of something heavy dropped inside a piano, a sound he had heard once. But the numbness did not lift from his feelings. He was still smiling. The third bullet would be between the eyes.

The words were low and rapid but clear.

Bryce did not listen. "This is for doing a good job," he said, overriding the other voice with his own, and pulled the trigger again, placing the slug slightly lower this time, in the belly, where if it entangled in one of the spinal plexus it could hurt past belief. Pierce swayed slightly. His face went to the clay-blue color that comes to dark-skinned races when they pale. Bleeding inside somewhere, and already dead unless he were given help, Bryce figured.

For a moment Bryce saw something like effort in the dark unreadable eyes. Then suddenly Pierce smiled, his young face disarmingly innocent and merry. "Oh, come on, Bryce, it's not that serious. Be a good sport. You don't want to--"

Suddenly Bryce saw the situation as the sheerest humor, a sort of lunatic farce for the laughter of some cosmic joker. He swung the gunsights up towards the smiling face. Amusement bubbled in his blood and he heard himself laugh--heard it with a grim secondary amusement.
"The joke's on you," he said, and pulled the trigger, then laughed again. The joke was on him.

He had missed. He had missed at a distance of three feet. Yet his hand was rock-steady. Pierce's control had him. His laughter stopped as the humor in Pierce's attitude faded down again to the small wry smile that had been there from the beginning.

Bryce had not lost. He had only to wait a little and he had won. Unless Pierce could use his control to force him to call help. He set himself to resist and not to listen. There was not long to go. The expressionless dark eyes that held his were beginning to widen slightly in an effort of sight that meant that a private darkness was closing in on the psychotherapist. The rumble of distant rockets seemed louder, covering his fading voice. "It's your choice, Bryce. I give it to you. You won't want this later--Bryce--but don't--hunger to undo. It is payment enough for all--times like this--that you change--and do not--want--them any--again--" Pierce pulled in a strangling breath, swaying more visibly. "Gun," he whispered, reaching out in Bryce's direction, his eyes going sightless.

Bryce handed him the magnomatic, and watched as Pierce fumbled his hands over it, putting his prints on it blindly, his knees bending.

When he fell, Bryce picked up the phone and called Emergency. The emergency squad would be cruising around in the halls somewhere nearby, looking for the source of the three radio notes that had told them that a gun was fired.

* * * * *

"That was the last I saw of him," the young man stopped talking and looked pleased with himself.

Donahue drained his drink irritably and put it on the bar that had been set up on the ceiling when the Gs went off. It clung magnetically. "Make it the same, please." He turned to Roy Pierce, floating beside him. "Stop needling me, man, finish the story. The way you tell it, I don't know what you did, how you did it, or even whether you died or not."

"Oh, I died," said Roy Pierce. "But they revived me," he added.

"Good! I'm glad to hear that!" said Donahue more cheerfully, wondering suddenly just how extensively he was being kidded. "For a moment there you had me worried. Now explain about this treatment."

"It's called soul eating," explained the dark-skinned, straight-haired boy, "I don't think you could do it."

Donahue thought that information over carefully. "Maybe not. How's it done?"

"In the tribes of my people the soul is supposed to be an invisible double who walks at your side, protecting you and speaking silently to your mind. Its face is the face that looks out of mirrors and up from pools at you, and the shadow that walks on the ground beside you. Evildoers, after they had spoken to a Manoba, would say that their reflections were gone. Our family was called The Eaters of Souls, and all the tribes were afraid of us for nine hundred miles around."

"So am I," said Donahue compactly. "As my Yiddish grandmother on my mother's side would say, it sounds from werewolves."

"I can explain it."

"No magic?"

"Look," said the youth tersely, "Do I want to get kicked out of the FNMA? What if I had sat in a jungle circle loaded to the ears with herbs and spells, with the drums of my cousins throbbing around me, and learned the best and subtlest ways of my technique back in time looking through the eyes of my great grandfather, or conversing with his ghost. Do you think I would say so?"

"No," Donahue admitted. He edged away a little.

The youth spoke gloomily. "Rapport and intensified empathy is something you learn by exposing yourself to mirrors. The technique is published, known and accepted among psychologists, but most of them just don't try. It backfires too easily, and it takes too high a level of skill. It originated with my family."

"What I do is obvious enough if I make it so. It's simply prior mimicry. I watch the trend of what goes on in his thoughts, and express approximately what he is feeling and thinking a little before he does. So that presently, subconsciously he is depending on me to tell him what he thinks and how he feels.

"I was his mirror, his prior mirror. I am a clear, expressive underplaying actor as an actor, and each shade of reaction is separate and unmistakable. The subconscious is not rational, but it generalizes from regularities that the conscious mind never has the subtlety to notice. It saw me consistently representing its own internal reactions, hour after hour in every situation more clearly than Bryce ever saw himself express anything in a mirror, and more steadily than he ever saw any mirror. The subconscious then associated the inside emotion with the corresponding outside image for each one. I became Bryce's subconscious self image. When he thinks of doing anything, the image in the imagination that does it is not himself, it is me. This can cause considerable mental confusion."

"It should!" Donahue agreed fervently.

"I put him in new places and situations where he was unsure and I was sure, so that when I diverged from
mirroring him, he gave me the lead and mirrored me. One of us had to be the originator and the other the reflection, but now it was reversed. He did not fight it subconsciously because the results were pleasant. I kept the lead and led him a mental dance through thoughts and reactions he had never had before, in a personality pattern completely foreign to his own, one that I wanted him to have. I haven't been hired for that, but I had time to pass before I could untangle that UT problem, and I wanted to do it for him. The mirror link was complete the first day, but I'm afraid the extra days made it indelible. He'll always be me in his mind, and mirrors will never look right to him."

* * * * *

"It's so simple, it's obvious," said Donahue with disappointment. "It doesn't sound like magic to me."

The youth was thoughtful, frowning. "Sometimes it doesn't to me either. I wonder if the ghost of my grandfather was telling me the right--"

"Forget the ghost of your grandfather," Donahue interrupted hastily. On his few space trips he could never get used to this business of floating eerily around in the air, and it seemed a poor time to talk about ghosts. "What about Bryce Carter. What became of him? You know," he said defiantly, "I like his plans for organizing the Belt and breaking UT. And, come to think of it, if I had been there when you were interfering with that, I think I would have shot you myself."

"UT had only hired me to find the organizer of the smuggling ring and persuade him to disband his organization in UT. I had done that. So the third day, when I could walk, I left the hospital and went back to Earth, and collected my fee for a job done. Many people had vanished suddenly from their payrolls, and the crime statistics in some cities had shown a startling lull. They knew I had done it, and so they paid and were grateful." The dark youth shrugged. "I didn't feel I had to tell them about Orillo. He tipped the police and started a rumor, and there was evidence enough in the crime statistics of the months before, when they were correlated with the distribution of branches of Union Transport, though there was nothing to point at anyone in particular except the ones who had disappeared."

Donahue remembered. "Sure that's that investigation of transportation monopolies that raised such a stink last year. I saw part of it in Congress."

Pierce handed him a travel folder. Gaudily illustrated, it advertised the advantages of the C&O lines for space tourists. "Carter and Orillo."

Donahue looked up, puzzled, "But this is the next step in what he planned. I thought you changed him."

"Mahatma Gandhi would have followed out those plans," Pierce said with a touch of grimness. "As you pointed out, they are attractive. But I changed him. I won't give you personality dynamics, but if you want a list of changes--He's married to Sheila Wesley, that's one change. And instead of going home nights he roisters around in bars and restaurants, talking to everybody, listening to everybody, liking them all and enthusiastically making friends in carload lots. That's another change. He doesn't look into mirrors because they make him feel cross-eyed. That's because he unconsciously expects to see me in the mirror. And he will organize the Belt and be president as he planned. I won't stop him in that. The difference will be that he won't want the power he'll get."

"A power-lusting man can never be trusted with power: he goes megalomaniacal. Carter was already halfway there. But he's safe from that now. He's going to be given plenty of power, and see it only as responsibility, and not want it. That's the only safe kind of man to have in a powerful position."

"That--" said Donahue with great earnestness, "--is like sending a poor damned soul to Kismatic paradise as a eunuch. You psychologists are all complete sadists," he said lifting his drink. "I suppose you've put something in my drink?"

"Absolutely nothing," Roy Pierce assured him, grinning. "Funny thing was, when I got back to Earth that time, I kept feeling cross-eyed when I looked into a mirror. And my friends said I was not myself. If I was not myself, I knew I must still be Bryce Carter. Things had seemed different, and they had warned me that the technique sometimes backfired when I was learning. So I called my uncle Mordand on the televviewer--he's the head of the family, and he lives in an estate in the jungle--and he--"

Donahue was fascinated again.

There was a different approach for each case, Pierce had found. It was not ordinarily ethical to discuss any case history, but he knew with great surety that Donahue could be trusted not to repeat what he was being told. The only reason there wasn't something extra in his current drink was because there had been something in the last drink.

This was case five.
THE TALKATIVE TREE
By H. B. Fyfe

Dang vines! Beats all how some plants have no manners--but what do you expect, when they used to be men!

All things considered--the obscure star, the undetermined damage to the stellar drive and the way the small planet's murky atmosphere defied precision scanners--the pilot made a reasonably good landing. Despite sour feelings for the space service of Haurtoz, steward Peter Kolin had to admit that casualties might have been far worse.

Chief Steward Slichow led his little command, less two third-class ration keepers thought to have been trapped in the lower hold, to a point two hundred meters from the steaming hull of the Peace State. He lined them up as if on parade. Kolin made himself inconspicuous.

"Since the crew will be on emergency watches repairing the damage," announced the Chief in clipped, aggressive tones, "I have volunteered my section for preliminary scouting, as is suitable. It may be useful to discover temporary sources in this area of natural foods."

Volunteered HIS section! thought Kolin rebelliously.

Like the Supreme Director of Haurtoz! Being conscripted into this idiotic space fleet that never fights is bad enough without a tin god on jets like Slichow!

Prudently, he did not express this resentment overtly.

His well-schooled features revealed no trace of the idea--or of any other idea. The Planetary State of Haurtoz had been organized some fifteen light-years from old Earth, but many of the home world's less kindly techniques had been employed. Lack of complete loyalty to the state was likely to result in a siege of treatment that left the subject suitably "re-personalized." Kolin had heard of instances wherein mere unenthusiastic posture had betrayed intentions to harbor treasonable thoughts.

"You will scout in five details of three persons each," Chief Slichow said. "Every hour, each detail will send one person in to report, and he will be replaced by one of the five I shall keep here to issue rations."

Kolin permitted himself to wonder when anyone might get some rest, but assumed a mildly willing look. (Too eager an attitude could arouse suspicion of disguising an improper viewpoint.) The maintenance of a proper viewpoint was a necessity if the Planetary State were to survive the hostile plots of Earth and the latter's decadent colonies. That, at least, was the official line.

Kolin found himself in a group with Jak Ammet, a third cook, and Eva Yrtok, powdered foods storekeeper. Since the crew would be eating packaged rations during repairs, Yrtok could be spared to command a scout detail.

Each scout was issued a rocket pistol and a plastic water tube. Chief Slichow emphasized that the keepers of rations could hardly, in an emergency, give even the appearance of favoring themselves in regard to food. They would go without. Kolin maintained a standard expression as the Chief's sharp stare measured them.

Yrtok, a dark, lean-faced girl, led the way with a quiet monosyllable. She carried the small radio they would be permitted to use for messages of utmost urgency. Ammet followed, and Kolin brought up the rear.

To reach their assigned sector, they had to climb a forbidding ridge of rock within half a kilometer. Only a sparse creeper grew along their way, its elongated leaves shimmering with bronze-green reflections against a stony surface; but when they topped the ridge a thick forest was in sight.

Yrtok and Ammet paused momentarily before descending.

Kolin shared their sense of isolation. They would be out of sight of authority and responsible for their own actions. It was a strange sensation.

They marched down into the valley at a brisk pace, becoming more aware of the clouds and atmospheric haze. Distant objects seemed blurred by the mist, taking on a somber, brooding grayness. For all Kolin could tell, he and the others were isolated in a world bounded by the rocky ridge behind them and a semi-circle of damp trees and bushes several hundred meters away. He suspected that the hills rising mistily ahead were part of a continuous slope, but could not be sure.

Yrtok led the way along the most nearly level ground. Low creepers became more plentiful, interspersed with scruffy thickets of tangled, spike-armored bushes. Occasionally, small flying things flickered among the foliage. Once, a shrub puffed out an enormous cloud of tiny spores.

"Be a job to find anything edible here," grunted Ammet, and Kolin agreed.

Finally, after a longer hike than he had anticipated, they approached the edge of the deceptively distant forest.
Yrtok paused to examine some purple berries glistening dangerously on a low shrub. Kolin regarded the trees with misgiving.

"Looks as tough to get through as a tropical jungle," he remarked.

"I think the stuff puts out shoots that grow back into the ground to root as they spread," said the woman.

"Maybe we can find a way through."

In two or three minutes, they reached the abrupt border of the odd-looking trees.

Except for one thick trunked giant, all of them were about the same height. They craned their necks to estimate the altitude of the monster, but the top was hidden by the wide spread of branches. The depths behind it looked dark and impenetrable.

"We'd better explore along the edge," decided Yrtok. "Ammet, now is the time to go back and tell the Chief which way we're--Ammet!"

Kolin looked over his shoulder. Fifty meters away, Ammet sat beside the bush with the purple berries, utterly relaxed.

"He must have tasted some!" exclaimed Kolin. "I'll see how he is."

He ran back to the cook and shook him by the shoulder. Ammet's head lolled loosely to one side. His rather heavy features were vacant, lending him a doped appearance. Kolin straightened up and beckoned to Yrtok.

"Hope she didn't eat some stupid thing too!" he grumbled, trotting back.

As he reached her, whatever Yrtok was examining came to life and scooted into the underbrush with a flash of greenish fur. All Kolin saw was that it had several legs too many.

He pulled Yrtok to her feet. She pawed at him weakly, eyes as vacant as Ammet's. When he let go in sudden horror, she folded gently to the ground. She lay comfortably on her side, twitching one hand as if to brush something away.

When she began to smile dreamily, Kolin backed away.

* * * * *

The corners of his mouth felt oddly stiff; they had involuntarily drawn back to expose his clenched teeth. He glanced warily about, but nothing appeared to threaten him.

"It's time to end this scout," he told himself. "It's dangerous. One good look and I'm jetting off! What I need is an easy tree to climb."

He considered the massive giant. Soaring thirty or forty meters into the thin fog and dwarfing other growth, it seemed the most promising choice.

At first, Kolin saw no way, but then the network of vines clinging to the rugged trunk suggested a route. He tried his weight gingerly, then began to climb.

"I should have brought Yrtok's radio," he muttered. "Oh, well, I can take it when I come down, if she hasn't snapped out of her spell by then. Funny ... I wonder if that green thing bit her."

Footholds were plentiful among the interlaced lianas. Kolin progressed rapidly. When he reached the first thick limbs, twice head height, he felt safer.

Later, at what he hoped was the halfway mark, he hooked one knee over a branch and paused to wipe sweat from his eyes. Peering down, he discovered the ground to be obscured by foliage.

"I should have checked from down there to see how open the top is," he mused. "I wonder how the view will be from up there?"

"Depends on what you're looking for, Sonny!" something remarked in a soughing wheeze.

Kolin, slipping, grabbed desperately for the branch. His fingers clutched a handful of twigs and leaves, which just barely supported him until he regained a grip with the other hand.

The branch quivered resentfully under him.

"Careful, there!" whooshed the eerie voice. "It took me all summer to grow those!"

Kolin could feel the skin crawling along his backbone.

"Who are you?" he gasped.

The answering sigh of laughter gave him a distinct chill despite its suggestion of amiability.

"Name's Johnny Ashlew. Kinda thought you'd start with what I am. Didn't figure you'd ever seen a man grown into a tree before."

Kolin looked about, seeing little but leaves and fog.

"I have to climb down," he told himself in a reasonable tone. "It's bad enough that the other two passed out without me going space happy too."

"What's your hurry?" demanded the voice. "I can talk to you just as easy all the way down, you know. Airholes in my bark--I'm not like an Earth tree."
Kolin examined the bark of the crotch in which he sat. It did seem to have assorted holes and hollows in its rough surface.

"I never saw an Earth tree," he admitted. "We came from Haurtoz."

"Where's that? Oh, never mind--some little planet. I don't bother with them all, since I came here and found out I could be anything I wanted."

"What do you mean, anything you wanted?" asked Kolin, testing the firmness of a vertical vine.

"Just what I said," continued the voice, sounding closer in his ear as his cheek brushed the ridged bark of the tree trunk. "And, if I do have to remind you, it would be nicer if you said 'Mr. Ashlew,' considering my age."

"Your age? How old--?"

"Can't really count it in Earth years any more. Lost track. I always figured bein' a tree was a nice, peaceful life; and when I remembered how long some of them live, that settled it. Sonny, this world ain't all it looks like."

"It isn't, Mr. Ashlew?" asked Kolin, twisting about in an effort to see what the higher branches might hide.

"Nope. Most everything here is run by the Life--that is, by the thing that first grew big enough to do some thinking, and set its roots down all over until it had control. That's the outskirts of it down below."

"The other trees? That jungle?"

"It's more'n a jungle, Sonny. When I landed here, along with the others from the Arcturan Spark, the planet looked pretty empty to me, just like it must have to--Watch it, there, Boy! If I didn't twist that branch over in time, you'd be bouncing off my roots right now!"

"Th-thanks!" grunted Kolin, hanging on grimly.

"Doggone vine!" commented the windy whisper. "He ain't one of my crowd. Landed years later in a ship from some star towards the center of the galaxy. You should have seen his looks before the Life got in touch with his mind and set up a mental field to help him change form. He looks twice as good as a vine!"

"He's very handy," agreed Kolin politely. He groped for a foothold.

"Well ... matter of fact, I can't get through to him much, even with the Life's mental field helping. Guess he started living with a different way of thinking. It burns me. I thought of being a tree, and then he came along to take advantage of it!"

Kolin braced himself securely to stretch tiring muscles.

"Maybe I'd better stay a while," he muttered. "I don't know where I am."

"You're about fifty feet up," the sighing voice informed him. "You ought to let me tell you how the Life helps you change form. You don't have to be a tree."

"No?"

"Uh-uh! Some of the boys that landed with me wanted to get around and see things. Lots changed to animals or birds. One even stayed a man--on the outside anyway. Most of them have to change as the bodies wear out, which I don't, and some made bad mistakes tryin' to be things they saw on other planets."

"I wouldn't want to do that, Mr. Ashlew."

"There's just one thing. The Life don't like taking chances on word about this place gettin' around. It sorta believes in peace and quiet. You might not get back to your ship in any form that could tell tales."

"Listen!" Kolin blurted out. "I wasn't so much enjoying being what I was that getting back matters to me!"

"Don't like your home planet, whatever the name was?"

"Haurtoz. It's a rotten place. A Planetary State! You have to think and even look the way that's standard thirty hours a day, asleep or awake. You get scared to sleep for fear you might dream treason and they'd find out somehow."

"Whoeee! Heard about them places. Must be tough just to live."

Suddently, Kolin found himself telling the tree about life on Haurtoz, and of the officially announced threats to the Planetary State's planned expansion. He dwelt upon the desperation of having no place to hide in case of trouble with the authorities. A multiple system of such worlds was agonizing to imagine.

* * * * *

Somehow, the oddity of talking to a tree wore off. Kolin heard opinions spouting out which he had prudently kept bottled up for years.

The more he talked and stormed and complained, the more relaxed he felt.

"If there was ever a fellow ready for this planet," decided the tree named Ashlew, "you're it, Sonny! Hang on there while I signal the Life by root!"

Kolin sensed a lack of direct attention. The rustle about him was natural, caused by an ordinary breeze. He noticed his hands shaking.

"Don't know what got into me, talking that way to a tree," he muttered. "If Yrtok snapped out of it and heard,
I'm as good as re-personalized right now."

As he brooded upon the sorry choice of arousing a search by hiding where he was or going back to bluff things out, the tree spoke.

"Maybe you're all set, Sonny. The Life has been thinkin' of learning about other worlds. If you can think of a safe form to jet off in, you might make yourself a deal. How'd you like to stay here?"

"I don't know," said Kolin. "The penalty for desertion--"

"Whoosh! Who'd find you? You could be a bird, a tree, even a cloud."

Silenced but doubting, Kolin permitted himself to try the dream on for size.

He considered what form might most easily escape the notice of search parties and still be tough enough to live a long time without renewal. Another factor slipped into his musings: mere hope of escape was unsatisfying after the outburst that had defined his fuming hatred for Haurtoz.

I'd better watch myself! he thought. Don't drop diamonds to grab at stars!

"What I wish I could do is not just get away but get even for the way they make us live ... the whole damn set-up. They could just as easy make peace with the Earth colonies. You know why they don't?"

"Why?" wheezed Ashlew.

"They're scared that without talk of war, and scouting for Earth fleets that never come, people would have time to think about the way they have to live and who's running things in the Planetary State. Then the gravy train would get blown up--and I mean blown up!"

The tree was silent for a moment. Kolin felt the branches stir meditatively. Then Ashlew offered a suggestion.

"I could tell the Life your side of it," he hissed. "Once in with us, you can always make thinking connections, no matter how far away. Maybe you could make a deal to kill two birds with one stone, as they used to say on Earth...."

* * * * *

Chief Steward Slichow paced up and down beside the ration crate turned up to serve him as a field desk. He scowled in turn, impartially, at his watch and at the weary stewards of his headquarters detail. The latter stumbled about, stacking and distributing small packets of emergency rations.

The line of crewmen released temporarily from repair work was transient as to individuals but immutable as to length. Slichow muttered something profane about disregard of orders as he glared at the rocky ridges surrounding the landing place.

He was so intent upon planning greetings with which to favor the tardy scouting parties that he failed to notice the loose cloud drifting over the ridge.

It was tenuous, almost a haze. Close examination would have revealed it to be made up of myriads of tiny spores. They resembled those cast forth by one of the bushes Kolin's party had passed. Along the edges, the haze faded raggedly into thin air, but the units evidently formed a cohesive body. They drifted together, approaching the men as if taking intelligent advantage of the breeze.

One of Chief Slichow's staggering flunkies, stealing a few seconds of relaxation on the pretext of dumping an armful of light plastic packing, wandered into the haze.

He froze.

After a few heartbeats, he dropped the trash and stared at ship and men as if he had never seen either. A hail from his master moved him.

"Coming, Chief!" he called but, returning at a moderate pace, he murmured, "My name is Frazer. I'm a second assistant steward. I'll think as Unit One."

Throughout the cloud of spores, the mind formerly known as Peter Kolin congratulated itself upon its choice of form.

Nearer to the original shape of the Life than Ashlew got, he thought.

He paused to consider the state of the tree named Ashlew, half immortal but rooted to one spot, unable to float on a breeze or through space itself on the pressure of light. Especially, it was unable to insinuate any part of itself into the control center of another form of life, as a second spore was taking charge of the body of Chief Slichow at that very instant.

There are not enough men, thought Kolin. Some of me must drift through the airlock. In space, I can spread through the air system to the command group.

Repairs to the Peace State and the return to Haurtoz passed like weeks to some of the crew but like brief moments in infinity to other units. At last, the ship parted the air above Headquarters City and landed.

The unit known as Captain Theodor Kessel hesitated before descending the ramp. He surveyed the field, the city and the waiting team of inspecting officers.

"Could hardly be better, could it?" he chuckled to the companion unit called Security Officer Tarth.
"Hardly, sir. All ready for the liberation of Haurtoz."
"Reformation of the Planetary State," mused the captain, smiling dreamily as he grasped the handrail. "And then--formation of the Planetary Mind!"
Just because a man can do something others can't does not, unfortunately, mean he knows how to do it. One man could eat the native fruit and live ... but how?

"And that," said Colonel Fennister glumly, "appears to be that."

The pile of glowing coals that had been Storage Shed Number One was still sending up tongues of flame, but they were nothing compared with what they'd been half an hour before.

"The smoke smells good, anyway," said Major Grodski, sniffing appreciatively.

The colonel turned his head and glowered at his adjutant.

"There are times, Grodski, when your sense of humor is out of place."

"Yes, sir," said the major, still sniffing. "Funny thing for lightning to do, though. Sort of a dirty trick, you might say."

"You might," growled the colonel. He was a short, rather roundish man, who was forever thankful that the Twentieth Century predictions of skin-tight uniforms for the Space Service had never come true. He had round, pleasant, blue eyes, a rather largish nose, and a rumbling basso voice that was a little surprising the first time you heard it, but which seemed to fit perfectly after you knew him better.

Right at the moment, he was filing data and recommendations in his memory, where they would be instantly available for use when he needed them. Not in a physical file, but in his own mind.

All right, Colonel Fennister, he thought to himself, just what does this mean--to me? And to the rest?

The Space Service was not old. Unlike the Air Service, the Land Service, or the Sea Service, it did not have centuries or tradition behind it. But it had something else. It had something that none of the other Services had--Potential.

In his own mind, Colonel Fennister spelled the word with an upper case P, and put the word in italics. It was, to him, a more potent word than any other in the Universe.

Potential.
Potential!
[Illustration]

Because the Space Service of the United Earth had more potential than any other Service on Earth. How many seas were there for the Sea Service to sail? How much land could the Land Service march over? How many atmospheres were there for the Air Service to conquer?

Not for any of those questions was there an accurate answer, but for each of those questions, the answer had a limit. But how much space was there for the Space Service to conquer?

Colonel Fennister was not a proud man. He was not an arrogant man. But he did have a sense of destiny; he did have a feeling that the human race was going somewhere, and he did not intend that that feeling should become totally lost to humanity.

Potential.

Definition: Potential; that which has a possibility of coming into existence.

No, more than that. That which has a--

* * * * *

He jerked his mind away suddenly from the thoughts which had crowded into his forebrain.

What were the chances that the first expedition to Alphegar IV would succeed? What were the chances that it would fail?

And (Fennister grinned grimly to himself) what good did it do to calculate chances after the event had happened?

Surrounding the compound had been a double-ply, heavy-gauge, woven fence. It was guaranteed to be able to stop a diplodocus in full charge; the electric potential (potential! That word again!) great enough to carbonize anything smaller than a blue whale. No animal on Alphegar IV could possibly get through it.

And none had.

Trouble was, no one had thought of being attacked by something immensely greater than a blue whale, especially since there was no animal larger than a small rhino on the whole planet. Who, after all, could have expected an attack by a blind, uncaring colossus--a monster that had already been dying before it made its attack?
Because no one had thought of the forest.
The fact that the atmospheric potential—the voltage and even the amperage difference between the low-hanging clouds and the ground below—was immensely greater than that of Earth, that had already been determined. But the compound and the defenses surrounding it had already been compensated for that factor.

Who could have thought that a single lightning stroke through one of the tremendous, twelve-hundred-foot trees that surrounded the compound could have felled it? Who could have predicted that it would topple toward the compound itself?

That it would have been burning—that was something that could have been guaranteed, had the idea of the original toppling been considered. Especially after the gigantic wooden life-thing had smashed across the double-ply fence, thereby adding man-made energy to its already powerful bulk and blazing surface.

But—that it would have fallen across Storage Shed Number One? Was that predictable?

Fennister shook his head slowly. No. It wasn't. The accident was simply that—an accident. No one was to blame; no one was responsible.

Except Fennister. He was responsible. Not for the accident, but for the personnel of the expedition. He was the Military Officer; he was the Man In Charge of Fending Off Attack.

And he had failed.

Because that huge, blazing, stricken tree had toppled majestically down from the sky, crashing through its smaller brethren, to come to rest on Storage Shed Number One, thereby totally destroying the majority of the food supply.

There were eighty-five men on Alphegar IV, and they would have to wait another six months before the relief ship came.

And they didn't have food enough to make it, now that their reserve had been destroyed.

Fennister growled something under his breath.

"What?" asked Major Grodski, rather surprised at his superior's tone.

"I said: 'Water, water, everywhere—', that's what I said."

Major Grodski looked around him at the lush forest which surrounded the double-ply fence of the compound.

"Yeah," he said. "'Nor any drop to drink.' But I wish one of those boards had shrunk—say, maybe, a couple hundred feet."

"I'm going back to my quarters," Fennister said. "I'll be checking with the civilian personnel. Let me know the total damage, will you?"

The major nodded. "I'll let you know, sir. Don't expect good news."

"I won't," said Colonel Fennister, as he turned.

* * * * *

The colonel let his plump bulk sag forward in his chair, and he covered his hands with his eyes. "I can imagine all kinds of catastrophes," he said, with a kind of hysterical glumness, "but this has them all beat."

Dr. Pilar stroked his, short, gray, carefully cultivated beard. "I'm afraid I don't understand. We could all have been killed."

"A fighting outfit, suppose, has enough ammunition to stand off two more attacks; but they know that there will be reinforcements within four days. Unfortunately, the enemy can attack more than twice before help comes. Help will come too late."

"Or, it could be that they have enough water to last a week, but help won't come for a month."

"You follow me, I'm sure. The point, in so far as it concerns us, is that we have food for about a month, but we
won't get help before six months have passed. We know help is coming, but we won't be alive to see it."

Then his eyes lit up in a kind of half hope. "Unless the native flora--"

But even before he finished, he could see the look in Dr. Pilar's eyes.

* * * * *

Broderick MacNeil was a sick man. The medical officers of the Space Service did not agree with him in toto, but MacNeil was in a position to know more about his own state of health than the doctors, because it was, after all, he himself who was sick.

Rarely, of course, did he draw the attention of the medical officers to his ever-fluctuating assortment of aches, pains, signs, symptoms, malaises, and malfunctions. After all, it wouldn't do for him to be released from the Service on a Medical Discharge. No, he would suffer in silence for the sake of his chosen career--which, apparently, was to be a permanent Spaceman 2nd Class.

Broderick MacNeil had never seen his medical record, and therefore did not know that, aside from mention of the normal slight defects which every human body possesses, the only note on the records was one which said: "Slight tendency toward hypochondria, compensated for by tendency to immerse self in job at hand. According to psych tests, he can competently handle positions up to Enlisted Space Officer 3rd Class, but positions of ESO/2 and above should be carefully considered. (See Psych Rept. Intelligence Sectn.)"

But, if MacNeil did not know what the medics thought of him, neither did the medics know what he thought of them. Nor did they know that MacNeil carried a secret supply of his own personal palliatives, purgatives and poly-purpose pills. He kept them carefully concealed in a small section of his space locker, and had labeled them all as various vitamin mixtures, which made them seem perfectly legal, and which was not too dishonest, since many of them were vitamins.

On the morning after the fire, he heaved his well-muscled bulk out of bed and scratched his scalp through the close-cropped brown hair that covered his squarish skull. He did not feel well, and that was a fact. Of course, he had been up half the night fighting the blaze, and that hadn't helped any. He fancied he had a bit of a headache, and his nerves seemed a little jangled. His insides were probably in their usual balky state. He sighed, wished he were in better health, and glanced around at the other members of the company as they rose grumpily from their beds.

He sighed again, opened his locker, took out his depilator, and ran it quickly over his face. Then, from his assortment of bottles, he began picking over his morning dosage. Vitamins, of course; got to keep plenty of vitamins in the system, or it goes all to pot on you. A, B1, B2, B12, C, ... and on down the alphabet and past it to A-G. All-purpose mineral capsules, presumably containing every element useful to the human body and possibly a couple that weren't. Two APC capsules. (Aspirin-Phenacetin-Caffeine. He liked the way those words sounded; very medicinal.) A milk-of-magnesia tablet, just in case. A couple of patent-mixture pills that were supposed to increase the bile flow. (MacNeil wasn't quite sure what bile was, but he was quite sure that its increased flow would work wonders within.) A largish tablet of sodium bicarbonate to combat excess gastric acidity--obviously a horrible condition, whatever it was. He topped it all off with a football-shaped capsule containing Liquid Glandolene--"Guards the system against glandular imbalance!"--and felt himself ready to face the day. At least, until breakfast.

He slipped several bottles into his belt-pak after he had put on his field uniform, so that he could get at them at mealtimes, and trudged out toward the mess hall to the meager breakfast that awaited him.

* * * * *

"Specifically," said Colonel Fennister, "what we want to know is: What are our chances of staying alive until the relief ship comes?"

He and most of the other officers were still groggy-eyed, having had too much to do to even get an hour's sleep the night before. Only the phlegmatic Major Grodski looked normal; his eyes were always about half closed.

Captains Jones and Bellwether, in charge of A and B Companies respectively, and their lieutenants, Mawkey and Yutang, all looked grim and irritable.

The civilian components of the policy group looked not one whit better. Dr. Pilar had been worriedly rubbing at his face, so that his normally neat beard had begun to take on the appearance of a ruptured mohair sofa; Dr. Petrelli, the lean, waspish chemist, was nervously trimming his fingernails with his teeth: and the M.D., Dr. Smathers, had a hangdog expression on his pudgy face and had begun drumming his fingers in a staccato tattoo on his round belly.

Dr. Pilar tapped a stack of papers that lay before him on the long table at which they were all seated. "I have Major Grodski's report on the remaining food. There is not enough for all of us to live, even on the most extended rations. Only the strongest will survive."

Colonel Fennister scowled. "You mean to imply that we'll be fighting over the food like animals before this is over? The discipline of the Space Service--"

His voice was angry, but Dr. Pilar cut him off. "It may come to fighting, colonel, but, even if perfect discipline is maintained, what I say will still be true. Some will die early, leaving more food for the remaining men. It has been
a long time since anything like this has happened on Earth, but it is not unknown in the Space Service annals."
The colonel pursed his lips and kept his silence. He knew that what the biologist said was true.
"The trouble is," said Petrelli snappishly, "that we are starving in the midst of plenty. We are like men
marooned in the middle of an ocean with no water; the water is there, but it's undrinkable."
"That's what I wanted to get at," said Colonel Fennister. "Is there any chance at all that we'll find an edible
plant or animal on this planet?"
The three scientists said nothing, as if each were waiting for one of the others to speak.

* * * * *
All life thus far found in the galaxy had had a carbon-hydrogen-oxygen base. Nobody'd yet found any silicon
based life, although a good many organisms used the element. No one yet had found a planet with a halogen
atmosphere, and, although there might be weird forms of life at the bottom of the soupy atmospheres of the
methane-ammonia giants, no brave soul had ever gone down to see--at least, not on purpose, and no information had
ever come back.

But such esoteric combinations are not at all necessary for the postulation of wildly variant life forms. Earth
itself was prolific in its variations; Earthlike planets were equally inventive. Carbon, hydrogen, and oxygen, plus
varying proportions of phosphorus, potassium, iodine, nitrogen, sulfur, calcium, iron, magnesium, manganese, and
strontium, plus a smattering of trace elements, seem to be able to cook up all kinds of life under the strangest
imaginable conditions.

Alphegar IV was no different than any other Earth-type planet in that respect. It had a plant-dominated ecology;
the land areas were covered with gigantic trees that could best be described as crosses between a California sequoia
and a cycad, although such a description would have made a botanist sneer and throw up his hands. There were
enough smaller animals to keep the oxygen-carbon-dioxide cycle nicely balanced, but the animals had not evolved
anything larger than a rat, for some reason. Of course, the sea had evolved some pretty huge monsters, but the camp
of the expedition was located a long way from the sea, so there was no worry from that quarter.

At the time, however, the members of the expedition didn't know any of that information for sure. The probe
teams had made spot checks and taken random samples, but it was up to the First Analytical Expedition to make
sure of everything.

And this much they had discovered: The plants of Alphegar IV had a nasty habit of killing test animals.

* * * * *
"Of course," said Dr. Pilar, "we haven't tested every plant yet. We may come across something."
"What is it that kills the animals?" asked young Captain Bellwether.
"Poison," said Major Grodski.
Pilar ignored him. "Different things. Most of them we haven't been able to check thoroughly. We found some
vines that were heavily laced with cyanide, and there were recognizable alkaloids in several of the shrubs, but most
of them are not that direct. Like Earth plants, they vary from family to family; the deadly nightshade is related to
both the tobacco plant and the tomato."
He paused a moment, scratching thoughtfully at his beard.
"Tell you what; let's go over to the lab, and I'll show you what we've found so far."
Colonel Fennister nodded. He was a military man, and he wasn't too sure that the scientists' explanations would
be very clear, but if there was information to be had, he might as well make the most of it.

* * * * *
SM/2 Broderick MacNeil kept a firm grip on his blast rifle and looked around at the surrounding jungle,
meanwhile thanking whatever gods there were that he hadn't been put on the fence-mending detail. Not that he
objected violently to work, but he preferred to be out here in the forest just now. Breakfast hadn't been exactly
filling, and he was hungry.

Besides, this was his pet detail, and he liked it. He had been going out with the technicians ever since the base
had been finished, a couple of weeks before, and he was used to the work. The biotechnicians came out to gather
specimens, and it was his job, along with four others, to guard them--make sure that no wild animal got them while
they were going about their duties. It was a simple job, and one well suited to MacNeil's capacities.

He kept an eye on the technicians. They were working on a bush of some kind that had little thorny-looking
nuts on it, clipping bits off here and there. He wasn't at all sure what they did with all those little pieces and bits, but
that was none of his business, anyway. Let the brains take care of that stuff; his job was to make sure they weren't
interrupted in whatever it was they were doing. After watching the three technicians in total incomprehension for a
minute or so, he turned his attention to the surrounding forest. But he was looking for a plant, not an animal.

And he finally saw what he was looking for.
The technicians paid him no attention. They rarely did. They had their job, and he had his. Of course, he didn't
He didn't know what the name of the tree was. He'd asked a technician once, and the tech had said that the tree
didn't have any name yet. Personally, MacNeil thought it was silly for a thing not to have a name. Hell, everything
had a name.

But, if they didn't want to tell him what it was, that was all right with him, too. He called it a banana-pear tree.
Because that's what the fruit reminded him of.
The fruit that hung from the tree were six or eight inches long, fat in the middle, and tapering at both ends. The
skin was a pale chartreuse in color, with heliotrope spots.

MacNeil remembered the first time he'd seen one, the time he'd asked the tech what its name was. The tech had
been picking some of them and putting them into plastic bags, and the faint spark of MacNeil's dim curiosity had
been brought to feebly flickering life.

"Hey, Doc," he'd said, "whatcha gonna do with them things?"
"Take 'em to the lab," said the technician, engrossed in his work.
MacNeil had digested that carefully. "Yeah?" he'd said at last. "What for?"
The technician had sighed and popped another fruit into a bag. He had attempted to explain things to Broderick
MacNeil before and given it up as a bad job. "We just feed 'em to the monkeys, Mac, that's all."
"Oh," said Broderick MacNeil.
Well, that made sense, anyhow. Monkeys got to eat something, don't they? Sure. And he had gazed at the fruit
in interest.

Fresh fruit was something MacNeil missed. He'd heard that fresh fruit was necessary for health, and on Earth
he'd always made sure that he had plenty of it. He didn't want to get sick. But they didn't ship fresh fruit on an
interstellar expedition, and MacNeil had felt vaguely apprehensive about the lack.

Now, however, his problems were solved. He knew that it was strictly against regulations to eat native fruit
until the brass said so, but that didn't worry him too much. He'd heard somewhere that a man can eat anything a
monkey can, so he wasn't worried about it. So he'd tried one. It tasted fine, something like a pear and something like
a banana, and different from either. It was just fine.

Since then, he'd managed to eat a couple every day, so's to get his fresh fruit. It kept him healthy. Today,
though, he needed more than just health; he was hungry, and the banana-pears looked singularly tempting.

When he reached the tree, he turned casually around to see if any of the others were watching. They weren't,
but he kept his eye on them while he picked several of the fruit. Then he turned carefully around, and, with his back
to the others, masking his movements with his own body, he began to munch contentedly on the crisp flesh of the
banana-pears.

"Now, take this one, for instance," said Dr. Pilar. He was holding up a native fruit. It bulged in the middle, and
had a chartreuse rind with heliotrope spots on it. "It's a very good example of exactly what we're up against. Ever
since we discovered this particular fruit, we've been interested in it because the analyses show that it should be an
excellent source of basic food elements. Presumably, it even tastes good; our monkeys seemed to like it."

"What's the matter with it, then?" asked Major Grodski, eying the fruit with sleepy curiosity.
Dr. Pilar gave the thing a wry look and put it back in the specimen bag. "Except for the fact that it has killed
every one of our test specimens, we don't know what's wrong with it."

Colonel Fennister looked around the laboratory at the cages full of chittering animals--monkeys, white mice,
rats, guinea pigs, hamsters, and the others. Then he looked back at the scientist. "Don't you know what killed them?"
Pilar didn't answer; instead, he glanced at Dr. Smathers, the physician.
Smathers steepled his fingers over his abdomen and rubbed his fingertips together. "We're not sure. Thus far, it
looks as though death was caused by oxygen starvation in the tissues."

"Some kind of anemia?" hazarded the colonel.
Smathers frowned. "The end results are similar, but there is no drop in the hemoglobin--in fact, it seems to rise
a little. We're still investigating that. We haven't got all the answers yet, by any means, but since we don't quite
know what to look for, we're rather hampered."
The colonel nodded slowly. "Lack of equipment?"
"Pretty much so," admitted Dr. Smathers. "Remember, we're just here for preliminary investigation. When the
ship brings in more men and equipment--"

His voice trailed off. Very likely, when the ship returned, it would find an empty base. The first-string team
simply wasn't set up for exhaustive work; its job was to survey the field in general and mark out the problems for the
complete team to solve.

Establishing the base had been of primary importance, and that was the sort of equipment that had been carried on the ship. That—and food. The scientists had only the barest essentials to work with; they had no electron microscopes or any of the other complex instruments necessary for exhaustive biochemical work.

Now that they were engaged in a fight for survival, they felt like a gang of midgets attacking a herd of water-buffalo with penknives. Even if they won the battle, the mortality rate would be high, and their chances of winning were pretty small.

The Space Service officers and the scientists discussed the problem for over an hour, but they came to no promising conclusion.

At last, Colonel Fennister said: "Very well, Dr. Pilar; we'll have to leave the food supply problem in your hands. Meanwhile, I'll try to keep order here in the camp."

** * * * * *

SM/2 Broderick MacNeil may not have had a top-level grade of intelligence, but by the end of the second week, his conscience was nagging him, and he was beginning to wonder who was goofing and why. After much thinking—if we may so refer to MacNeil's painful cerebral processes—he decided to ask a few cautious questions.

Going without food tends to make for mental fogginess, snarling tempers, and general physical lassitude in any group of men. And, while quarter rations were not quite starvation meals, they closely approached it. It was fortunate, therefore, that MacNeil decided to approach Dr. Pilar.

Dr. Petrelli's temper, waspish by nature, had become positively virulent in the two weeks that had passed since the destruction of the major food cache. Dr. Smathers was losing weight from his excess, but his heretofore pampered stomach was voicelessly screaming along his nerve passages, and his fingers had become shaky, which is unnerving in a surgeon, so his temper was no better than Petrelli's.

Pilar, of course, was no better fed, but he was calmer than either of the others by disposition, and his lean frame didn't use as much energy. So, when the big hulking spaceman appeared at the door of his office with his cap in his hands, he was inclined to be less brusque than he might have been.

"Yes? What is it?" he asked. He had been correlating notes in his journal with the thought in the back of his mind that he would never finish it, but he felt that a small respite might be relaxing.

MacNeil came in and looked nervously around at the plain walls of the pre-fab plastic dome-hut as though seeking consolation from them. Then he straightened himself in the approved military manner and looked at the doctor.

"You Dr. Piller? Sir?"

"Pilar," said the scientist in correction. "If you're looking for the medic, you'll want Dr. Smathers, over in G Section."

"Oh, yessir," said MacNeil quickly. "I know that. But I ain't sick." He didn't feel that sick, anyway. "I'm Spaceman Second MacNeil, sir, from B Company. Could I ask you something, sir?"

Pilar sighed a little, then smiled. "Go ahead, spaceman."

MacNeil wondered if maybe he'd ought to ask the doctor about his sacroiliac pains, then decided against it. This wasn't the time for it. "Well, about the food. Uh ... Doc, can men eat monkey food all right?"

Pilar smiled. "Yes. What food there is left for the monkeys has already been sent to the men's mess hall." He didn't add that the lab animals would be the next to go. Quick-frozen, they might help eke out the dwindling food supply, but it would be better not to let the men know what they were eating for a while. When they got hungry enough, they wouldn't care.

But MacNeil was plainly puzzled by Pilar's answer. He decided to approach the stuff as obliquely as he knew how.

"Doc, sir, if I ... I uh ... well--" He took the bit in his teeth and plunged ahead. "If I done something against the regulations, would you have to report me to Captain Bellwether?"

Dr. Pilar leaned back in his chair and looked at the big man with interest. "Well," he said carefully, "that would all depend on what it was. If it was something really ... ah ... dangerous to the welfare of the expedition, I'd have to say something about it, I suppose, but I'm not a military officer, and minor infractions don't concern me."

MacNeil absorbed that "Well, sir, this ain't much, really--I ate something I shouldn't of."

Pilar drew down his brows. "Stealing food, I'm afraid, would be a major offense, under the circumstances."

MacNeil looked both startled and insulted. "Oh, nossir! I never swiped no food! In fact, I've been givin' my chow to my buddies."

Pilar's brows lifted. He suddenly realized that the man before him looked in exceptionally good health for one who had been on a marginal diet for two weeks. "Then what have you been living on?"

"The monkey food, sir."
"Monkey food?"
"Yessir. Them greenish things with the purple spots. You know--them fruits you feed the monkeys on."
Pilar looked at MacNeil goggle-eyed for a full thirty seconds before he burst into action.
* * * * *
"No, of course I won't punish him," said Colonel Fennister. "Something will have to go on the record, naturally, but I'll just restrict him to barracks for thirty days and then recommend him for light duty. But are you sure?"
"I'm sure," said Pilar, half in wonder.
Fennister glanced over at Dr. Smathers, now noticeably thinner in the face. The medic was looking over MacNeil's record. "But if that fruit kills monkeys and rats and guinea pigs, how can a man eat it?"
"Animals differ," said Smathers, without taking his eyes off the record sheets. He didn't amplify the statement.
The colonel looked back at Pilar.
"That's the trouble with test animals," Dr. Pilar said, ruffling his gray beard with a fingertip. "You take a rat, for instance. A rat can live on a diet that would kill a monkey. If there's no vitamin A in the diet, the monkey dies, but the rat makes his own vitamin A; he doesn't need to import it, you might say, since he can synthesize it in his own body. But a monkey can't.
"That's just one example. There are hundreds that we know of and God alone knows how many that we haven't found yet."
Fennister settled his own body more comfortably in the chair and scratched his head thoughtfully. "Then, even after a piece of alien vegetation has passed all the animal tests, you still couldn't be sure it wouldn't kill a human?"
"That's right. That's why we ask for volunteers. But we haven't lost a man so far. Sometimes a volunteer will get pretty sick, but if a food passes all the other tests, you can usually depend on its not killing a human being."
"I gather that this is a pretty unusual case, then?"
Pilar frowned. "As far as I know, yes. But if something kills all the test animals, we don't ask for humans to try it out. We assume the worst and forget it." He looked musingly at the wall. "I wonder how many edible plants we've by-passed that way?" he asked softly, half to himself.
"What are you going to do next?" the colonel asked. "My men are getting hungry."
Smathers looked up from the report in alarm, and Pilar had a similar expression on his face.
"For Pete's sake," said Smathers, "don't tell anyone--not anyone--about this, just yet. We don't want all your men rushing out in the forest to gobble down those things until we are more sure of them. Give us a few more days at least."
The colonel patted the air with a hand. "Don't worry. I'll wait until you give me the go-ahead. But I'll want to know your plans."
Pilar pursed his lips for a moment before he spoke. "We'll check up on MacNeil for another forty-eight hours. We'd like to have him transferred over here, so that we can keep him in isolation. We'll feed him more of the ... uh ... what'd he call 'em, Smathers?"
"Banana-pears."
"We'll feed him more banana-pears, and keep checking. If he is still in good shape, we'll ask for volunteers."
"Good enough," said the colonel. "I'll keep in touch."
* * * * *
On the morning of the third day in isolation, MacNeil rose early, as usual, gulped down his normal assortment of vitamins, added a couple of aspirin tablets, and took a dose of Epsom salts for good measure. Then he yawned and leaned back to wait for breakfast. He was certainly getting enough fresh fruit, that was certain. He'd begun to worry about whether he was getting a balanced diet--he'd heard that a balanced diet was very important--but he figured that the doctors knew what they were doing. Leave it up to them.
He'd been probed and needled and tested plenty in the last couple of days, but he didn't mind it. It gave him a feeling of confidence to know that the doctors were taking care of him. Maybe he ought to tell them about his various troubles; they all seemed like nice guys. On the other hand, it wouldn't do to get booted out of the Service. He'd think it over for a while.
He settled back to doze a little while he waited for his breakfast to be served. Sure was nice to be taken care of.
* * * * *
Later on that same day, Dr. Pilar put out a call for volunteers. He still said nothing about MacNeil; he simply asked the colonel to say that it had been eaten successfully by a test animal.
The volunteers ate their banana-pears for lunch, approaching them warily at first, but soon polishing them off with gusto, proclaiming them to have a fine taste.
The next morning, they felt weak and listless.
Thirty-six hours later, they were dead.
"Oxygen starvation," said Smathers angrily, when he had completed the autopsies.

Broderick MacNeil munched pleasantly on a banana-pear that evening, happily unaware that three of his buddies had died of eating that self-same fruit.

* * * * *

The chemist, Dr. Petrelli, looked at the fruit in his hand, snarled suddenly, and smashed it to the floor. Its skin burst, splattering pulp all over the gray plastic.

"It looks," he said in a high, savage voice, "as if that hulking idiot will be the only one left alive when the ship returns!" He turned to look at Smathers, who was peering through a binocular microscope. "Smathers, what makes him different?"

"How do I know?" growled Dr. Smathers, still peering. "There's something different about him, that's all."

Petrelli forcibly restrained his temper. "Very funny," he snapped.

"Not funny at all," Smathers snapped back. "No two human beings are identical--you know that." He lifted his gaze from the eyepiece of the instrument and settled in on the chemist. "He's got AB blood type, for one thing, which none of the volunteers had. Is that what makes him immune to whatever poison is in those things? I don't know.

"Were the other three allergic to some protein substance in the fruit, while MacNeil isn't? I don't know.

"Do his digestive processes destroy the poison? I don't know.

"It's got something to do with his blood, I think, but I can't even be sure of that. The leucocytes are a little high, the red cell count is a little low, the hemoglobin shows a little high on the colorimeter, but none of 'em seems enough to do any harm.

"It might be an enzyme that destroys the ability of the cells to utilize oxygen. It might be anything!"

His eyes narrowed then, as he looked at the chemist. "After all, why haven't you isolated the stuff from the fruit?"

"There's no clue as to what to look for," said Petrelli, somewhat less bitingly. "The poison might be present in microscopic amounts. Do you know how much botulin toxin it takes to kill a man? A fraction of a milligram!"

Smathers looked as though he were about to quote the minimum dosage, so Petrelli charged on: "If you think anyone could isolate an unknown organic compound out of a--"

"Gentlemen! Please!" said Dr. Pilar sharply. "I realize that this is a strain, but bickering won't help. What about your latest tests on MacNeil, Dr. Smathers?"

"As far as I can tell, he's in fine health. And I can't understand why," said the physician in a restrained voice.

"I mean the vitamins," said Smathers. "According to Dr. Petrelli, the fruits contain neither A nor B1. After living solely on them for four weeks now, he should be beginning to show some deficiencies--but he's not.

"No signs?" queried Dr. Pilar. "No symptoms?"

"No signs--at least no abnormal ones. He's not getting enough protein, but, then, none of us is." He made a bitter face. "But he has plenty of symptoms."

"What's the difference between a sign and a symptom?"

"A sign," said Smathers testily, "is something that can be objectively checked by another person than the patient. Lesions, swellings, inflammations, erratic heartbeat, and so on. A symptom is a subjective feeling of the patient, like aches, pains, nausea, dizziness, or spots before the eyes.

And MacNeil is beginning to get all kinds of symptoms. Trouble is, he's got a record of hypochondria, and I can't tell which of the symptoms are psychosomatic and which, if any, might be caused by the fruit."

"The trouble is," said Petrelli, "that we have an unidentifiable disease caused by an unidentifiable agent which is checked by an unidentifiable something in MacNeil. And we have neither the time nor the equipment to find out. This is a job that a fully equipped research lab might take a couple of years to solve."

"We can keep trying," said Pilar, "and hope we stumble across it by accident."

Petrelli nodded and picked up the beaker he'd been heating over an electric plate. He added a chelating agent which, if there were any nickel present, would sequester the nickel ions and bring them out of solution as a brick-red precipitate.

Smathers scowled and bent over his microscope to count more leucocytes.

Pilar pushed his notes aside and went over to check his agar plates in the constant-temperature box.

And all of them tried in vain to fight down the hunger pangs that were corroding at their insides.

* * * * *
Broderick MacNeil lay in his bed and felt pleasantly ill. He treasured each one of his various symptoms; each pain and ache was just right. He hadn't been so comfortable in years. It really felt fine to have all those doctors fussing over him. They got snappy and irritable once in a while, but then, all them brainy people had a tendency to do that. He wondered how the rest of the boys were doing on their diet of banana-pears. Too bad they weren't getting any special treatment.

MacNeil had decided just that morning that he'd leave the whole state of his health in the hands of the doctors. No need for a fellow to dose himself when there were three medics on the job, was there? If he needed anything, they'd give it to him, so he'd decided to take no medicine.

A delightful, dulling lassitude was creeping over him.

"MacNeil! MacNeil! Wake up, MacNeil!"

The spaceman vaguely heard the voice, and tried to respond, but a sudden dizziness overtook him. His stomach felt as though it were going to come loose from his interior.

"I'm sick," he said weakly. Then, with a terrible realization, "I'm really awful sick!"

He saw Dr. Smathers' face swimming above him and tried to lift himself from the bed. "Shoulda taken pills," he said through the haze that was beginning to fold over him again. "Locker box." And then he was unconscious again.

Dr. Smathers looked at him bleakly. The same thing was killing MacNeil as had killed the others. It had taken longer--much longer. But it had come.

And then the meaning of the spaceman's mumbled words came to him. Pills? Locker box? He grabbed the unconscious man's right hand and shoved his right thumb up against the sensor plate in the front of the metal box next to the bed. He could have gotten the master key from Colonel Fennister, but he hadn't the time.

The box door dilated open, and Dr. Smathers looked inside.

When he came across the bottles, he swore under his breath, then flung the spaceman's arm down and ran from the room.

"That's where he was getting his vitamins, then," said Dr. Pilar as he looked over the assortment of bottles that he and Smathers had taken from the locker box. "Look at 'em. He's got almost as many pills as you have." He looked up at the physician. "Do you suppose it was just vitamins that kept him going?"

"I don't know," said Smathers. "I've given him massive doses of every one of the vitamins--from my own supplies, naturally. He may rally round, if that's what it was. But why would he suddenly be affected by the stuff now?"

"Maybe he quit taking them?" Pilar made it half a question.

"It's possible," agreed Smathers. "A hypochondriac will sometimes leave off dosing himself if there's a doctor around to do it for him. As long as the subconscious need is filled, he's happy." But he was shaking his head.

"What's the matter?" Pilar asked.

Smathers pointed at the bottles. "Some of those are mislabeled. They all say vitamins of one kind or another on the label, but the tablets inside aren't all vitamins. MacNeil's been giving himself all kinds of things."

Pilar's eyes widened a trifle. "Do you suppose--?"

"That one of them is an antidote?" Smathers snorted. "Hell, anything's possible at this stage of the game. The best thing we can do, I think, is give him a dose of everything there, and see what happens."

"Yeah, Doc, yeah," said MacNeil smiling weakly, "I feel a little better. Not real good, you understand, but better."

Under iron control, Dr. Smathers put on his best bedside manner, while Pilar and Petrelli hovered in the background.

"Now, look, son," said Smathers in a kindly voice, "we found the medicines in your locker box."

MacNeil's face fell, making him look worse. He'd dropped down close to death before the conglomerate mixture which had been pumped into his stomach had taken effect, and Smathers had no desire to put too much pressure on the man.

"Now, don't worry about it, son," he said hurriedly; "We'll see to it that you aren't punished for it. It's all right. We just want to ask you a few questions."


"Have you been dosing yourself pretty regularly with these things?"

"Well ... uh ... well, yeah. Sometimes." He smiled feebly. "Sometimes I didn't feel so good, and I didn't want to bother the medics. You know how it is."

"Very considerate, I'm sure," said Smathers with just the barest trace of sarcasm, which, fortunately, fell
unheeded on MacNeil's ears. "But which ones did you take every day?"

"Just the vitamins." He paused. "And... uh... maybe an aspirin. The only things I took real regular were the vitamins, though. That's all right ain't it? Ain't vitamins food?"

"Sure, son, sure. What did you take yesterday morning, before you got so sick?"

"Just the vitamins," MacNeil said stoutly. "I figured that since you docs was takin' care of me, I didn't need no medicine."

Dr. Smathers glanced up hopelessly at the other two men. "That eliminates the vitamins," he said, sotto voce. He looked back at the patient. "No aspirin? No APC's? You didn't have a headache at all?"

MacNeil shook his head firmly. "I don't get headaches much." Again he essayed a feeble smile. "I ain't like you guys, I don't overwork my brains."

"I'm sure you don't," said Smathers. Then his eyes gleamed. "You have quite a bit of stomach trouble, eh? Your digestion bad?"

"Yeah. You know; I told you about it. I get heartburn and acid stomach pretty often. And constipation."

"What do you take for that?"

"Oh, different things. Sometimes a soda pill, sometimes milk of magnesia, different things."

Smathers looked disappointed, but before he could say anything, Dr. Petrelli's awed but excited voice came from behind him. "Do you take Epsom salts?"

"Yeah."

"I wonder--" said Petrelli softly.

And then he left for the lab at a dead run.

* * * * *

Colonel Fennister and Major Grodski sat at the table in the lab, munching on banana-pears, blissfully enjoying the sweet flavor and the feeling of fullness they were imparting to their stomachs.

"MacNeil can't stay in the service, of course," said Fennister. "That is, not in any space-going outfit. We'll find an Earthside job for him, though. Maybe even give him a medal. You sure these things won't hurt us?"

Dr. Pilar started to speak, but Petrelli cut him off.

"Positive," said the chemist. "After we worked it out, it was pretty simple. The 'poison' was a chelating agent, that's all. You saw the test run I did for you."

The colonel nodded. He'd watched the little chemist add an iron salt to some of the fruit juice and seen it turn red. Then he'd seen it turn pale yellow when a magnesium salt was added. "But what's a chelating agent?" he asked.

"There are certain organic compounds," Dr. Petrelli explained, "that are... well, to put it simply, they're attracted by certain ions. Some are attracted by one ion, some by another. The chelating molecules cluster around the ion and take it out of circulation, so to speak; they neutralize it, in a way.

"Look, suppose you had a dangerous criminal on the loose, and didn't have any way to kill him. If you kept him surrounded by policemen all the time, he couldn't do anything. See?"

The Space Service Officers nodded their understanding.

"We call that 'sequestering' the ion," the chemist continued. "It's used quite frequently in medicine, as Dr. Smathers will tell you. For instance, beryllium ions in the body can be deadly; beryllium poisoning is nasty stuff. But if the patient is treated with the proper chelating agent, the ions are surrounded and don't do any more damage. They're still there, but now they're harmless, you see."

"Well, then," said the colonel, "just what did this stuff in the fruit do?"

"It sequestered the iron ions in the body. They couldn't do their job. The body had to quit making hemoglobin, because hemoglobin needs iron. So, since there was no hemoglobin in the bloodstream, the patient developed sudden pernicious anemia and died of oxygen starvation."

Colonel Fennister looked suddenly at Dr. Smathers. "I thought you said the blood looked normal."

"It did," said the physician. "The colorimeter showed extra hemoglobin, in fact. But the chelating agent in the fruit turns red when it's connected up with iron--in fact, it's even redder than blood hemoglobin. And the molecules containing the sequestered iron tend to stick to the outside of the red blood cells, which threw the whole test off."

"As I understand it, then," said Major Grodski, "the antidote for the... uh... chelating agent is magnesium?"

"That's right," said Dr. Petrelli, nodding. "The stuff prefers magnesium ions to ferrous ions. They fit better within the chelating ring. Any source of magnesium will do, so long as there's plenty of it. MacNeil was using milk of magnesia, which is the hydroxide, for 'gastric acidity'. It's changed to chloride in the stomach. And he was using Epsom salts--the sulfate, and magnesium citrate as laxatives. He was well protected with magnesium ions."

"We tried it ourselves first, naturally," said Dr. Pilar. "We haven't had any ill effects for two days, so I think we'll be able to make it until the ship comes."

Major Grodski sighed. "Well, if not, I'll at least die with a full stomach." He reached for another banana-pear,
then looked over at Petrelli. "Pass the salt, please."
   Silently and solemnly, the chemist handed him the Epsom salts.
   THE END
I. Fire in the Night

TO THE north thin smoke made a column against the darkening sky. Again I felt the unreasoning fear, the impulse toward nightmare flight that had been with me for a long time now. I knew it was without reason. There was only smoke, rising from the swamps of the tangled Limberlost country, not fifty miles from Chicago, where man has outlawed superstition with strong bonds of steel and concrete.

I knew it was only a camper's fire, yet I knew it was not. Something, far back in my mind, knew what the smoke rose from, and who stood about the fire, peering my way through the trees.

I looked away, my glance slipping around the crowded walls -- shelves bearing the random fruit of my uncle's magpie collector's instinct. Opium pipes of inlaid work and silver, golden chessmen from India, a sword...

Deep memories stirred within me -- deep panic. I was beneath the sword in two strides, tearing it from the wall, my fingers cramping hard around the hilt. Not fully aware of what I did, I found myself facing the window and the distant smoke again. The sword was in my fist, but feeling wrong, not reassuring, not as the sword ought to feel.


"It's the wrong sword," I heard myself saying helplessly.

Then something like a mist cleared from my brain. I blinked at him stupidly, wondering what was happening to me. My voice answered.

"It isn't the sword. It should have come from Cambodia. It should have been one of the three talismans of the Fire King and the Water King. Three very great talismans -- the fruit of â¢cui, gathered at the time of the deluge, but still fresh -- the rattan with flowers that never fade, and the sword of Yan, the guarding spirit."

My uncle squinted at me through pipe-smoke. He shook his head.

"You've changed, Ed," he said in his deep, gentle voice. "You've changed a lot. I suppose because of the war -- it's to be expected. And you've been sick. But you never used to be interested in things like that before. I think you spend too much time at the libraries. I'd hoped this vacation would help. The rest --"

"I don't want rest!" I said violently. "I spent a year and a half resting in Sumatra. Doing nothing but rest in mat smelly little jungle village, waiting and waiting and waiting."

I could see and smell it now. I could feel again the fever that had raged so long through me as I lay in the tabooed hut.

My mind went back eighteen months to the last hour when things were normal for me. It was in the closing phases of World War II, and I was flying over the Sumatran jungle. War, of course, is never good or normal, but until that one blinding moment in the air I had been an ordinary man, sure of myself, sure of my place in the world, with no nagging fragments of memory too elusive to catch.

Then everything blanked out, suddenly and completely. I never knew what it was. There was nothing it could have been. My only injuries came when the plane struck, and they were miraculously light. But I had been whole and unhurt when the blindness and blankness came over me.

The friendly Bataks found me as I lay in the ruined plane. They brought me through a fever and a raging illness with their strange, crude, effective ways of healing, but I sometimes thought they had done me no service when they saved me. And their witch-doctor had his doubts, too.

He knew something. He worked his curious, futile charms with knotted string and rice, sweating with effort I did not understand -- then. I remembered the scarred, ugly mask looming out of the shadow, the hands moving in gestures of strange power.

"Come back, O soul, where thou are lingering in the wood, or in the hills, or by the river. See, I call thee with a toemba bras, with an egg of the fowl Rajah moelija, with the eleven healing leaves...."

"Yes, they were sorry for me at first, all of them. The witchdoctor was the first to sense something wrong and the awareness spread. I could feel it spreading, as their attitude changed. They were afraid. Not of me, I thought, but of -- what?"

Before the helicopter came to take me back to civilization, the witch-doctor had told me a little. As much, perhaps, as he dared.

"You must hide, my son. All your life you must hide.

Something is searching for you -- " He used a word I did not understand. " -- and it has come from the Other World, the ghostlands, to hunt you down. Remember this: all magic things must be taboo to you. And if that too
fails, perhaps you may find a weapon in magic. But we cannot help you. Our powers are not strong enough for that."

He was glad to see me go. They were all glad.

And after that, unrest. For something had changed me utterly. The fever? Perhaps. At any rate, I didn't feel like
the same man. There were dreams, memories -- haunting urgencies as if I had somehow, somewhere left some vital
job unfinished.

I found myself talking more freely to my uncle.

"It was like a curtain lifting. A curtain of gauze. I saw some things more clearly -- they seemed to have a
different significance. Things happen to me now that would have seemed incredible -- before. Now they don't.

"I've traveled a lot, you know. It doesn't help. There's always something to remind me. An amulet in a
pawnshop window, a knotted string, a cat's-eye opal and two figures. I see them in my dreams, over and over. And
once --"

I stopped.

"Yes?" my uncle prompted softly.

"It was in New Orleans. I woke up one night and there was something in my room, very close to me. I had a
gun -- a special sort of gun -- under my pillow. When I reached for it the -- call it a dog -- sprang from the window.
Only it wasn't shaped quite like a dog." I hesitated. "There were silver bullets in the revolver," I said.

My uncle was silent for a long moment. I knew what he was thinking.

"The other figure?" he said, finally.

"I don't know. It wears a hood. I think it's very old. And beyond these two --"

"Yes?"

"A voice. A very sweet voice, haunting. A fire. And beyond the fire, a face I have never seen clearly."

My uncle nodded. The darkness had drawn in; I could scarcely see him, and the smoke outside had lost itself
against the shadow of night. But a faint glow still lingered beyond the trees... Or did I only imagine that?

I nodded toward the window.

"I've seen that fire before," I told him.

"What's wrong with it? Campers make fires."

"No. It's a Need-fire."

"What the devil is that?"

"It's a ritual," I said. "Like the Midsummer fires, or the Beltane fire the Scots used to kindle. But the Need-fire
is lighted only in time of calamity. It's a very old custom."

My uncle laid down his pipe and leaned forward.

"What is it, Ed? Do you have any inkling at all?"

"Psychologically I suppose you could call it a persecution complex," I said slowly. "I believe in things I never
used to. I think someone is trying to find me -- has found me. And is calling. Who it is I don't know. What they want
I don't know. But a little while ago I found out one more thing -- this sword."

I picked the sword up from the table.

"It isn't what I want," I went on, "But sometimes, when my mind is -- abstract, something from outside floats
into it. Like the need for a sword. And not any sword -- just one. I don't know what the sword looks like, but I'd
know if I held it in my hand." I laughed a little. "And if I drew it a few inches from the sheath, I could put out that
fire up there as if I'd blown on it like a candleflame. And if I drew the sword all the way out -- the world would
come to an end!"

My uncle nodded. After a moment, he spoke.

"The doctors," he asked. "What do they say?"

"I know what they would say, if I told them," I said grimly. "Pure insanity. If I could be sure of that, I'd feel
happier. One of the dogs was killed last night, you know."

"Of course. Old Duke. Another dog from some farm, eh?"

"Or a wolf. The same wolf that got into my room last night, and stood over me like a man, and clipped off a
lock of my hair."

Something flamed up far away, beyond the window, and was gone in the dark. The Need-fire.

My uncle rose and stood looking down at me in the dimness. He laid a big hand on my shoulder.

"I think you're sick, Ed."

"You think I'm crazy. Well, I may be. But I've got a hunch I'm going to know soon, one way or the other."

I picked up the sheathed sword and laid it across my knees. We sat in silence for what seemed like a long time.

In the forest to the north, the Need-fire burned steadily. I could not see it. But its flames stirred in my blood --
dangerously -- darkly.

II. Call of the Red Witch
I COULD not sleep. The suffocating breathlessness of late summer lay like a woollen blanket over me. Presently I went into the big room and restlessly searched for cigarettes. My uncle's voice came through an open doorway.

"All right, Ed?"
"Yeah. I can't sleep yet. Maybe I'll read."

I chose a book at random, sank into a relaxer chair and switched on a lamp. It was utterly silent. I could not even hear the faint splashing of little waves on the lakeshore.

There was something I wanted --
A trained rifleman's hand, at need, will itch for the feeling of smooth wood and metal. Similarly, my hand was hungry for the feel of something -- neither gun nor sword, I thought.

A weapon that I had used before. I could not remember what it was. Once I glanced at the poker leaning against the fireplace, and thought that was it; but the flash of recognition was gone instantly.

The book was a popular novel. I skimmed through it rapidly. The dim, faint, pulsing in my blood did not wane. It grew stronger, rising from sub-sensory levels. A distant excitement seemed to be growing deep in my mind.

Grimacing, I rose to return the book to its shelf. I stood there for a moment, my glance skimming over the titles. On impulse I drew out a volume I had not looked at for many years, the Book of Common Prayer.

It fell open in my hands. A sentence blazed out from the page.

I am become as it were a monster unto many.

I put back the book and returned to my chair. I was in no mood for reading. The lamp overhead bothered me, and I pressed for the switch. Instantly moonlight flooded the room -- and instantly the curious sense of expectancy was heightened, as though I had lowered a -- a barrier.

The sheathed sword still lay on the window-seat. I looked past it, to the clouded sky where a golden moon shone. Faint, far away, a glimmer showed -- the Need-fire, blazing in the swampy wilderness of the Limberlost.

And it called.

The golden square of window was hypnotic. I lay back in my chair, half-closing my eyes, while the sense of danger moved coldly within my brain. Sometimes before I had felt this call, summoning me. And always before I had been able to resist.

This time I wavered.

"The lock of hair clipped from my head -- had that given the enemy power? Superstition. My logic called it that, but a deep, inner well of conviction told me that the ancient hair-magic was not merely mummary. Since that time in Sumatra, I had been far less skeptical. And since then I had studied.

The studies were strange enough, ranging from the principles of sympathetic magic to the wild fables of lycanthropy and demonology. Yet I was amazingly quick at learning.

It was as though I took a refresher course, to remind myself of knowledge I had once known by heart. Only one subject really troubled me, and I continually stumbled across it, by roundabout references.

And that was the Force, the entity, disguised in folklore under such familiar names as the Black Man, Satan, Lucifer, and such unfamiliar names as Kutchie, of the Australian Dieris, Tuna, of the Esquimaux, the African Abonsam, and the Swiss Stratteli.

I did no research on the Black Man -- but I did not need to. There was a recurrent dream that I could not help identifying with the dark force that represented evil. I would be standing before a golden square of light, very much afraid, and yetstraining toward some consummation that I desired. And deep down within that glowing square that would be the beginning of motion. I knew there were certain ritual gestures to be made before the ceremony could be begun, but it was difficult to break the paralysis that held me.

A square like the moon-drenched window before me -- yet not the same.

For no chill essence of fear thrust itself out at me now. Rather, the low humming I heard was soothing, gentle as a woman's crooning voice.

The golden square wavered -- shook -- and little tendrils of crepuscular light fingered out toward me. Ever the low humming came, alluring and disarming.

Golden fingers -- tentacles -- they darted here and there as if puzzled. They touched lamp, table, carpet, and drew back. They -- touched me.

Swiftly they leaped forward now -- avid! I had time for a momentary pulse of alarm before they wrapped me in an embrace like golden sands of sleep. The humming grew louder. And I responded to it.

As the skin of the flayed satyr Marsyas thrilled at the sound of his native Phrygian melodies! I knew this music. I knew this -- chant!

Stole through the golden glow a crouching shadow -- not human -- with amber eyes and a bristling mane -- the shadow of a wolf.
It hesitated, glanced over its shoulder questioningly. And now another shape swam into view, cowled and
gowned so that nothing of its face or body showed. But it was small -- small as a child.

Wolf and cowled figure hung in the golden mists, watching and waiting. The sighing murmur altered. Formed
itself into syllables and words. Words in no human tongue, but -- I knew them.

"Ganelon! I call you, Ganelon! By the seal in your blood -- hear me!"
Ganelon! Surely that was my name. I knew it so well.
Yet who called me thus?
"I have called you before, but the way was not open. Now the bridge is made. Come to me, Ganelon!"

A sigh.
The wolf glanced over a bristling shoulder, snarling. The cowled figure bent toward me. I sensed keen eyes
searching me from the darkness of the hood, and an icy breath touched me.

"He has forgotten, Medea," said a sweet, high-pitched voice, like the tone of a child.
Again the sigh. "Has he forgotten me? Ganelon, Ganelon! Have you forgotten the arms of Medea, the lips of
Medea?"
I swung,' cradled in the golden mists, half asleep.
"He has forgotten," the cowled figure said.
"Then let him come to me nevertheless. Ganelon! The Need-fire burns. The gateway lies open to the Dark
World. By fire and earth, and darkness, I summon you! Ganelon!"
"He has forgotten."
"Bring him. We have the power, now."

The golden sands thickened. Flame-eyed wolf and robed shadow swam toward me. I felt myself lifted --
moving forward, not of my own volition.
The window swung wide. I saw the sword, sheathed and ready. I snatched up the weapon, but I could not resist
that relentless tide that carried me forward. Wolf and whispering shadow drifted with me.

"To the Fire. Bring him to the Fire."
"He has forgotten, Medea."
"To the Fire, Edeyrn. To the Fire."
Twisted tree-limbs floated past me. Far ahead I saw a flicker. It grew larger, nearer. It was the Need-fire.
Faster the tide bore me. Toward the fire itself --
Not to Caer Llyr!

From the depths of my mind the cryptic words spewed. Amber-eyed wolf whirled to glare at me; cowled
shadow swept in closer on the golden stream. I felt a chill of deadly cold drive through the curling mists.
"Caer Llyr," the cloaked Edeyrn whispered in the child's sweet voice. "He remembers Caer Llyr -- but does he
remember Llyr?"

"He will remember! He has been sealed to Llyr. And, in Caer Llyr, the Place of Llyr, he will remember."
The Need-fire was a towering pillar a few yards away. I fought against the dragging tide.
I lifted my sword -- threw the sheath away. I cut at the golden mists that fettered me.
Under the ancient steel the shining fog-wraiths shuddered and were torn apart -- and drew back. There was a
break in the humming harmony; for an instant, utter silence.-

Then --
"Matholch!" the invisible whisperer cried. "Lord Matholch!"
The wolf crouched, fangs bared. I aimed a cut at its snarling mask. It avoided the blow easily and sprang.
It caught the blade between its teeth and wrenched the hilt from my grip.
The golden fogs surged back, folding me in their warm embrace.
"Caer Llyr," they murmured.
The Need-fire roared up in a scarlet fountain.
"Caer Llyr!" the flames shouted.
And out of those fires rose -- a woman!
Hair dark as midnight fell softly to her knees. Under level brows she flashed one glance at me, a glance that
held question and a fierce determination. She was loveliness incarnate. Dark loveliness.
Lilith. Medea, witch of Colchis!

And --
"The gateway closes," the child-voice of Edeyrn said.
The wolf, still mouthing my sword, crouched uneasily. But the woman of the fire said no word.
She held out her arms to me.
The golden clouds thrust me forward, into those white arms.
Wolf and cowled shadow sprang to flank us. The humming rose to a deep-pitched roar -- a thunder as of crashing worlds.

"It is difficult, difficult," Medea said. "Help me, Edeyrn. Lord Matholch."

The fires died. Around us was not the moonlit wilderness of the Limberlost, but empty grayness, a featureless grayness that stretched to infinity. Not even stars showed against that blank.

And now there was fear in the voice of Edeyrn.

"Medea. I have not the -- power. I stayed too long in the Earth-world."

"Open the gate!" Medea cried. "Thrust it open but a little way, or we stay here between the worlds forever!"

The wolf crouched, snarling. I felt energy pouring out of his beast-body. His brain that was not the brain of a beast.

Around us the golden clouds were dissipating.

The grayness stole in.

"Ganelon," Medea said. "Ganelon! Help me!"

A door in my mind opened. A formless darkness stole in.

I felt that deadly, evil shadow creep through me, and submerge my mind under ebon waves.

"He has the power," Edeyrn murmured. "He was sealed to Llyr. Let him call on -- Llyr."

"No. No. I dare not. Llyr?" But Medea's face was turned to me questioningly.

At my feet the wolf snarled and strained, as though by sheer brute strength it might wrench open a gateway between locked worlds.

Now the black sea submerged me utterly. My thought reached out and was repulsed by the dark horror of sheer infinity, stretched forth again and --

Touched -- something!

Llyr...Llyr!

"The gateway opens," Edeyrn said.

The gray emptiness was gone. Golden clouds thinned and vanished. Around me, white pillars rose to a vault far, far above. We stood on a raised dais upon which curious designs were emblazoned.

The tide of evil which had flowed through me had vanished.

But, sick with horror and self-loathing, I dropped to my knees, one arm shielding my eyes.

I had called on -- Llyr!

III. Locked Worlds

ACHING IN every muscle, I woke and lay motionless, staring at the low ceiling. Memory flooded back. I turned my head, realizing that I lay on a soft couch padded with silks and pillows. Across the bare, simply furnished room was a recessed window, translucent, for it admitted light, but I could see only vague blurs through it.

Seated beside me, on a three-legged stool, was the dwarfed, robed figure I knew was Edeyrn.

Not even now could I see the face; the shadows within the cowl were too deep. I felt the keen glint of a watchful gaze, though, and a breath of something unfamiliar -- cold and deadly. The robes were saffron, an ugly hue that held nothing of life in the harsh folds. Staring, I saw that the creature was less than four feet tall, or would have been had it stood upright.

Again I heard that soft, childish, sexless voice.

"Will you drink, Lord Ganelon? Or eat?"

I threw back the gossamer robe covering me and sat up. I was wearing a thin tunic of silvery softness, and trunks of the same material. Edeyrn apparently had not moved, but a drapery swung apart in the wall, and a man came silently in, bearing a covered tray.

Sight of him was reassuring. He was a big man, sturdily muscled, and under a plumed Etruscan-styled helmet his face was tanned and strong. I thought so till I met his eyes. They were blue pools in which horror had drowned.

And ancient fear, so familiar that it was almost submerged, lay deep in his gaze.

Silently he served me and in silence withdrew.

Edeyrn nodded toward the tray.

"Eat and drink. You will be stronger, Lord Ganelon."

There were meats and bread, of a sort, and a glass of colorless liquid that was not water, as I found on sampling it. I took a sip, set down the chalice, and scowled at Edeyrn.

"I gather that I'm not insane," I said.

"You are not. Your soul has been elsewhere -- you have been in exile -- but you are home again now."

"In Caer Llyr?" I asked, without quite knowing why.

Edeyrn shook the saffron robes.

"No. But you must remember?"
"I remember nothing. Who are you? What's happened to me?"
"You know that you are Ganelon?"
"My name's Edward Bond."
"Yet you almost remembered -- at the Need-fire," Edeym said. "This will take time. And there is danger always. Who am I? I am Edeyrn -- who serves the Coven."
"Are you --"
"A woman," she said, in that childish, sweet voice, laughing a little. "A very old woman, the oldest of the Coven, it has shrunk from its original thirteen. There is Medea, of course, Lord Matholch -- " I remembered the wolf -- "Ghast Rhymi, who has more power than any of us, but is too old to use it. And you, Lord Ganelon, or Edward Bond, as you name yourself. Five of us in all now. Once there were hundreds, but even I cannot remember that time, though Ghast Rhymi can, if he would."
I put my head in my hands.
"Good heavens, I don't know! Your words mean nothing to me. I don't even know where I am!"
"Listen," she said, and I felt a soft touch on my shoulder. "You must understand this. You have lost your memories."
"That's not true."
"It is true, Lord Ganelon. Your true memories were erased, and you were given artificial ones. All you think you recall now, of your life on the Earth-world -- all that is false. It did not happen. At least, not to you."
"The Earth-world? I'm not on Earth?"
"This is a different world," she said. "But it is your own world. You came from here originally. The Rebels, our enemies, exiled you and changed your memories."
"That's impossible."
"Come here," Edeyrn said, and went to the window. She touched something, and the pane grew transparent. I looked over her shrouded head at a landscape I have never seen before.
Or had I?
Under a dull, crimson sun the rolling forest below lay bathed in bloody light. I was looking down from a considerable height, and could not make out details, but it seemed to me that the trees were oddly shaped and that they were moving. A river ran toward distant hills. A few white towers rose from the forest. That was all. Yet the scarlet, huge sun had told me enough. This was not the Earth I knew.
"Another planet?"
"More than that," she said. "Few in the Dark World know this. But I know -- and there are some others who have learned, unluckily for you. There are worlds of probability, divergent in the stream of time, but identical almost, until the branches diverge too far."
"I don't understand that."
"Worlds coexistent in time and space -- but separated by another dimension, the variant of probability. This is the world that might have been yours had something not happened, long ago. Originally the Dark World and the Earth-world were one, in space and time. Then a decision was made -- a very vital decision, though I am not sure what it was. From that point the time-stream branched, and two variant worlds existed where there had been only one before.
"They were utterly identical at first, except that in one of them the key decision had not been made. The results were very different. It happened hundreds of years ago, but the two variant worlds are still close together in the time stream. Eventually they will drift farther apart, and grow less like each other. Meanwhile, they are similar, so much so that a man on the Earth-world may have his twin in the Dark World."
"His twin?"
"The man he might have been, had the key decision not been made ages ago in his world. Yes, twins, Ganelon - Edward Bond. Do you understand now?"
I returned to the couch and sat there, frowning.
"Two worlds, coexistent. I can understand that, yes. But I think you mean more -- that a double for me exists somewhere."
"You were born in the Dark World. Your double, the true Edward Bond, was born on Earth. But we have enemies here, woods-runners, rebels, and they have stolen enough knowledge to bridge the gulf between time-variants. We ourselves learned the method only lately, though once it was well-known here, among the Coven."
"The rebels reached out across the gulf and sent you -- sent Ganelon -- into the Earth-world so that Edward Bond could come here, among them. They --"
"But why?" I interrupted. "What reason could they have for that?"
Edeyrn turned her hooded head toward me, and I felt, not for the first time, remote chill as she fixed her unseen
gaze upon my face.

"What reason?" she echoed in her sweet, cool voice. "Think, Ganelon. See if you remember."

I thought, I closed my eyes and tried to submerge my conscious mind, to let the memories of Ganelon rise up to the surface if they were there at all. I could not yet accept this preposterous thought in its entirety, but certainly it would explain a great deal if it were true. It would even explain -- I realized suddenly -- that strange blanking out in the plane over the Sumatra jungle, that moment from which everything had seemed so wrong.

Perhaps that was the moment when Edward Bond left Earth, and Ganelon took his place -- both twins too stunned and helpless at the change to know what had happened, or to understand.

But this was impossible!

"I don't remember!" I said harshly. "It can't have happened. I know who I am! I know everything that ever happened to Edward Bond. You can't tell me that all this is only illusion. It's too clear, too real!"

"Ganelon, Ganelon," Edeyrn crooned to me, a smile in her voice. "Think of the rebel tribes. Try, Ganelon. Try to remember why they did what they did to you. The woods-runners, Ganelon -- the disobedient little men in green. The hateful men who threatened us. Ganelon, surely you remember!"

It may have been a form of hypnotism. I thought of that later. But at that moment, a picture did swim into my mind. I could see the green-clad swarms moving through the woods, and the sight of them made me hot with sudden anger. For that instant I was Ganelon, and a great and powerful lord, defied by these underlings not fit to tie my shoe.

"Of course you hated them," murmured Edeyrn. She may have seen the look on my face. I felt the stiffness of an unfamiliar twist of feature as she spoke. I had straightened where I sat, and my shoulders had gone back arrogantly, my lip curling a feeling of scorn. So perhaps she did not read my mind at all. What I thought was plain in my face and bearing.

"Of course you punished them when you could," she went on. "It was your right and duty. But they duped you, Ganelon. They were cleverer than you. They found a door that would turn on a temporal axis and thrust you into another world. On the far side of the door was Edward Bond who did not hate them. So they opened the door."

Edeyrn's voice rose slightly and in it I detected a note of mockery.

"False memories, false memories, Ganelon. You put on Edward Bond's past when you put on his identity. But he came into our world as he was, free of any knowledge of Ganelon. He has given us much trouble, my friend, and much bewilderment. At first we did not guess what had gone wrong. It seemed to us that as Ganelon vanished from our Coven, a strange new Ganelon appeared among the rebels, organizing them to fight against his own people." She laughed softly. "We had to rouse Ghast Rhymi from his sleep to aid us. But in the end, learning the method of door-opening, we came to Earth and searched for you, and found you. And brought you back. This is your world, Lord Ganelon! Will you accept it?"

I shook my head dizzily.

"It isn't real. I'm still Edward Bond."

"We can bring back your true memories. And we will. They came to the surface for a moment, I think, just now. But it will take time. Meanwhile, you are one of the Coven, and Edward Bond is back upon Earth in his old place. Remembering -- " She laughed softly. "Remembering, I am sure, all he left undone here. But helpless to return, or meddle again in what does not concern him. But we have needed you, Ganelon. How badly we have needed you!"

"What can I do? I'm Edward Bond."

"Ganelon can do much -- when he remembers. The Coven has fallen upon evil days. Once we were thirteen. Once there were other Covens to join us in our Sabbats. Once we ruled this whole world, under Great Llyr. But Llyr is falling asleep now. He draws farther and farther away from his worshippers. By degrees the Dark World has fallen into savagery. And, of all the Covens, only we remain, a broken circle, dwelling close to Caer Llyr where the Great One sleeps beyond his Golden Window."

She fell silent for a moment.

"Sometimes I think that Llyr does not sleep at all," she said. "I think he is withdrawing, little by little, into some farther world, losing his interest in us whom he created. But he returns!" She laughed. "Yes, he returns when the sacrifices stand before his Window. And so long as he comes back, the Coven has power to force its will upon the Dark World.

"But day by day the forest rebels grow stronger, Ganelon. With our help, you were gathering power to oppose them -- when you vanished. We needed you then, and we need you more man ever now. You are one of the Coven, perhaps the greatest of us all. With Matholch you were --"

"Wait a minute," I said. "I'm still confused. Matholch? Was he the wolf I saw?"

"He was."
"You spoke of him as though he were a man."
"He is a man -- at times. He is lycanthropic. A shape-changer."
"A werewolf? That's impossible. It's a myth, a bit of crazy folklore."
"What started the myth?" Edeyrn asked. "Long ago, there were many gateways opened between the Dark World and Earth. On Earth, memories of those days survive as superstitious tales. Folklore. But with roots in reality."
"It's superstition, nothing else," I said flatly. "You actually mean that werewolves, vampires and all that, exist."
"Ghast Rhymi could tell you more of this than I can. But we cannot wake him for such a matter. Perhaps I -- well, listen. The body is composed of cells. These are adaptable to some extent. When they are made even more adaptable, when metabolism is accelerated sporadically, werewolves come into being."

The sweet, sexless child's voice spoke on from the shadow of the hood. I began to understand a little. On Earth, college biology had showed me instances of cells run wild -- malignant tumors and the like. And there were many cases of "wolf-men," with thick hair growing like a pelt over them. If the cells could adapt themselves quickly, strange things might occur.

But the bones? Specialized osseous tissue, not the rigidly brittle bones of the normal man. A physiological structure that could, theoretically, so alter itself that it would be wolf instead of man, was an astounding theory!
"Part of it is illusion, of course," Edeyrn said. "Matholch is not as bestial in form as he seems. Yet he is a shape-changer, and his form does alter."
"But how?" I asked. "How did he get this power?"
For the first time Edeyrn seemed to hesitate. "He is -- a mutation. There are many mutations among us, here in the Dark World. Some are in the Coven, but others are elsewhere."
"Are you a mutation?" I asked her.
"Yes."
"A -- shape-changer?"
"No," Edeyrn said, and the thin body under the robe seemed to shake a little. "No, I cannot change my shape, Lord Ganelon. You do not remember my -- my powers?"
"I do not."
"Yet you may find me useful when the Rebels strike again," she said slowly. "Yes, there are mutations among us, and perhaps that is the chief reason why the probability-rift came ages ago. There are no mutants on Earth -- at least not our type. Matholch is not the only one."
"Am I a mutant?" I asked very softly.
The cowled head shook.
"No. For no mutant may be sealed to Llyr. As you have been sealed. One of the Coven must know the key to Caer Llyr."

The cold breath of fear touched me again. No, not fear. Horror, the deadly, monstrous breathlessness that always took me when the name of Llyr was mentioned.
I forced myself to say, "Who is Llyr?"
There was a long silence.
"Who speaks of Llyr?" a deep voice behind me asked. "Better not to lift that veil, Edeyrn!"
"Yet it may be necessary," Edeyrn said.
I turned, and saw, framed against the dark portiere, the rangy, whipcord figure of a man, clad as I was in tunic and trunks. His red, pointed beard jutted; the half-snarling curve of his full lips reminded me of something. Agile grace was in every line of his wiry body.
Yellow eyes watched me with wry amusement.
"Pray it may not be necessary," the man said. "Well, Lord Ganelon? Have you forgotten me, too?"
"He has forgotten you, Matholch," Edeyrn said, "At least in this form!"
Matholch -- the wolf! The shape-changer!
He grinned.
"It is Sabbat tonight," he said. "The Lord Ganelon must be prepared for it. Also, I think there will be trouble. However, that is Medea's business, and she asks if Ganelon is awake. Since he is, let us see her now."
"Will you go with Matholch?" Edeyrn asked me.
"I suppose so," I said. The red-beard grinned again.
"Ai, you have forgotten, Ganelon! In the old days you'd never have trusted me behind your back with a dagger."
"You always knew better than to strike," Edeyrn said. "If Ganelon ever called on Llyr, it would be unfortunate for you!"
"Well, I joked," Matholch said carelessly. "My enemies must be strong enough to give me a fight so I'll wait till your memory comes back, Lord Ganelon. Meanwhile the Coven has its back to the wall, and I need you as badly as you need me. Will you come?"

"Go with him," Edeyrn said. "You are in no danger -- wolf's bark is worse than wolf's bite -- even though this is not Caer Llyr."

I thought I sensed a hidden threat in her words. Matholch shrugged and held the curtain aside to let me pass.

"Few dare to threaten a shape-changer," he said over his shoulder.

"I dare," Edeyrn said, from the enigmatic shadows of her saffron cowl. And I remembered that she was a mutant too -- though not a lycanthrope, like a red-bearded werewolf striding beside me along the vaulted passage.

What was -- Edeyrn?

IV. Matholch -- and Medea

UP TO now the true wonder of the situation had not really touched me yet. The anaesthesia of shock had dulled me. As a soldier -- caught in the white light of a flare dropped from an overhead plane -- freezes into immobility, so my mind still remained passive. Only superficial thoughts were moving there, as though, by concentration on immediate needs, I could eliminate the incredible fact that I was not on the familiar, solid ground of Earth.

But it was more than this. There was a curious, indefinable familiarity about these groined, pale-walled halls through which I strode beside Matholch, as there had been a queer familiarity about the twilit landscape stretching to forested distance beneath the window of my room.

Edeyrn -- Medea -- the Coven.

The names had significance, like words in a language I had once known well, but had forgotten.

The half-loping, swift walk of Matholch, the easy swing of his muscular shoulders, the snarling smile on his red-bearded lips -- these were not new to me.

He watched me furtively out of his yellow eyes. Once we paused before a red-figured drapery, and Matholch, hesitating, thrust the curtain aside and gestured me forward.

I took one step -- and stopped. I looked at him.

He nodded as though satisfied. Yet there was still a question in his face.

"So you remember a little, eh? Enough to know that this isn't the way to Medea. However, come along, for a moment. I want to talk to you."

As I followed him up a winding stair, I suddenly realized that he had not spoken in English. But I had understood him, as I had understood Edeyrn and Medea.

Ganelon?

We were in a tower room, walled with transparent panes. There was a smoky, sour odor in the air, and gray tendrils coiled up from a brazier set in a tripod in the middle of the chamber. Matholch gestured me to one of the couches by the windows. He dropped carelessly beside me.

"I wonder how much you remember," he said.

I shook my head.

"Not much. Enough not to be too -- trusting."

"The artificial Earth-memories are still strong, then. Ghast Rhymi said you would remember eventually, but that it would take time. The false writing on the slate of your mind will fade, and the old, true memories will come back. After a while."

Like a palimpsest, I thought -- manuscript with two writings upon its parchment. But Ganelon was still a stranger; I was still Edward Bond.

"I wonder," Matholch said slowly, staring at me. "You spent much time exiled. I wonder if you have changed, basically. Always before -- you hated me, Ganelon. Do you hate me now?"

"No," I said. "At least, I don't know. I think I distrust you."

"You have reason. If you remember at all. We have always been enemies, Ganelon, though bound together by the needs and laws of the Coven. I wonder if we need be enemies any longer?"

"It depends. I'm not anxious to make enemies -- especially here."

Matholch's red brows drew together.

"Aye, that is not Ganelon speaking! In the old days, you cared nothing about how many enemies you made. If you have changed so much, danger to us all may result."

"My memory is gone," I said. "I don't understand much of this. It seems dream-like."

Now he sprang up and restlessly paced the room. "That's well. If you become the old Ganelon again, we'll be enemies again. That I know. But if Earth-exile has changed you -- altered you -- we may be friends. It would be better to be friends. Medea would not like it; I do not think Edeyrn would. As for Ghast Rhymi -- " He shrugged.

"Ghast Rhymi is old -- old. In all the Dark World, Ganelon, you have the most power. Or can have. But it would
mean going to Caer Llyr."

Matholch stooped to look into my eyes.

"In the old days, you knew what that meant. You were afraid, but you wanted the power. Once you went to Caer Llyr -- to be sealed. So there is a bond between you and Llyr -- not consummated yet. But it can be, if you wish it."

"What is Llyr?" I asked.

"Pray that you will not remember that," Matholch said. "When Medea talks to you -- beware when she speaks of Llyr. I may be friend of yours or enemy, Ganelon, but for my own sake, for the sake of the Dark World -- even for the sake of the rebels -- I warn you: do not go to Caer Llyr. No matter what Medea asks. Or promises. At least be wary till you have your memories back."

"What is Llyr?" I said again.

Matholch swung around, his back to me. "Ghast Rhymi knows, I think. I do not. Nor do I want to. Llyr is -- is evil -- and is hungry, always. But what feeds his appetite is -- is -- " He stopped.

"You have forgotten," he went on after a while. "One thing I wonder. Have you forgotten how to summon Llyr?"

I did not answer. There was a darkness in my mind, an ebon gate against which my questioning thoughts probed vainly. Llyr -- Llyr?

Matholch cast a handful of powdery substance into the glowing brazier.

"Can you summon Llyr?" he asked again his voice soft. "Answer, Ganelon. Can you?"

The sour smoke-stench grew stronger. The darkness in my head sprang apart, riven, as though a gateway had opened in the shadow. I -- recognized that deadly perfume.

I stood up, glaring at Matholch. I took two steps, thrust out my sandaled foot, and overturned the brazier. Embers scattered on the stone floor. The red-beard turned a startled face to me.

I reached out, gripped Matholch's tunic, and shook him till his teeth rattled together. Hot fury filled me -- and something more.

That Matholch should try his tricks on me!

A stranger had my tongue. I heard myself speaking.

"Save your spells for the slaves and helots," I snarled. "I tell you what I wish to tell you -- no more than that! Burn your filthy herbs elsewhere, not in my presence!"

Red-bearded jaw jutted. Yellow eyes flamed. Matholch's face altered, flesh flowing like water, dimly seen in the smoke-clouds that poured up from the scattered embers.

Yellow tusks threatened me through the gray mists.

The shape-changer made a wordless noise in his throat -- the guttural sound a beast might make. Wolf-cry! A wolf mask glared into mine!

The smoke swam away. The illusion -- illusion? -- was gone. Matholch, his face relaxing from its snarling lines, pulled gently free from my grip.

"You -- startled me, Lord Ganelon," he said smoothly. "But I think that I have had a question answered, whether or not these herbs -- " He nodded toward the overturned brazier. "-- had anything to do with it."

I turned toward the doorway

"Wait," Matholch said. "I took something from you, a while ago."

I stopped.

The red-beard came toward me, holding out a weapon -- a bared sword.

"I took this from you when we passed through the Need-fire," he said. "It is yours."

I accepted the blade.

Again I moved toward the curtained archway.

Behind me Matholch spoke.

"We are not enemies yet, Ganelon," he said gently. "And if you are wise, you will not forget my warning. Do not go to Caer Llyr."

I went out. Holding the sword, I hurried down the winding stairway. My feet found their path without conscious guidance. The -- intruder -- in my brain was still strong. A palimpsest. And the blurred, erased writing was becoming visible, as though treated with some strong chemical.

The writing that was my lost memory.

The castle -- how did I know it was a castle? -- was a labyrinth. Twice I passed silent soldiers standing guard, with a familiar shadow of fear in their eyes -- a shadow that, I thought, deepened as they saw me.

I went on, hurrying along a pale-amber hallway. I brushed aside a golden curtain and stepped into an oval room, dome-ceilinged, walled with pale, silken draperies. A fountain spurted, its spray cool on my cheek. Across the
chamber, an archway showed the outlines of leafy branches beyond.
I went on through the arch. I stepped out into a walled garden. A garden of exotic flowers and bizarre trees.
The blooms were a riot of patternless color, like glowing jewels against the dark earth. Ruby and amethyst, crystal-clear and milky white, silver and gold and emerald, the flowers made a motionless carpet. But the trees were not motionless.
Twisted and gnarled as oaks, their black boles and branches were veiled by a luxuriant cloud of leafage, virulent green.
A stir of movement rippled through that green curtain. The trees roused to awareness.
I saw the black branches twist and writhe slowly --
Satisfied, their vigilance relaxed. They were motionless again. They -- knew me.
Beyond that evil orchard the dark sky made the glowing ember of the sun more brilliant by contrast.
The trees stirred again.
Ripples of unrest shook the green. A serpentine limb, training a veil of leaves, lashed out -- struck -- whipped back into place.
Where it had been a darting shape ran forward, ducking and twisting -- as the guardian trees struck savagely at it.
A man, in a tight-fitting suit of earth-brown and forest-green, came running toward me, his feet trampling the jewel-flowers. His hard, reckless face was alight with excitement and a kind of triumph. He was empty-handed, but a pistol-like weapon of some sort swung at his belt.
"Edward!" he said urgently, yet keeping his voice low. "Edward Bond!"
I knew him. Or I knew him for what he was. I had seen dodging, furtive, green-clad figures like his before, and an anger already familiar surged over me at the very sight of him.
Enemy, upstart! One of the many who had dared work their magic upon the great Lord Ganelon.
I felt the heat of rage suffuse my face, and the blood rang in my ears with this unfamiliar, yet well-known fury. My body stiffened in the posture of Ganelon -- shoulders back, lip curled, chin high. I heard myself curse the fellow in a voice that was choked and a language I scarcely remembered. And I saw him draw back, disbelief vivid upon his face. His hand dropped to his belt.
"Ganelon?" he faltered, his eyes narrow as they searched mine. "Edward, are you with us or are you Ganelon again?"
V. Scarlet Witch
GRIPPED in my right hand I still held the sword. I cut at him savagely by way of answer. He sprang back, glanced at me over his shoulder, and drew his weapon. I followed his glance and saw another green figure dodging forward among the trees. It was smaller and slenderer -- a girl, in a tunic the color of earth and forest. Her black hair swung upon her shoulders. She was tugging at her belt as she ran, and the face she turned to me was ugly with hate, her teeth showing in a snarl.
The man before me was saying something.
"Edward, listen to me!" he was crying. "Even if you're Ganelon, you remember Edward Bond! He was with us - - he believed in us. Give us a hearing before it's too late! Aries could convince you, Edward! Come to Aries. Even if you're Ganelon, let me take you to Aries!"
"It's no use, Ertu," the voice of the girl cried thinly. She was struggling with the last of the trees, whose flexible bough-tips still clutched to stop her. Neither of them tried now to keep their voices down. They were shouting, and I knew they must rouse the guards at any moment, and I wanted to kill them both myself before anyone came to forestall me by accident. I was hungry and thirsty for the blood of these enemies, and in that moment the name of Edward Bond was not even a memory.
"Kill him, Ertu!" cried the girl. "Kill him or stand out of the way! I know Ganelon!"
I looked at her and took a fresh grip on my sword. Yes, she spoke the truth. She knew Ganelon. And Ganelon knew her, and remembered dimly that she had reason for her hate. I had seen that face before, contorted with fury and despair. I could not recall when or where or why, but she looked familiar.
The man Ertu drew his weapon reluctantly. To him I was still at least the image of a friend. I laughed exultantly and swung at him again with the sword, hearing it hiss viciously through the air. This time I drew blood. He stepped back again, lifting his weapon so that I looked down its black barrel.
"Don't make me do it," he said between his teeth. "This will pass. You have been Edward Bond -- you will be again. Don't make me kill you, Ganelon!"
I lifted the sword, seeing him only dimly through a ruddy haze of anger. There was a great exultation in me. I could already see the fountain of blood that would leap from his severed arteries when my blade completed its swing.
I braced my body for the great full-armed blow!
And the sword came alive in my hand. It leaped and shuddered against my fist.
Impossibly -- in a way I cannot describe -- that blow reversed itself. All the energy I was braced to expend upon my enemy recoiled up the sword, up my arm, crashed against my own body. A violent explosion of pain and shock sent the garden reeling. The earth stuck hard against my knees.
Mist cleared from my eyes. I was still Ganelon, but a Ganelon dizzy from something more powerful than a blow.
I was kneeling on the grass, braced with one hand, shaking the throbbing fingers of my sword-hand and staring at the sword that lay a dozen feet away, still faintly glowing.
It was Matholch's doing -- I knew that! I should have remembered how little I could trust that shifting, unstable wolf-ling. I had laid hands upon him in his tower-room -- I should have known he would have his revenge for that. Even Edward Bond -- soft fool that he was -- would have been wise enough not to accept a gift from the shape-changer.
There was no time now for anger at Matholch, though. I was looking up into Ertu's eyes, and into the muzzle of his weapon, and a look of decision grew slowly in his face as he scanned mine.
"Ganelon!" he said, almost whispering. "Warlock!"
He tilted the weapon down at me, his finger moving on the trigger.
"Wait, Ertu!" cried a thin voice behind him. "Wait -- let me!"
I looked up, still dazed. It had all happened so quickly that the girl was still struggling in the edge of the trees, though she cleared them as I looked and lifted her own weapon. Behind it her face was white and blazing with relentless hate. "Let me!" she cried again. "He owes me this!"
I was helpless. I knew that even at this distance she would not miss. I saw the glare of fury in her eyes and I saw the muzzle waver a little as her hand shook with rage, but I knew she would not miss me. I thought of a great many things in that instant -- confused memories of Ganelon's and of Edward Bond's surged together through my mind.
Then a great hissing like a wind swept up among the trees behind the girl. They all swayed toward her more swiftly than trees have any right to move, stooping and straining and hissing with a dreadful vicious avidity. Ertu shouted something inarticulate. But I think the girl was too angry to hear or see.
She never knew what happened. She could only have felt the great bone-cracking sweep of the nearest branch, reaching out for her from the leaning tree. She fired as the blow struck her, and a white-hot bolt ploughed up the turf at my knee, I could smell the charring grass.
The girl screamed thinly once as the avid boughs writhed together over her. The limbs threshed about her in a furious welter, and I heard one clear and distinct snap -- a sound I had heard before, I knew, in this garden. The human spine is no more than a twig in the grip of those mighty boughs.
Ertu was stunned for one brief instant. Then he whirled to me, and this time I knew his finger would not hesitate on the trigger.
But time had run out for the two woods-people. He was not fully turned when there came a laugh, cool and amused, from behind me. I saw loathing and hatred flash across Ertu's bronzed face, and the weapon whirled away from me and pointed toward someone at my back. But before he could press the trigger something like an arrow of white light sprang over my shoulder and struck him above the heart.
He dropped instantly, his mouth frozen in a snarling square, his eyes staring.
I turned, getting slowly to my feet. Medea stood there smiling, very slim and lovely in a close-fitting scarlet gown. In her hand was a small black rod, still raised. Her purple eyes met mine.
"Ganelon," she murmured in an infinitely caressing voice. "Ganelon." And still holding my gaze with hers, she clapped her hands softly.
Silent, swift-moving guardsmen came and lifted the motionless body of Ertu. They carried him away. The trees stirred, whispered -- and fell silent.
"You have remembered," Medea said. "Ganelon is ours again. Do you remember me -- Lord Ganelon?"
Medea, witch of Colchis! Black and white and crimson, she stood there smiling at me, her strange loveliness stirring old, forgotten memories in my blood. No man who had known Medea could ever forget her wholly. Not till time ended.
But wait! There was something more about Medea that I must remember. Something that made even Ganelon a little doubtful, a little cautious. Ganelon? Was I Ganelon again? I had been wholly my old self when the woods-people stood before me, but now I was uncertain.
The memories ebbed. While the lovely witch stood smiling at me, not guessing, all that had made me so briefly Ganelon dropped from my mind and body like a discarded cloak. Edward Bond stood there in my clothing, staring
about the clearing and remembering with dismay and sick revulsion what had just been happening here.

For a moment I turned away to hide from Medea what my face must betray if she saw it. I felt dizzy with more than memory. The knowledge that two identities shared my body was a thought even more disturbing than the memory of what I had just done in the grip of Ganelon's strong, evil will.

This was Ganelon's body. There could be no doubt of it now. Somewhere on Earth Edward Bond was back in his old place, but the patterns of his memory still overlaid my mind, so that he and I shared a common soul, and there was no Ganelon except briefly, in snippets, as the memories that were rightfully mine -- mine? -- returned to crowd out Edward Bond.

I hated Ganelon. I rejected all he thought and was. My false memories, the heritage from Edward Bond, were stronger in me than Ganelon. I was Edward Bond -- now!

Medea's caressing voice broke in upon my conflict, echoing her question.

"Do you remember me, Lord Ganelon?"

I turned to her, feeling the bewilderment on my own face, so that my very thoughts were blurred.

"My name is Bond," I told her stubbornly.

She sighed.

"You will come back," she said. "It will take time, but Ganelon will return to us. As you see familiar things again, the life of the Dark World, the life of the Coven, the doors of your mind will open once more. You will remember a little more tonight, I think, at the Sabbat." Her red smile was suddenly almost frightening.

"Not since I went into the Earth-world has a Sabbat been held, and it is long past time," she went on. "For in Caer Llyr there is one who stirs and grows hungry for his sacrifice."

She looked at me piercingly, the purple eyes narrowing.

"Do you remember Caer Llyr, Ganelon?"

The old sickness and horror came over me as she repeated that cryptic name.

Llyr -- Llyr! Darkness, and something stirring beyond a golden window. Something too alien to touch the soil that human feet touched, something that should never share the same life humans lived. Touching that soil, sharing that life, it defiled them so that they were no longer fit for humans to share. And yet, despite my revulsion, Llyr was terribly intimate, too!

I knew, I remembered --

"I remember nothing," I told her shortly. For in that particular moment, caution was born in me. I could not trust anyone, not even myself. Least of all Ganelon -- myself. I did remember, but I must not let them know. Until I was clearer as to what they wanted, what they threatened, I must keep this one secret which was all the weapon I had.

Llyr! The thought of him -- of it -- crystallized that decision in my mind. For somewhere in the murk of Ganelon's past there was a frightening link with Llyr. I knew they were trying to push me into that abyss of oneness with Llyr, and I sensed that even Ganelon feared that. I must pretend to be more ignorant than I really was until the thing grew clearer in my memory.

I shook my head again. "I remembered nothing," â¢

"Not even Medea?" she whispered, and swayed toward me. There was-sorcery about her. My arms received that red and white softness as if they were Ganelon's arms, not mine. But it was Edward Bond's lips which responded to the fierce pressure of her lips.

Not even Medea?

Edward Bond or Ganelon, what was it to me then? The moment was enough.

But the touch of the red witch wrought a change in Edward Bond. It brought a sense of strangeness, of utter strangeness, to him -- to me. I held her lovely, yielding body in my arms, but something alien and unknown stooped and hovered above me as we touched. I surmised that she was holding herself in check -- restraining a -- a demon that possessed her -- a demon that fought to free itself.

"Ganelon!"

Trembling, she pressed her palms against my chest and thrust free. Tiny droplets stood on her pale forehead.

"Enough!" she whispered. "You know!"

"What, Medea?"

And now stark horror stood in those purple eyes.

"You have forgotten!" she said. "You have forgotten me, forgotten who I am, what I am!"

VI. The Ride to Caer Secaire

LATER, in the apartments that had been Ganelon's, I waited for the hour of Sabbat. And as I waited, I paced the floor restlessly. Ganelon's feet, pacing Ganelon's floor. But the man who walked here was Edward Bond. Amazing, I thought, how the false memory-patterns of another person, impressed upon Ganelon's clean-sponged
brain, had changed him from himself to -- me.

I wondered if I would ever be sure again which personality was myself. I hated and distrusted Ganelon, now. But I knew how easily the old self slipped back, in which I would despise Edward Bond.

And yet to save myself, I must call back Ganelon's memories. I must know more than those around me guessed I knew, or I thought Ganelon and Bond together might be lost. Medea would tell me nothing. Edeyrn would tell me nothing. Matholch might tell me much, but he would be lying.

I scarcely dared go with them to this Sabbat, which I thought would be the Sabbat of Llyr, because of that strange and terrible link between Llyr and myself. There would be sacrifices.

How could I be sure I, myself, was not destined for the altar before that -- that golden window?

Then, for a brief but timeless moment Ganelon came back, remembering fragmentary things that flitted through my mind too swiftly to take shape. I caught only terror -- terror and revulsion and a hideous, hopeless longing....

Dared I attend the Sabbat?

But I dared not fail to attend, for if I refused I must admit I knew more about what threatened Ganelon than Edward Bond should know. And my only frail weapon against them now was what little I recalled that was secret from them. I must go. Even if the altar waited me, I must go.

There were the woodspeople. They were outlaws, hunted through the forests by Coven soldiers. Capture meant enslavement -- I remembered the look of still horror in the eyes of those living dead men who were Medea's servants. As Edward Bond, I pitied them, wondered if I could do anything to save them from the Coven. The real Edward Bond had been living among them for a year and a half, organizing resistance, fighting the Coven. On Earth, I knew, he must be raging helplessly now, haunted by the knowledge of work unfinished and friends abandoned to the mercies of dark magic.

Perhaps I should seek the woodspeople out. Among them, at least, I would be safe while my memories returned. But when they returned -- why, men Ganelon would rage, running amuck among them, mad with his own fury and arrogance. Dared I subject the woodspeople to the danger that would be the Lord Ganelon when Ganelon's memories came back? Dared I subject myself to their vengeance, for they would be many against one?

I could not go and I could not stay. There was safety nowhere for the Edward Bond who might become Ganelon at any moment. There was danger everywhere. From the rebel woods-people, from every member of this Coven.

It might come through the wild and mocking Matholch.

Or through Edeyrn, who had watched me unseen with her chilling gaze in the shadows of her cowl.

Through Ghast Rhymi, whoever he was. Through Aries, or through the red witch!

Yes, most of all, I thought, through Medea -- Medea, whom I loved!

At dusk, two maidens -- helot-servants -- came, bringing food and a change of garments. I ate hurriedly, dressed in the plain, fine-textured tunic and shorts, and drew about me the royal blue cloak they had carried. A mask of golden cloth I dangled undecidedly, until one of the maidens spoke:

"We are to guide you when you are ready, Lord," she reminded me.

"I'm ready now," I said, and followed the pair.

A pale, concealed lighting system of some sort made the hallways bright. I was taken to Medea's apartment, with its singing fountain under the high dome. The red witch was there breathtakingly lovely in a clinging robe of pure white. Above the robe her naked shoulders gleamed smoothly. She wore a scarlet cloak. I wore a blue one.

The helots slipped away. Medea smiled at me, but I noticed a wire-taut tenseness about her, betrayingly visible at the corners of her lips and in her eyes. A pulse of expectation seemed to beat out from her.

"Are you ready, Ganelon?"

"I don't know," I said. "It depends, I suppose. Don't forget that my memory's gone."

"It may return tonight, some of it anyway," she said.

"But you will take no part in the ritual, at least until after the sacrifice. It will be better if you merely watch. Since you do not remember the rites, you'd best leave those to the rest of the Coven."

"Matholch?"

"And Edeyrn," Medea said. "Ghast Rhymi will not come. He never leaves this castle, nor will he unless the need is very great. He is old, too-old."

I frowned at the red witch. "Where are we going?" I asked.

"To Caer Secaire. I told you there had been no sacrifice since I went to Earth-world to search for you. It is past time."

"What am I supposed to do?"

She put out a slender hand and touched mine.

"Nothing, till the moment comes. You will know then. But meantime you must watch -- no more than that. Put
on your mask now."

She slipped on a small black mask that left the lower half of her face visible.
I donned the golden mask. I followed Medea to a curtained archway, and through it.

We were in a courtyard. Two horses stood waiting, held by grooms. Medea mounted one and I the other.

Overhead the sky had darkened. A huge door lifted in the wall. Beyond, a roadway stretched toward the distant forest.

The somber, angry disc of the red sun, swollen and burning with a dull fire, touched the crest of the mountain barrier.

Swiftly it sank. Darkness came across the sky with a swooping rush. A million points of white light became visible. In the faint starshine Medea's face was ghost-pale.

Through the near-darkness her eyes glowed.

Faintly, and from far away, I heard a thin, trumpeting call. It was repeated.

Then silence -- and a whispering that rose to a rhythmic thudding of shod hoofs.

Past us moved a figure, a helot guardsman, unmasked, unspeaking, his gaze turned to the waiting gateway.

Then another -- and another. Until three score of soldiers had gone past, and after them nearly three score of maidens -- the slave-girls.

On a light, swift-looking roan stallion Matholch came by, stealing a glance at me from his yellow eyes. A cloak of forest green swirled from his shoulders.

Behind him, the tiny form of Edeyrn, on a pony suited to her smallness. She was still cowled, her face hidden, but she now wore a cloak of purest yellow.

Medea nodded at me. We touched our heels to the horses' flanks and took our places in the column. Behind us other figures rode, but I could not see them clearly. It was too dark.

Through the gateway in the wall we went, still in silence save for the clopping of hoofs. We rode across the plain. The edges of the forest reached out toward us and swallowed us.

I glanced behind. An enormous bulk against the sky showed the castle I had left.

We rode under heavy, drooping branches. These were not the black trees of Medea's garden, but they were not normal either. I could not tell why an indefinable sense of strangeness reached out at me from the dun shadows above and around us.

After a long time the ground dipped at our feet, and we saw below us the road's end. The moon had risen belatedly. By its yellow glare there materialized from the deep valley below us a sort of tower, a dark, windowless structure almost Gothic in plan, as though it had thrust itself from the black earth, from the dark grove of ancient and alien trees.

Caer Secaire!

I had been here before. Ganelon of the Dark World knew this spot well. But I did not know it; I sensed only that unpleasant familiarity, the deja vu phenomenon, known to all psychologists, coupled with a curious depersonalization, as though my own body, my mind, my very soul, felt altered and strange.

Caer Secaire. Secaire? Somewhere, in my studies, I had encountered that name. An ancient rite, in -- in Gascony, that was it!

The Mass of Saint Secaire!

And the man for whom that Black Mass is said -- dies. That, too, I remembered. Was the Mass to be said for Ganelon tonight?

This was not the Place of Llyr. Somehow I knew that. Caer Llyr was elsewhere and otherwise, not a temple, not a place visited by worshipers. But here in Caer Secaire, as in other temples throughout the Dark Land, Llyr might be summoned to his feasting, and, summoned, would come.

Would Ganelon be his feast tonight? I clenched the reins with nervous hands. There was some tension in the air that I could not quite understand. Medea was calm beside me. Edeyrn was always calm. Matholch, I could swear, had nothing to take the place of nerves. Yet in the night there was tension, as if it breathed upon us from the dark trees along the roadside.

Before us, in a silent, submissive flock, the soldiers and the slave-girls went. Some of the soldiers were armed. They seemed to be herding the rest, their movements mechanical, as if whatever had once made them free-willed humans was now asleep. I knew without being told the purpose for which those men and maidens were being driven toward Caer Secaire. But not even these voiceless mindless victims were tense. They went blindly to their doom.

No, the tension came from the dark around us.

Someone, something, waiting in the night!

VII. Men of the Forest

FROM out of the dark woods, suddenly, startlingly, a trumpet-note rang upon the air. In the same instant there
was a wild crashing in the underbrush, an outburst of shouts and cries, and the night was laced by the thin lightnings of unfamiliar gunfire. The road was suddenly thronging with green-clad figures who swarmed about the column of slaves ahead of us, grappling with the guards, closing in between us and the mindless victims at our forefront.

My horse reared wildly. I fought him hard, forcing him down again, while stirrings of the old red rage I had felt before mounted in my brain. Ganelon, at sight of the forest people, struggled to take control. Him too I fought. Even in my surprise and bewilderment, I saw in this interruption the possibility of succor. I cracked my rearing horse between the ears with clubbed rein-loops and struggled to keep my balance.

Beside me Medea had risen in her stirrups and was sending bolt after arrowy bolt into the green melee ahead of us, the dark rod that was her weapon leaping in her hand with every shot. Edeyrn had drawn aside, taking no part in the fight. Her small cowled figure sat crouching in the saddle, but her very stillness was alarming. I had the feeling she could end the combat in a moment if she chose.

As for Matholch, his saddle was empty. His horse was already crashing away through the woods, and Matholch had hurled himself headlong into the fight, snarling joyously. The sound sent cold shudders down my spine. I could see that his green cloak covered a shape that was not wholly manlike, and the green people veered away from him as he plunged through their throngs toward the head of the column.

The woodsfolk were trying a desperate rescue. I realized that immediately. I saw too that they dared not attack the Coven itself. All their efforts were aimed at overpowering the robot-like guards so that the equally robotlike victims might be saved from Llyr. And I could see that they were failing.

For the victims were too apathetic to scatter. All will had long ago been drained away from them. They obeyed Orders -- that was all. And the forest people were leaderless. In a moment or two I realized that, and knew why. It was my fault. Edward Bond may have planned this daring raid, but through my doing, he was not here to guide them. And already the abortive fight was nearly over.

Medea's flying fiery arrows struck down man after man. The mindless guards fired stolidly into the swarms that surged about them, and Matholch's deep-throated, exultant, snarling yells as he fought his way toward his soldiers were more potent than weapons. The raiders shrank back from the sound as they did not shrink from gunfire. In a moment, I knew, Matholch would reach his men, and organized resistance would break the back of this unguided mutiny.

For an instant my own mind was a fierce battleground. Ganelon struggled to take control, and Edward Bond resisted him savagely.

As Ganelon I knew my place was beside the wolfling; every instinct urged me forward to his side. But Edward Bond knew better. Edward Bond too knew where his rightful place should be.

I shook up my golden mask so that my face was visible. I drove my heels into my horse's sides and urged him headlong down the road behind Matholch. The sheer weight of the horse gave me an advantage Matholch, afoot, did not have. The sound of drumming hoofs and the lunging shoulders of my mount opened a way for me. I rose in the stirrups and shouted with Ganelon's deep, carrying roar:

"Bond! Bond! Edward Bond!"

The rebels heard me. For an instant the battle around the column wavered as every green-clad man paused to look back. Then they saw their lost leader, and a great echoing hail swept then-ranks.

"Bond! Edward Bond!"

The forest rang with it, and there was new courage in the sound. Matholch's wild snarl of rage was drowned in the roar of the forest men as they surged forward again to the attack.

Out of Ganelon's memories I knew what I must do. The foresters were dragging down guard after guard, careless of the gunfire that mowed their disordered ranks. But only I could save the prisoners. Only Ganelon's voice could pierce the daze that held them.

I kicked my frantic horse forward, knocking guards left and right, and gained the head of the column.

"In the forest!" I shouted. "Waken and run! Run hard!"

There was an instant forward surge as the slaves, still tranced in their dreadful dream, but obedient to the voice of a Coven member, lurched through the thin rank of their guard. The whole shape of the struggle changed as the core of it streamed irresistibly forward across the road and into the darkness of the woods.

The green-clad attackers fell back to let the slaves through. It was a strange, voiceless flight they made. Not even the guards shouted, though they fired and fired again upon the retreating column, their faces as blank as if they slept without dreams.

My flesh crawled as I watched that sight -- the men and women fleeing for their lives, the armed soldiers shooting them down, and the faces of them all utterly without expression. Voiceless they ran and voiceless they died when the gun-bolts found them.

I wrenched my horse around and kicked him in the wake of the fleeing column. My golden mask slipped
sidewise and I tore it off, waving to the scattering foresters, the moonlight catching brightly on its gold.

"Save yourselves!" I shouted, "Scatter and follow me!"

Behind me I heard Matholch's deep snarl, very near. I glanced over one shoulder as my horse plunged across
the road. The shape-changer's tall figure faced me across the heads of several of his soldiers. His face was a wolflike
snarling mask, and as I looked he lifted a dark rod like the one Medea had been using. I saw the arrow of white fire
leap from it, and ducked in the saddle.

The movement saved me. I felt a strong tug at my shoulders where the blue cape swirled out, and heard the tear
of fabric as the bolt ripped through it and plunged hissing into the dark beyond. My horse lunged on into the woods.

Then the trees were rustling all about me, and my bewildered horse stumbled and tossed up his head,
whinnying in terror. Beside me in the dark a soft voice spoke softly.

"This way," it said, and a hand seized the bridle.
I let the woodsman lead me into the darkness.

It was just dawn when our weary column came at last to the end of the journey, to the valley between cliffs
where the woodsmen had established their stronghold. All of us were tired, though the blank-faced slaves we had
rescued trudged on in an irregular column behind me, unaware that then" feet were torn and their bodies drooping
with exhaustion.

The forest men slipped through the trees around us, alert for followers. We had no wounded with us. The bolts
the Coven shot never wounded. Whoever was struck fell dead in his tracks.

In the pale dawn I would not have known the valley before me for the headquarters of a populous clan. It
looked quite empty except for scattered boulders, mossy slopes, and a small stream that trickled down the middle,
pink in the light of sunrise.

One of the men took my horse then, and we went on foot up the valley, the robot slaves crowding behind. We
seemed to be advancing up an empty valley. But when we had gone half its length, suddenly the woodsman at my
right laid his hand upon my arm, and we paused, the rabble behind us jostling together without a murmur. Around
me the woodsmen laughed softly. I looked up.

She stood high upon a boulder that overhung the stream. She was dressed like a man in a tunic of soft, velvety
green, cross-belted with a weapon swinging at each hip, but her hair was a fabulous mantle streaming down over her
shoulders and hanging almost to her knees in a cascade of pale gold that rippled like water. A crown of pale gold
leaves the color of the hair held it away from her face, and under the shining chaplet she looked down and smiled at
us. Especially she smiled at me -- at Edward Bond.

And her face was very lovely. It had the strength and innocence and calm serenity of a saint's face, but there
was warmth and humor in the red lips. Her eyes were the same color as her tunic, deep green, a color I had never
seen before in my own world.

"Welcome back, Edward Bond," she said in a clear, sweet gently hushed voice, as if she had spoken softly for
so many years that even now she did not dare speak aloud.

She jumped down from the boulder, very lightly, moving with the sureness of a wild creature that had lived all
its lifetime in the woods, as indeed I suppose she had. Her hair floated about her as lightly as a web, settling only
slowly about her shoulders as she came forward, so that she seemed to walk in a halo of her own pale gold.

I remembered what the woodsman Ertu had said to me in Medea's garden before her arrow struck him down.

"Aries could convince you, Edward! Even if you're Ganelon, let me take you to Aries!"

I stood before Aries now. Of that I was sure. And if I had needed any conviction before that the woodsmen's
cause was mine, this haloed girl would have convinced me with her first words. But as for Ganelon --

How could I know what Ganelon would do?

That question was answered for me. Before my lips could frame words, before I could plan my next reaction,
Aries came toward me, utterly without pretense or consciousness of the watching eyes. She put her hands on my
shoulders and kissed me on the mouth.

And that was not like Medea's kiss -- no! Aries' lips were cool and sweet, not warm with the dangerous,
alluring honey-musk of the red witch. That intoxication of strange passion I remembered when I had held Medea in
my arms did not sweep me now. There was a -- a purity about Aries, an honesty that made me suddenly, horribly
homesick for Earth.

She drew back. Her moss-green eyes met mine with quiet understanding. She seemed to be waiting.

"Aries," I said, after a moment.

And that seemed to satisfy her. The vague question that had begun to show on her face was gone.
"I wondered," she said. "They didn't hurt you, Edward?"

Instinctively I knew what I had to say.

"No. We hadn't reached Caer Secaire. If the woodsmen hadn't attacked -- well, there'd have been a sacrifice."
Aries reached out and lifted a corner of my torn cloak, her slim fingers light on the silken fabric.

"The blue robe," she said. "Yes, that is the color the sacrifice wears. The gods cast their dice on our side tonight, Edward. Now as for this foul thing, we must get rid of it."

Her green eyes blazed. She ripped the cloak from me, tore it across and dropped it to the ground.

"You will not go hunting again alone," she added. "I told you it was dangerous. But you laughed at me. I'll wager you didn't laugh when the Coven slaves caught you! Or was that the way of it?"

I nodded. A slow, deep fury was rising within me. So blue was the color of sacrifice, was it? My fears hadn't been groundless. At Caer Secaire I would have been the offering, going blindly to my doom. Matholch had known, of course. Trust his wolf-mind to appreciate the joke. Edeyrn, thinking her cool, inhuman thoughts in the shadow of her hood, she had known too. And Medea?

Medea!

She had dared betray me! Me, Ganelon!

The Opener of the Gate, the Chose of Llyr, the great Lord Ganelon! They dared! Black thunder roared through my brain. I thought: By Llyr, but they'll suffer for this! They'll crawl to my feet like dogs. Begging my mercy!

Rage had opened the floodgates, and Edward Bond was no more than a set of thin memories that had slipped from me as the blue cloak had slipped from my shoulders -- the blue cloak of the chosen sacrifice, on the shoulders of the Lord Ganelon!

I blinked blindly around the green-clad circle. How had I come here? How dared these woodsrunners stand in defiance before me? Blood roared in my ears and the woodland swam around me. When it steadied I would draw my weapon and reap these upstarts as a mower reaps his wheat.

But wait!

First, the Coven, my sworn comrades, had betrayed me. Why, why! They had been glad enough to see me when they brought me back from the other world, the alien land of Earth. The woodsmen I could slay whenever I wished it -- the other problem came first. And Ganelon was a wise man. I might need these woods-people to help me in my vengeance. Afterward -- ah, afterward!

I strove hard with memory. What could have happened to turn the Coven against me? I could have sworn this had not been Medea's original intention -- she had welcomed me back too sincerely for that. Matholch could have influenced her, but again, why, why? Or perhaps it was Edeyrn, or the Old One himself, Ghast Rhymi.-In any case, by the Golden Window that opens on the Abyss, they'd learn their error!

"Edward!" a woman's voice, sweet and frightened, came to me as if from a great distance. I fought my way up through a whirlpool of fury and hatred. I saw a pale face haloed in floating hair, the green eyes troubled. I remembered.

Beside Aries stood a stranger, a man whose cold gray eyes upon mine provided the shock I needed to bring me back to sanity. He looked at me as if he knew me -- knew Ganelon. I had never seen the man before.

He was short and sturdy, young-looking in spite of the gray flecks in his close-cropped beard. His face was tanned so deeply it had almost the color of the brown earth. In his close-fitting green suit he was the perfect personification of a woodsrunner, a glider through the forest, unseen and dangerous. Watching the powerful flex of his muscles when he moved, I knew he would be a bad antagonist. And there was deep antagonism in the way he looked at me.

A white, jagged scar had knotted his right cheek, quirking up his thin mouth so that he wore a perpetual crooked, sardonic half-grin. There was no laughter in those gelid gray eyes, though.

And I saw that the circle of woodsmen had drawn back, ringing us, watching.

"No, Lorryn," Aries cried. "Don't hurt him."

Lorryn thrust his face into mine.

"Ganelon!" he said.

And at the name a whisper of fear, of hatred, murmured around the circle of woodsfolk. I saw furtive movements, hands slipping quietly toward the hilts of weapons. I saw Aries' face change.

The old-time cunning of Ganelon came to my aid.

"No," I said, rubbing my forehead. "I'm Bond, all right. It was the drug the Coven gave me. It's still working."

"What drug?"

"I don't know," I told Lorryn. "It was in Medea's wine that I drank. And the long journey tonight has tired me."

I took a few unsteady paces aside and leaned against the boulder, shaking my head as though to clear it. But my ears were alert. The low murmur of suspicion was dying.

Cool fingers touched mine.

"Oh, my dear," Aries said, and whirled on Lorryn. "Do you think I don't know Edward Bond from Ganelon?
"Lorryn, you're a fool!"

"If the two weren't identical, we'd never have switched them in the first place," Lorryn said roughly. "Be sure, Aries. Very sure!"

Now the whispering grew again. "Better to be sure," the woodsmen murmured. "No risks, Aries! If this is Ganelon, he must die."

The doubt came back into Aries' green eyes. She thrust my hands away and stared at me. And the doubt did not fade.

I gave her glance for glance.

"Well, Aries?" I said.

Her lips quivered.

"It can't be. I know, but Lorryn is right. You know that; we can take no risks. To have the devil Ganelon back, after all that's happened, would be disastrous."

Devil, I thought. The devil Ganelon. Ganelon had hated the woodsfolk, yes. But now he had another, greater hatred. In his hour of weakness, the Coven had betrayed him. The woodsfolk could wait. Vengeance could not. It would be the devil Ganelon who would bring Caer Secaire and the Castle crashing down about the ears of the Coven!

Which would mean playing a careful game!

"Yes, Lorryn is right," I said. "You've no way of knowing I'm not Ganelon. Perhaps you know it, Aries -- " I smiled at her " -- but there must be no chances taken. Let Lorryn test me."

"Well?" Lorryn said, looking at Aries.

Doubtfully she glanced from me to the bearded man.

"I -- very well, I suppose."

Lorryn barked laughter.

"My tests might fail. But there is one who can see the truth. Freydis."

"Let Freydis test me," I said quickly, and was rewarded by seeing Lorryn hesitate.

"Very well," he said at last. "If I'm wrong, I'll apologize now. But if I'm right, I'll kill you, or try to. There's only one other life I'd enjoy taking the more, and the shape-changer isn't in my reach -- yet."

Again Lorryn touched his scarred cheek. At the thought of Lord Matholch, warmth came into his gray eyes; a distant ember burned for an instant there. I had seen hatred before. But not often had I seen such hatred as Lorryn held for -- the wolfin?"

Well, let him kill Matholch, if he could! There was another, softer throat in which I wanted to sink my fingers. Nor could all her magic protect the red witch when Ganelon came back to Caer Secaire, and broke the Coven like rotten twigs in his hands!

Again the black rage thundered up like a deluging tide. That fury had wiped out Edward Bond -- but it had not wiped out Ganelon's cunning.

"As you like, Lorryn," I said quietly. "Let's go to Freydis now."

He nodded shortly. Lorryn on one side of me, Aries, puzzled and troubled, on the other, we moved up the valley, surrounded by the woodsfolk. The dazed slaves surged ahead.

The canyon walls closed in. A cave-mouth showed in the granite ahead.

We drew up in a rough semi-circle facing that cavern. Silence fell, broken by the whispering of leaves in the wind. The red sun was rising over the mountain wall.

Out of the darkness came a voice, deep, resonant, powerful.

"I am awake," it said. "What is your need?"

"Mother Freydis, we have helots captured from the Coven," Aries said quickly. "The sleep is on them."

"Send them in to me."

Lorryn gave Aries an angry look. He pushed forward.

"Mother Freydis!" he called.

"I hear."

"We need your sight. This man, Edward Bond -- I think he is Ganelon, came back from the Earth-world where you sent him."

There was a long pause.

"Send him into me," the deep voice finally said. "But first the helots."

At a signal from Lorryn the woodsfolk began herding the slaves toward the cavemouth. They made no resistance. Empty-eyed, they trooped toward that cryptic darkness, and one by one, vanished.

Lorryn looked at me and jerked his head toward the cavern. I smiled.

"When I come out, we shall be friends again as before." I said.
His eyes did not soften.
"Freydis must decide that."

I turned to Aries.
"Freydis shall decide," I said. "But there is nothing to fear, Aries. Remember that. I am not Ganelon."

She watched me, afraid, unsure, as I stepped back a pace or two.
The silent throng of woodsfolk stared, waiting warily. They had their weapons ready. I laughed softly and turned. I walked toward the cave-mouth. The blackness swallowed me.

VIII. Freydis

Strange to relate, I felt sure of myself as I walked up the sloping ramp in the darkness. Ahead of me, around a bend, I could see the glimmer of firelight, and I smiled. It had been difficult to speak with these upstart woodsrunners as if they were my equals, as if I were still Edward Bond. It would be difficult to talk to their witchwoman as if she had as much knowledge as a Lord of the Coven. Some she must have, or she could never have managed the transfer which had sent me into the Earth-world and brought out Edward Bond. But I thought I could deceive her or anyone these rebels had to offer me.

The small cave at the turn of the corridor was empty except for Freydis. Her back was to me. She crouched on her knees before a small fire that burned, apparently without fuel, in a dish of crystal. She wore a white robe, and her white hair lay in two heavy braids along her back. I stopped, trying to feel like Edward Bond again, to determine what he would have said in this moment. Then Freydis turned and rose.

She rose tremendously. Few in the Dark World can look me in the eye, but Freydis' clear blue gaze was level with my own. Her great shoulders and great, smooth arms were as powerful as a man's, and if age was upon her, it did not show in her easy motions or in the timeless face she turned to me. Only in the eyes was knowledge mirrored, and I knew as I met them that she was old indeed.

"Good morning, Ganelon," she said in her deep, serene voice.

I gaped. She knew me as surely as if she read my mind.

Yet I was sure, or nearly sure, that no one in the Dark World could do that. For a moment I almost stammered. Then pride came to my rescue.

"Good day, old woman," I said. "I come to offer you a chance for your life, if you obey me. We have a score to settle, you and I."

She smiled.
"Sit down, Covenanter," she said. "The last time we matched strength, you traded worlds. Would you like to visit Earth again, Lord Ganelon?"

It was my turn to laugh.
"You could not. And if you could, you wouldn't, after you hear me."

Her blue eyes searched mine. -- "You want something desperately," she said in a slow voice. "Your very presence here, offering me terms, proves that. I never thought to see the Lord Ganelon face to face unless he was in chains or in a berserker battle-mood. Your need of me, Lord Ganelon, serves as chains for you now. You are fettered by your need, and helpless."

She turned back to the fire and sat down with graceful smoothness, her huge body under perfect control. Across the flame in its crystal bowl she faced me.

"Sit down, Ganelon," she said again, "and we will bargain, you and I. One thing first -- do not waste my time with lies. I shall know if you tell the truth, Covenanter. Remember it."

I shrugged.
"Why should I bother with lies for such as you?" I said. "I have nothing to hide from you. The more of truth you know, the stronger you'll see my case is. First, though -- those slaves who came in before me?"

She nodded toward the back of the cave.
"I sent them into the inner mountain. They sleep. You know the heavy sleep that comes upon those loosed from the Spell, Lord Ganelon."

I sat down, shaking my head.
"No -- no, that I can not quite remember. I -- you asked for the truth, old woman. Listen to it, then. I am Ganelon, but the false memories of Edward Bond still blur my mind. As Edward Bond I came here -- but Aries told me one thing that brought Ganelon back. She told me that the Coven, in my hour of weakness, had dressed me in the blue cloak of the sacrifice and I was riding for Caer Secaire when the woodsmen attacked us. Must I tell you now what my first wish in life is, witch-woman?"

"Revenge on the Coven." She said it hollowly, her eyes burning into mine through the fire. "This is the truth you speak, Covenanter. You want my help in getting your vengeance. What can you offer the woodsfolk in return, save fire and sword? Why should we trust you, Ganelon?"
Her ageless eyes burned into mine.
"Because of what you want. My desire is vengeance. Yours is -- what?"
"The end of Llyr -- the ruin of the Coven!" Her voice was resonant and her whole ageless face lighted as she spoke.
"So. I too desire the ruin of the Coven and the end -- the end of Llyr." My tongue stumbled a little when I said that. I was not sure why. True, I had been sealed to Llyr in a great and terrible ceremony once -- I could recall that much. But Llyr and I were not one. We might have been, had events run differently. I shuddered now at the thought of it.

Yes, it was Llyr's end I desired now -- must desire, if I hoped to live.
Freydis looked at me keenly. She nodded.
"Yes -- perhaps you do. Perhaps you do. What do you want of us then, Ganelon?"
I spoke hastily:
"I want you to swear to your people that I am Edward Bond. No -- wait! I can do more for them now than Edward Bond could do. Give thanks that I am Ganelon again, old woman! For only he can help you. Listen to me. Your foresters could not kill me. I know that. Ganelon is deathless, except on Llyr's altar. But they could fetter me and keep me prisoner here until you could work your spells again and bring Edward Bond back. And that would be foolish for your sake and for mine.
"Edward Bond has done all he knows for you. Now it's Ganelon's turn. Who else could tell you how Llyr is vulnerable, or where Matholch keeps his secret weapons, or how one can vanquish Edeyrn? These things I know -- or I once knew. You must help me win my memories back, Freydis. After that -- " I grinned fiercely.
She nodded. Then she sat quiet for awhile.
"What do you want me to do, then, Ganelon?" she asked, at last.
"Tell me first about the bridging of the worlds," I said eagerly. "How did you change Edward Bond and me?"
Freydis smiled grimly.
"Not so fast, Covenanter!" she answered. "I have my secrets too! I will answer only a part of that question. We wrought the change, as you must guess, simply to rid ourselves of you. You must remember how fiercely you were pressing us in your raids for slaves, in your hatred of our freedom. We are a proud people, Ganelon, and we would not be oppressed forever. But we knew there was no death for you except in a way we could not use.
"I knew of the twin world of Earth. I searched, and found Edward Bond. And after much striving, much effort, I wrought a certain transition that put you in the other world, with memories of Edward Bond blotting out your own.
"We were rid of you. True, we had Edward Bond with us, and we did not trust him either. He was too like you. But him we could kill if we must. We did not. He is a strong man, Covenanter. We came to trust him and rely upon him. He brought us new ideas of warfare. He was a good leader. It was he who planned the attack upon the next Coven sacrifice --"
"An attack that failed," I said. "Or would have failed, had I not swung my weight into the balance. Edward Bond had Earth-knowledge, yes. But his weapons and defenses could only have breached the outer walls of the Coven. You know there are powers, seldom used, but powers that do not fail!"
"I know," she said. "Yes, I know, Ganelon. Yet we had to try, at least. And the Coven had been weakened by losing you. Without you, none of the others would have dared call on Llyr, except perhaps Ghast Rhymi." She stared deeply into the fire. "I know you Ganelon. I know the pride that burns in your soul. And I know, too, that vengeance, now, would be very dear to your heart. Yet you were sealed to Llyr, once, and you have been Covenanter since your birth. How do I know you can be trusted?"
I did not answer that. And, after a moment, Freydis turned toward the smoke-blackened wall. She twitched aside a curtain I had not seen. There, in an alcove, was a Symbol, a very ancient Sign, older than civilization, older than human speech.
Yes, Freydis would be one of the few who knew what that Symbol meant. As I knew.
"Now will you swear that you speak with a straight tongue?" she said.
I moved my hand in the ritual gesture that bound me irrevocably. This was an oath I could not break without being damned and doubly damned, in this world and the next. But I had no hesitation. I spoke truth!
"I will destroy the Coven!" I said.
"And Llyr?"
"I will bring an end to Llyr!"
But sweat stood out on my forehead as I said that. It was not easy.
Freydis twitched the curtain back into place. She seemed satisfied.
"I have less doubt now," she said. "Well, Ganelon, the Norns weave strange threads together to make warp and woof of destiny. Yet there is a pattern, though sometimes we cannot see it. I did not ask you to swear fealty to the
"I realize that."
"You would not have sworn it," she said. "Nor is it necessary. After the Coven is broken, after an end is made to Llyr, I can guard the people of the woods against even you, Ganelon. And we may meet in battle then. But until then we are allies. I will name you -- Edward Bond."
"I'll need more than that," I told her. "If the masquerade is to pass unchallenged."
"No one will doubt my word," Freydis said. Firelight flickered on her great frame, her smooth, ageless face. "I cannot fight the Coven till I get back my memories. The memories of Ganelon. All of them."
She shook her head.
"Well," she said slowly, "I cannot do too much on that score. Something, yes. But writing on the mind is touchy work, and memories, once erased, are not easily brought back. You still have Edward Bond's memories?"
I nodded.
"But my own, no. They're fragmentary. I know, for example, that I was sealed to Llyr, but the details I don't remember."
"It would be as well, perhaps, to let that memory stay lost," Freydis said somberly. "But you are right. A dulled tool is no use. So listen."
Rock-still, boulder-huge, she stood across the fire from me. Her voice deepened.

"I sent you into the Earth-World. I brought your double, Edward Bond, here. He helped us, and -- Aries loved him, after a while. Even Lorrryn, who does not trust many, grew to trust Edward Bond."

"Who is Lorrryn?"

"One of us now. Not always. Years ago he had his cottage in the forest; he hunted, and few were as cunning as Lorrryn in the chase. His wife was very young. Well, she died. Lorrryn came back to this cottage one night and found death there, and blood, and a wolf that snarled at him from a bloody muzzle. He fought the wolf; he did not kill it. You saw Lorrryn's cheek. His whole body is like that, scarred and wealed from wolf-fangs."

"A wolf?" I said. "Not --"

"A wolfling," Freydis said. "Lycanthrope, shape-changer. Matholch. Some day Lorrryn will kill Matholch. He lives only for that."

"Let him have the red dog," I said contemptuously. "If he likes, I'll give him Matholch flayed!"

"Aries and Lorrryn and Edward Bond have planned their campaign," Freydis said. "They swore that the last Sabbat had been celebrated in the Dark World. Edward Bond showed them new weapons he remembered from Earth. Such weapons have been built and are in the arsenal, ready. No Sabbats have been held since Medea and her followers went searching to Earth; the woodsfolk held their hands. There was nothing to strike at except old Ghast Rhymi. Now Medea and the rest of the Coven are back, they're ready. If you lead against them Ganelon, the Coven can be smashed, I think."

"The Coven has its own weapons," I muttered. "My memory fails -- but I think Edeyrn has a power that -- that - - " I shook my head. "No, it's gone."

"How can Llyr be destroyed?" Freydis asked.

"I -- I may have known once. Not now."

"Look at me," she said. And leaned forward, so that it seemed as though her ageless face was bathed in the fires.

Through the flames her gaze caught mine. Some ancient power kindled her clear blue eyes. Like pools of cool water under a bright sky -- pools deep and unstirring, where one could sink into an azure silence forever and ever....

As I looked the blue waters clouded, grew dark. I saw a great black dome against a black sky. I saw the thing that dwells deepest and most strongly in the mind of Ganelon -- Caer Llyr!

The dome swam closer. It loomed above me. Its walls parted like dark water, and I moved in memory down the great smooth, shining corridor that leads to Llyr Himself.

IX. Realm of the Superconscious

ONWARD I moved. Faces flickered before me -- Matholch's fierce grin, Edeyrn's cowled head with its glance that chilled, Medea's savage beauty that no man could ever forget, even in his hatred. They looked at me, mistrustfully. Their lips moved in soundless question. Curiously, I knew these were real faces I saw.

In the magic of Freydis' spell I was drifting through some dimensionless place where only the mind ventures, and I was meeting here the thoughts of the questing Coven, meeting the eyes of their minds. They knew me. They asked me fiercely a question I could not hear.

Death was in the face Matholch's mind turned to mine. All his hatred of me boiled furiously in his yellow wolf-eyes. His lips moved -- almost I could hear him. Medea's features swam up before me, blotting out the shape-changer. Her red mouth framed a question -- over and over.

"Ganelon, where are you? Ganelon, my lover, where are you? You must come back to us. Ganelon!"

Edeyrn's faceless head moved between Medea and me, and very distantly I heard her cool, small voice echoing the same thought.

"You must return to us, Ganelon. Return to us and die!"

Anger drew a red curtain between those faces and myself.

"Traitors, betrayers, false to the Coven oath! How dared they threaten Ganelon, the strongest of them all? How dared they -- and why?"

"Why?"

My brain reeled with the query. And then I realized there was one face missing from the Coven. These three had been searching the thought-planes for me, but what of Ghast Rhymi?

Deliberately I groped for the contact of his mind.

I could not touch him. But I remembered. I remembered Ghast Rhymi, whose face Edward Bond had never seen. Old, old, old, beyond good and evil, beyond fear and hatred, this was Ghast Rhymi, the wisest of the Coven. If he willed, he would answer my groping thought. If he willed not, nothing could force him. Nothing could harm the Eldest, for he lived on only by force of his own will.

He could end himself instantly, by the power of a thought. And he is like a candle flame, flickering away as one
grasps at him. Life holds nothing more for him. He does not cling to it. If I had tried to seize him he could slip like fire or water from my grasp. He would as soon be dead as alive. But unless he must, he would not break his deep calm to think the thought that would change him into clay.

His mind and the image of his face remained hidden from my quest. He would not answer. The rest of the Coven still kept calling to me with a strange desperation in their minds -- return and die, Lord Ganelon! But Ghast Rhymi did not care.

So I knew that it was at his command the death-sentence had been passed. And I knew I must seek him out and somehow force an answer from him -- from Ghast Rhymi, upon whom all force was strengthless. Yet force him I must!

All this while my mind had been drifting effortlessly down the great hallway of Caer Llyr, borne upon that tide that flows deepest in the mind of Ganelon, the Chosen of Llyr -- Ganelon, who must one day return to Him Who Waits.... As I was returning now.

A golden window glowed before me. I knew it for the window through which great Llyr looks out upon his world, the window through which he reaches for his sacrifices. And Llyr was hungry. I felt his hunger. Llyr was roaming the thought-planes too, and in the moment that I realized again where my mind was drifting, I felt suddenly the stir of a great reaching, a tentacular groping through the golden window.

Llyr had sensed my presence in the planes of his mind. He knew his Chosen. He stretched out his godlike grasp to fold me into that embrace from which there is no returning.

I heard the soundless cry of Medea, vanishing like a puff of smoke out of the thought-plane as she blanked her mind defensively from the terror. I heard Matholch's voiceless howl of pure fear as he closed his own mind. There was no sound from Edeyrn, but she was gone as utterly as if she had never thought a thought. I knew the three of them sat somewhere in their castle, eyes and minds closed tightly, willing themselves to blankness as Llyr roamed the thought-lanes seeking the food he had been denied so long.

A part of me shared the terror of the Coven. But a part of me remembered Llyr. For an instant, almost I recaptured the dark ecstasy of that moment when Llyr and I were one, and the memory of horror and of dreadful joy came back, the memory of a power transcending all earthly things.

This was mine for the taking, if I opened my mind to Llyr. Only one man in a generation is sealed to Llyr, sharing in his godhead, exulting with him in the ecstasy of human sacrifice -- and I was that one man if I chose to complete the ceremony that would make me Llyr's. If I chose, if I dared -- ah!

The memory of anger came back. I must not release myself into that promised joy. I had sworn to put an end to Llyr. I had sworn by the Sign to finish the Coven and Llyr. Slowly, reluctantly, my mind pulled itself back from the fringing contact of those tentacles.

The moment that tentative contact was broken, a full tide of horror washed over me. Almost I had touched -- him. Almost I had let myself be defiled beyond all human understanding by the terrible touch of -- of -- There is no word in any language for the thing that was Llyr. But I understood what had been in my mind as Edward Bond when I realized that to dwell on the same soil as Llyr, share the same life, was a defilement that made earth and life too terrible to endure -- if one knew Llyr.

I must put an end to him. In that moment, I knew I must stand up and face the being we knew as Llyr and fight him to his end. No human creature had ever fully faced him -- not even his sacrifices, not even his Chosen. But his slayer would have to face him, and I had sworn to be his slayer.

Shuddering, I drew back from the black depths of Caer Llyr, struggled to the surface of that still blue pool of thought which had been Freydis' eyes. The darkness ebbed around me and by degrees the walls of the cave came back, the fuelless flame, the great smooth-limbed sorceress who held my mind in the motionless deeps of her spell.

As I returned to awareness, slowly, slowly, knowledge darted through my mind in lightning-flashes, too swiftly to shape into words.

I knew, I remembered.

Ganelon's life came back in pictures that went vividly by and were printed forever on my brain. I knew his powers; I knew his secret strengths, his hidden weaknesses. I knew his sins. I exulted in his power and pride. I returned to my own identity and was fully Ganelon again. Or almost fully.

But there were still hidden things. Too much had been erased from my memory to come back in one full tide. There were gaps, and important gaps, in what I could recall.

The blue darkness cleared. I looked in Freydis' clear gaze across the fire. I smiled, feeling a cold and arrogant confidence welling up in-me.

"You have done well, witch-woman," I told her.

"You remember?"

"Enough. Yes, enough." I laughed. "There are two trials before me, and the first is the easier of the two, and it
is impossible. But I shall accomplish it."

"Ghast Rhymi?" she asked in a quiet voice.

"How do you know that?"

"I know the Coven. And I think, but I am not sure, that in Ghast Rhymi's hands lie the secrets of the Coven and of Llyr. But no man can force Ghast Rhymi to do his bidding."

"I'll find the way. Yes, I will even tell you what my next task is. You shall have the truth as I just learned it, witch. Do you know of the Mask and the Wand?"

Her eyes on mine, she shook her head. "Tell me. Perhaps I can help."

I laughed again. It was so fantastically implausible that she and I should stand here, sworn enemies of enemy clans, planning a single purpose together! Yet there was only a little I hid from her that day, and I think not very much that Freydis hid from me.

"In the palace of Medea, is a crystal mask and the silver Wand of Power," I told her. "What that Wand is I do not quite remember -- yet. But when I find it, my hands will know. And with it I can overcome Medea and Matholch and all their powers. As for Edeyrn -- well, this much I know. The Mask will save me from her."

I hesitated.

Medea I knew now. I knew the strange hungers and the stranger thirsts that drove the beautiful red and white witch to her trystings. I knew now, and shuddered a little to think of it, why she took her captives with those arrows of fire that did not kill at all, but only stunned them.

In the Dark World, my world, mutation has played strange changes upon flesh that began as human. Medea was one of the strangest of all. There is no word in Earth-tongues for it, because no creature such as Medea ever walked Earth. But there is an approximation. In reality perhaps, and certainly in legend, beings a little like her have been known on Earth. The name they give them is Vampire.

But Edeyrn, no. I could not remember. It may be that not even Ganelon had ever known. I only knew that in time of need, Edeyrn would uncover her face.

"Freydis," I said, and hesitated again. "What is Edeyrn?"

She shook her massive head, the white braids stirring on her shoulders.

"I have never known. I have only probed at her mind now and then, when we met as you met her today, on the thought-lanes. I have much power, Ganelon, but I have always drawn back from the chill I sensed beneath Edeyrn's hood. No, I cannot tell you what she is."

I laughed again. Recklessness was upon me now.

"Forget Edeyrn," I said. "When I have forced Ghast Rhymi to my bidding, and faced Llyr with the weapon that will end him, what shall I fear of Edeyrn? The Crystal Mask is a talisman against her. That much I know. Let her be whatever monstrous thing she wills -- Ganelon has no fear of her."

"There is a weapon, then against Llyr too?"

"There is a sword," I said. "A sword that is -- is not quite a sword as we think of weapons. My mind is cloudy there still. But I know that Ghast Rhymi can tell me where it is. A weapon, yet not a weapon. The Sword Called Llyr."

For an instant, as I spoke that name, it seemed to me that the fire between us flickered as if a shadow had passed across its brightness. I should not have called the name aloud. An echo of it had gone ringing across the realms of thought, and in Caer Llyr perhaps Llyr Himself had stirred behind the golden window -- stirred, and looked out.

Even here, I felt a faint flicker of hunger from that far-away domed place. And suddenly, I knew what I had done, Llyr was awake!

I stared at Freydis with widened eyes, meeting her blue gaze that was widening too. She must have felt the stir as it ran formlessly all through the Dark World. In the Castle of the Coven I knew they had felt it too, perhaps that they looked at one another with the same instant dread which flashed between Freydis and me here.

Llyr was awake!

And I had wakened him. I had gone drifting in thought down that shining corridor and stood in thought before the very window itself, Llyr's Chosen, facing Llyr's living window. No wonder he had stirred at last to full awakening.

Exultation bubbled up in my mind.

"Now they must move!" I told Freydis joyfully. "You wrought better than you knew when you set my mind free to rove its old track. Llyr wakens and is hungrier man the Coven ever dared let him grow before. For overlong there has been no Sabbat, and Llyr ravens for his sacrifice. Have you spies watching the Castle now, witch-woman?"

She nodded.

"Good. Then we will know when the slaves are gathered again for a Sabbat meeting. It will be soon. It must be
soon! And Edward Bond will lead an assault upon the Castle while the Coven are at Sabbat in Caer Secaire. There
will be the Mask and the Wand, old woman!" My voice deepened to a chant of triumph. "The Mask and the Wand
for Ganelon, and Ghast Rhymi alone in the Castle to answer me if he can! The Norns fight on our side, Freydis!"

She looked at me long and without speaking.

Then a grim smile broke across her face and stooping, she spread her bare hand, palm down, upon the fuelless
flame. I saw the fire lick up around her fingers. Deliberately she crushed it out beneath her hand, not flinching at all.
The fire flared and died away. The crystal dish stood empty upon its pedestal, and dimness closed around us. In
that twilight the woman was a great figure of marble, towering beside me.

I heard her deep voice.

"The Norns are with us, Ganelon," she echoed. "See that you fight upon our side too, as far as your oath will
take you. Or you must answer to the gods and to me. And by the gods -- " she laughed harshly " -- by the gods, if
you betray me, I swear I'll smash you with no other power than this!"

In the dimness I saw her lift her great arms. We looked one another in the eye, this mighty sorceress and I, and
I was not sure but that she could overcome me in single combat if the need arose. By magic and by sheer muscle, I
recognized an equal. I bent my head.

"So be it, Sorceress," I said, and we clasped hands there in the darkness. And almost I hoped I need not have to
betray her.

Side by side, we went down the corridor to the cave mouth.
The half-circle of foresters still awaited us. Aries and the scarred Lorynn stood a little forward, lifting their
heads eagerly as we emerged. I paused, catching the quiver of motion as calloused hands slipped stealthily toward
hilt and bowstring. Panic, subdued and breathless, swept around the arc of woods-folk.

I stood there savoring the moment of terror among them, knowing myself Ganelon and the nemesis that would
bring harsh justice upon them all, in my own time. In my own good time.

But first I needed their help.

At my shoulder the deep voice of Freydis boomed through the glade.

"I have looked upon this man," she said. "I name him -- Edward Bond."

Distrust of me fell away from them; Freydis' words reassured them.

X. Swords for the Coven

NOW the sap that runs through Ygdrasill-root stirred from its wintry sluggishness, and the inhuman guardians
of the fate-tree roused to serve me. The three Norns -- the Destiny-weavers -- I prayed to them!

Urdur who rules the past!

She whispered of the Covenanters, and their powers and their weaknesses; of Matholch, the wolfling, whose
berserk rages were his great flaw, the gap in his armor through which I could strike, when fury had drowned his
wary cunning; of the red witch and of Edeyrn -- and of old Ghast Rhymi. My enemies. Enemies whom I could
destroy, with the aid of certain talismans that I had remembered now. Whom I would destroy!

Verdandi who rules the present!

Edward Bond had done his best. In the caves the rebels had showed me were weapons, crude rifles and
grenades, gas-bombs and even a few makeshift flame-throwers. They would be useful against the Coven's slaves.
How useless they would be against the Covenanters I alone knew. Though Freydis may have known too.

Yet Aries and Lorynn and their reckless followers were ready to use those Earth-weapons, very strange to them,
in a desperate attack on the Castle. And I would give them that chance, as soon as our spies brought word of Sabbat-
preparations. It would be soon. It would have to be soon. For Llyr was awake now -- hungry, thirsting -- beyond the
Golden Window that is his door into the worlds of mankind.

Skuld who rules the future!

To Skuld I prayed most of all. I thought that the Coven would ride again to Caer Secaire before another dawn
came. By then I wanted the rebels ready.

Edward Bond had trained them well. There was military discipline, after a fashion. Each man knew his
equipment thoroughly, and all were expert woodsmen. We laid our plans, Aries and Lorynn and I -- though I did not
tell them everything I intended -- and group by group, the rebels slipped away into the forest, bound for the Castle.

They would not attack. They would not reveal themselves until the signal was given. Meantime, they would
wait, concealed in the gulleys and scrub-woods around the Castle. But they would be ready. When the time came,
they would ride down to the great gates. Their grenades would be helpful there.

Nor did it seem fantastic that we should battle magic with grenades and rifle. For I was beginning to realize
more and more, as my memory slowly returned, that the Dark World was not ruled by laws of pure sorcery. To an
Earth-mind such creatures as Matholch and Medea would have seemed supernatural, but I had a double mind, for as
Ganelon I could use the memories of Edward Bond as a workman uses tools.
I had forgotten nothing I had ever known about Earth. And by applying logic to the Dark World, I understood things I had always before taken for granted.

The mutations gave the key. There are depths in the human mind forever unplumbed, potentialities for power as there are lost, atrophied senses -- the ancient third eye that is the pineal gland. And the human organism is the most specialized thing of flesh that exists.

Any beast of prey is better armed with fang and claw. Man has only his brain. But as carnivores grew longer, more deadly talons, so man's mind developed correspondingly. Even in Earth-world there are mediums, mind-readers, psychomantic experts, ESP specialists. In the Dark World the mutations had run wild, producing cosmic abortions for which there might be no real need for another million years.

And such minds, with their new powers, would develop tools for those powers. The wands. Though no technician, I could understand their principle. Science tends toward simpler mechanisms; the klystron and the magnetron are little more than metal bars. Yet, under the right conditions, given energy and direction, they are powerful machines.

Well, the wands tapped the tremendous electromagnetic energy of the planet, which is, after all, simply a gargantuan magnet. As for the directive impulse, trained minds could easily supply that.

Whether or not Matholch actually changed to wolf-form I did not know, though I did not think he did. Hypnosis is part of the answer. An angry cat will fluff out its fur and seem double its size. A cobra will, in effect, hypnotize its prey. Why? In order to break down the enemy's defenses, to disarm him, to weaken the single-purposiveness that is so vital in combat. No, perhaps Matholch did not turn into a wolf, but those under the spell of his hypnosis thought he did, which came to the same thing in the end.

Medea? There was a parallel. There are diseases in which blood transfusions are periodically necessary. Not that Medea drank blood; she had other thirsts. But vital nervous energy is as real a thing as a leucocyte, and witch though she was, she did not need magic to serve her needs.

Of Edeyrn I was not so sure. Some stray remembrances hung like mists in my mind. Once I had known what she was, what chilling power lay hidden in the darkness of her cowl. And that was not magic either. The Crystal Mask would protect me against Edeyrn, but I knew no more than that.

Even Llyr -- even Llyr! He was no god. That I knew well. Yet what he might be was something I could not even guess at as yet. Eventually I meant to find out, and the Sword Called Llyr, which was not a true sword, would aid me then.

Meanwhile, I had my part to play. Even with Freydis as my sponsor, I could not afford to rouse suspicion among the rebels. I had explained that Medea's drug had left me weak and shaken. That helped to explain any minor lapses I might make. Curiously, Lorryn seemed to have accepted me fully at Freydis' word, while in Aries' behavior I detected a faint, almost imperceptible reserve. I do not think that she suspected the truth. Or, if she did she was trying not to admit it, even in her own mind.

And I could not afford to let that suspicion grow.

The valley was very active now.

Much had happened since I came there in the dawn. I had been through enough exertion both physical and emotional to last an ordinary man for a week, but Ganelon had only begun his battle. It was thanks to Edward Bond that our plans for attack would be formulated so readily, and in a way I was glad I had been too busy for anything but the most impersonal planning with Aries and Lorryn.

It helped to cover the great gaps of my ignorance about things Edward Bond should know. Many times I angled craftily for information, many times I had to call upon the excuse of the mythical drug and upon the exhaustion of my ordeal at the Castle. But by the time our plans were laid, it seemed to me that even Aries' suspicions were partly lulled.

I knew I must lull them utterly.

We rose from the great map-table in the council-cavern. All of us were tired. I met Lorryn's scar-twisted grin, warmth in it now as he smiled at the man he thought his sworn friend, and I made Edward Bond's face smile back at him.

"We'll do it this time," I told him confidently. "This time we'll win!"

His smile twisted suddenly into a grimace, and the light like embers glowed in his deep eyes.

"Remember," he growled. "Matholch -- for me!"

I looked down at the relief-map of the table, very skillfully made under Edward Bond's directions.

The dark green hills rolling with their strange forests of semi-animate trees, every brook traced in white plaster, every roadway marked. I laid my hand on the little mound of towers that was a miniature Castle of the Coven. From it stretched the highway I had ridden last night, beside Medea, in my blue sacrificial robe. There was the valley and the windowless tower of Caer Secaire which had been our destination.
For a moment I rode that highway again, in the darkness and the starshine, seeing Medea beside me in her scarlet cloak, her face a pale oval in the dusk, her mouth black-red, her eyes shining at me. I remembered the feel of that fiercely yielding body in my arms as I had held her last night, as I had held her so many times before. In my mind whirled a question.

Medea, Medea, red witch of Colchis, why did you betray me?

I ground my palm down on the tiny plaster towers of the Castle, feeling them powder away beneath my hand. I grinned fiercely at the ruin I had made of Edward Bond's model.

"We'll have no need for this again!" I said through my teeth.

Lorryn laughed.

"No need to repair it. Tomorrow the Coven Castle will be wreckage too."

I dusted the powdered plaster from my hand and looked across the table at the silent Aries. She looked at me gravely, waiting. I smiled.

"We haven't had a moment alone together," I said, making my voice tender. "I'll need sleep before I leave tonight, but there's time for a walk, if you'll come with me."

The grave green gaze dwelt upon mine. Then she nodded, without smiling, and came around the table, stretching out her hand to me. I took it and we went down the steps to the cave-mouth and out into the glen, neither of us speaking. I let her lead the way, and we walked in silence toward the upper end of the valley, the little stream tinkling away beside us.

Aries walked very lightly, her gossamer hair floating behind her in a pale misty veil. I wondered if it was by intent that she kept her free hand resting upon the bolstered weapon at her side.

It was hard for me to keep my mind upon her, or to care whether or not she knew me for myself. Medea's face in all its beauty and its evil floated before me up the glen, a face no man who looked upon it could ever forget. For a moment I was angry at the recollection that Edward Bond, in my flesh, had taken last night the kisses she meant for Ganelon.

Well, I would see her again tonight, before she died by my hand!

In my mind I saw the tiny roadway of the map-table, winding down from Coven Castle to the sacrificial temple. Along the real road, sometime in the night to come, I knew the cavalcade would ride again as it had ridden with me last night. And again there would be forest men hiding along the road, and again I would lead them against the Coven. But this time the outcome would be very different from anything either the rebels or the Coven could expect.

What a strange web the Morns had woven! Last night as Edward Bond, tonight as Ganelon, I would lead the same men in the same combat against the same foe, but with a purpose as different as night from day.

The two of us, deadly enemies though we shared the same body in a strange, inverted way -- enemies though we had never met and never could meet, for all our common flesh. It was an enigma too curious to unravel.

"Edward," a voice said at my shoulder. I looked down.

Aries was facing me with the same enigmatic gaze I had met so often today. "Edward, is she very beautiful?"

I stared at her.

"Who?"

"The witch. The Coven witch. Medea."

I almost laughed aloud. Was this the answer to all her aloofness of the day? Did she think my own withdrawal, all the changes she sensed in me, were due to the charms of a rival beauty? Well, I must set her mind at rest about that, at any rate. I called upon Llyr to forgive me the lie, and I took her shoulders in my hands and said:

"There is no woman on this world or on Earth half so beautiful as you, my darling."

Still she looked up at me gravely.

"When you mean that, Edward, I'll be glad," she said. "You don't mean it now. I can tell. No." She put her fingers across my mouth as I began to protest. "Let's not talk about her now. She's a sorceress. She has powers neither of us can fight. It isn't your fault or mine that she's too beautiful to forget all in a moment. Never mind now. Look! Do you remember this place?"

She twisted deftly from my grasp and swept out a hand toward the panorama spread below us. We stood in a grove of tall, quivering trees high on the crest of the low mountain. The leaves and branches made a bower around us with their showers of shaking tendrils, but through an opening here and there we could see the rolling country far below us, glowing in the light of the red westering sun.

"This will be ours some day," said Aries softly. "After the Coven is gone, after Llyr has vanished. We'll be free to live above ground, clear the forests, build our cities -- live like men again. Think of it, Edward! A whole world freed from savagery. And all because there were a few of us at the start who did not fear the Coven, and who found you. If we win the fight, Edward, it will be because of you and Freydis. We would all have been lost without you."

She turned suddenly, her pale gold hair flying out around her face like a halo of floating gauze, and she smiled
at me with a sudden, bewitching charm I had never seen upon her face before.

Until now she had always turned a grave reserve to my advances. Now suddenly I saw her as Edward Bond had, and it came to me in a flash of surprise that Bond was a very fortunate man, after all. Medea's sultry scarlet beauty would never wholly vanish from my mind, I knew, but this Aries had her own delicate and delightful charm.

She was very near me, her lips parted as she smiled up into my face. For an instant I envied Edward Bond. Then I remembered. I was Edward Bond! But it was Ganelon who stooped suddenly and seized the forest girl in a fiercely ardent embrace that amazed her, for I felt her gasp of surprise against my breast and her stir of protest in the moment before my lips touched hers.

Then she protested no longer.

She was a strange, wild, shy little creature, very pleasant in my arms, very sweet to kiss. I knew by the way she responded to me that Edward Bond had never held her like this. But then Edward Bond was a weakling and a fool. And before the kiss had ended I knew where I would turn first for solace when Medea had paid for treachery with her life. I would not forget Medea, but I would not soon forget this kiss of Aries', either.

She clung to me in silence for a moment, her gossamer hair floating like thistledown about us both, and above her head I looked out over the valley which she had seen in her mind's eyes peopled with free forest folk, dotted with their cities. I knew that dream would never come true.

But I had a dream of my own!

I saw the forest people toiling to raise my mighty castle here perhaps on this very mountaintop, a castle to dominate the whole countryside and the lands beyond it. I saw them laboring under my overseers to conquer still further lands. I saw my armies marching, my slaves in my fields and mines, my navies on the dark oceans of a world that might well be mine.

Aries should share it with me -- for awhile. For a little while.

"I will always love you!" I said at her ear in the voice of Edward Bond. But it was Ganelon's lips that found her lips in the one last ardent kiss I had time for then.

Curiously, it seemed to me that it took Ganelon's kisses at last to convince her I was Edward Bond....

After that, for a few hours I slept, snug in Edward Bond's cavern rooms, in his comfortable bed, his guards watching beside the door. I slept with the memory of his sweet forest girl in my arms, and the prospect of his kingdom and his bride before me when I woke. I think in the Earth-world, Edward Bond must have dreamed jealous dreams.

But my own dreams were bad. Llyr in his castle was awake and hungry, and the great, cold, writhing tendrils of his hunger coiled lazily through my mind as I slept. I knew they stirred through every mind in the Dark World that had senses to perceive them. I knew I must wake soon, or never. But first I must sleep and grow strong for the night's ordeal. Resolutely I shut Llyr from my thoughts, resolutely I shut away Aries.

It was Medea's red smile and sidelong sultry glance that went down with me into the caverns of slumber.

XI. In Ghast Rhymi's Tower

QUIETLY Lorryn and I crouched among the trees and looked out at the Castle of the Coven, aglitter with lights against the starry sky. This was the night! We both knew it, and we were both tense and sweating with a nervous exultation that made this waiting hard indeed.

All around us in the woods, unseen, we heard the tiny sounds that meant an army of forest people waited our signal. And this time they were here in force. I caught a glint of starlight now and then on rifle-barrels, and I knew that the rebels were armed to put up a good fight against the soldiers of the Coven.

Not, perhaps, too good a fight.

I did not care. They thought they were going to storm the Castle and the Coven by sheer force of arms. I knew their only purpose was to divert attention while I made my way into the Castle and found the secret weapons that would give me power over the Covenanters. While they were striking, I would make my way to Ghast Rhymi and learn what was essential for me to learn.

After that, I did not care. Many foresters would die. Let them. There would still be slaves aplenty for me when my hour came. And nothing could stop me now. The Norns fought with me; I could not fail....

There was much activity within the Castle. Voices floated out to us in the still night air. Figures moved to and fro against the lights. Then great gates were flung open upon a burst of golden radiance and the outlines of many riders crowded against it. A procession was coming out.

I heard chains clash musically, and I understood. This time the sacrifices rode chained to their mounts, so that no siren voices from the wood could lure them away. I shrugged. Let them go to their death, then. Llyr must be fed while he lasted. Better these than Ganelon, offered at the Golden Window. We saw them go off down the dark road, their chains ringing.

That was Matholch -- there on the tall horse. I knew his vulpine outlines, the lift of the cloak upon his
shoulders. And I would have known him too because of the great start, quickly checked, that Lorryn made beside me. I heard the breath whistle through his nostrils, and his voice grated in my ear.

"Remember! That is mine!"

Edeyrn went by, tiny on her small mount, and a breath of chill seemed to me to sweep the darkness as she passed.

Medea came!

When I could no longer make out her outlines in the distance, when her white robe was no more than a shimmer and her scarlet cloak had melted into the dark, I turned to Lorryn, my mind spinning, my plans already chaotic with change. For a new compulsion had come upon me, and I was not even trying to resist it.

I had not seen a sacrifice in Caer Secaire. This was one of the blank places in my memory, and a dangerous blank. Until Ganelon remembered the Sabbat, until he watched Llyr accept the offerings through the Golden Window, he could not wholly trust himself to fight the Coven and Llyr. This was a gap that must be filled. And curiosity was suddenly very strong upon me. Curiosity -- and could it be -- the pull of Llyr?

"Lorryn, wait for me here," I whispered in the darkness. "We've got to make sure they enter Caer Secaire, start the Sabbat. I don't want to attack until I'm sure. Wait for me." He stirred protestingly, but I was away before he could speak.

I was out upon the road and running softly and silently after that processional winding toward the valley and the Mass of St. Secaire, which is the Black Mass. It seemed to me as I ran that the fragrance of Medea's perfume hung upon the air I breathed, and my throat choked with the passion of my hatred for her, and of my love.

"She shall be the first to die," I promised myself in the dark....

I watched the great iron doors of Caer Secaire swing shut upon the last of the procession. The Caer was dark inside. They went quietly in, one by one, and vanished into the deeper night within. The doors clanged resonantly after them.

Some memory of Ganelon's, buried beneath the surface of conscious thought, urged me to the left, around the curve of the great wall. I followed the impulse obediently, moving almost like a sleep-walker toward a goal I did not know. Memory took me close under the looming rampart, made me lay my hands on its surface. There were heavy scrollings of pattern there, writhing like tendrils over the dark walls. My remembering fingers traced the curves, though my mind still wondered.

Then the wall moved beneath my hands. The scroll-work had been a key of sorts, and a door sank open in the blackness before me. I went confidently forward, out of black night, through a black door into deeper blackness within. But my feet knew the way.

A stairway rose beneath me in the dark. My feet had expected it and I did not stumble. It was very curious to move so blindly through this strange and dangerous place, not knowing where or why I moved, yet trusting my body to find the way. The stairs wound up and up.

Llyr was here. I could feel his hungry presence like a pressure on the mind, but many times intensified because of the narrow spaces within these walls, as if he were a sound of thunder reverberating again and again from the enclosed spaces of the Caer. Something within me reverberated soundlessly in answer, a roar of exultation that I suppressed in quick revolt.

Llyr and I were no longer linked by that ceremony of long ago. I repudiated it. I was not Llyr's Chosen now. But within me a sense I could not control quivered with ecstasy at the thought of those sacrifices who had fled blindly through the great doors of Caer Secaire. And I wondered if the Coven -- if Medea -- thought of me now, who had so nearly stood with the sacrifices last night.

My feet paused upon the stairs. I could see nothing, but I knew that before me was a wall carved with scroll-patterns. My hands found it, traced the raised designs. A section of darkness slid sidewise and I was leaning upon a wide ledge, looking down, very far down.

Caer Secaire was like a mighty grove of columns whose capitals soared up and up into infinite darkness. Somewhere above, too high for me to see its source, a light was beginning to glow. My heart paused when I saw it, for I knew that light -- mat golden radiance from a Golden Window.

Memory came fitfully back to me. The Window of Llyr. The Window of Sacrifice. I could not see it, but my mind's eye remembered its glow. In Caer Llyr that Window's substance shone eternally, and Llyr Himself lolled behind it -- far behind it -- forever. But in Caer Secaire and in the other temples of sacrifice that had once dotted the Dark World, there were replicas of the Window which glowed only when Llyr came bodilessly through the dark to take his due.

Above us, hovering and hungry, Llyr was dawning now in that golden radiance, like a sun in the night time of the temple. Where the Window of Secaire was located, how it was shaped, I still could not remember. But something in me knew that golden light and shivered in response as I watched its brilliance strengthen through the
columns of the temple.

Far below me I saw the Coven standing, tiny figures foreshortened to wedges of colored cloak -- green-robed Matholch, yellow-robed Edeyrn, red Medea. Behind them stood a circle of guardsmen. Before them, as I watched, the last of the chosen slaves moved blindly away among the columns. I could not see where they were going, but in essence I knew. The Window was yawning for its sacrifices, and somehow they must make their way to it.

As the light broadened, I saw that before the Coven stood a great cup-shaped altar, black on a black dais. Above it a lipped spout hung. My eyes traced the course of the trough which ended in the spout, and I saw now that there was a winding, descending curve, dark against that growing light, which came down in a great sweep from the mysterious heights overhead, stretching from -- the Window? -- to the cupped altar. A stir deep within me told me what that trough was for. I leaned upon the sill, shaking with an anticipation that was half for myself and half for Him, who hovered above us in the sun-like dawning of golden light.

Thinly from below me rose a chant. I knew Medea's voice, clear and silver, a thread of sound in the dimness and the silence. It rose like incense, quivering among the mighty, topless columns of Secaire.

A tenseness of waiting grew and grew in the dim air of the temple. The figures below me stood motionless, heads lifted, watching the dawning light. Medea's voice chanted on and on.

Time paused there in the columned grove of Secaire, while Llyr hovered above us waiting for her prey.

Then a thin and terrible cry rang out from the heights overhead. One scream. The light shot out blindingly in a great burst of exultation, like a voiceless answering cry from Llyr Himself. Medea's chant rose to a piercing climax and paused.

There was a stir among the columns; something moved along that curve of trough. My eyes sought the altar and the lipped spout above it.

The Coven was rigid, a cluster of frozen figures, waiting.

Blood began to drip from the spout.

I do not know how long I hung there on the ledge, my eyes riveted to the altar. I do not know how many times I heard a cry ring out from above, how many times Medea's chant rose to a hungry climax as the light burst forth in a glory overhead and blood gushed into the great cup of the altar. I was deaf and blind to everything but this. I was half with Llyr at his Golden Window, shaken with ecstasy as he took his sacrifices, and half with the Coven below, glorying in their share of the ceremony of the Sabbat.

But I know I waited too long.

What saved me I do not know now. Some voice of the ego crying unheard in my mind that this was time dangerously spent, that I must be elsewhere before the Sabbath ended, that Lorryn and his men waited endlessly while I hung here batting like a glutton upon Llyr's feast.

Reluctantly awareness returned to my mind. With an infinite effort I pulled myself back from the brink of that Golden Window and stood reeling in the darkness, but in my own body again, not hovering mindlessly with Llyr in the heights above. The Coven was still tense below me, gripped in the ecstasy of the sacrifice. But for how long I could not be sure. Perhaps for the rest of the night; perhaps for only an hour. I must hurry, if hurrying were not already futile. There was no way to know.

So I went back in the darkness, down the unseen stairs, and out of the dark, unseen door, and back along the road to Coven Castle, my mind still reeling with remembered ecstasy, the glow of the Window still before my dazzled eyes, and the scarlet runnel above the altar, and the thin, sweet chanting of Medea louder in my ears than the sound of my own feet upon the road....

The red moon was far down the sky when I came back to Lorryn, still crouching beside the castle wall and half mad with impatience. There was an eager stir among the unseen soldiers as I came running down the road, a forward surge as if they had waited to the very limit of endurance and would attack now whether I gave the word or no.

I waved to Lorryn while I was still twenty feet away. I was careless now of the Castle guardsmen. Let them see. Let them hear.

"Give the signal!" I shouted to Lorryn. "Attack!"

I saw him start up beside the road, and the moonlight glinted upon the silver horn he lifted to his lips. Its blare of signal notes ripped the night to tatters. It ripped away the last of my lethargy too.

I heard the long yell that swept the forest as the woodsmen surged forward to the attack, and my own voice roared unbidden in reply, an ecstasy of battle-hunger that matched the ecstasy I had just shared with Llyr.

The rattle of rifle-fire drowned out our voices. The first explosions of grenades shook the Castle, outlining the outer walls in livid detail. There were shouts from within, wild trumpetings of signal horns, the cries of confused guardsmen, leaderless and afraid. But I knew they would rally. They had been trained well enough by Matholch and by myself. And they had weapons that could give the woodsmen a stiff fight.

When they recovered from this panic there would be much blood spilled around the outer walls.
I did not wait to see it. The first explosions had breached the barriers close beside me, and I scrambled recklessly through the gap, careless of the rifle fire that spattered against the stones. The Morns were with me tonight. I bore a charmed life, and I knew I could not fail.

Somewhere above me in the besieged towers Ghast Rhymi sat wrapped in his chill indifference, aloof as a god above the struggle around Coven Castle. I had a rendezvous with Ghast Rhymi, though he did not know it yet.

I plunged into the gateway of the Castle, heedless of the milling guards. They did not know me in the darkness and the confusion, but they knew by my tunic I was not a forester, and they let me shoulder them aside.

Three steps at a time, I ran up the great stairway.

XII. Harp of Satan

CASTLE of the Coven! How strange it looked to me as I went striding through its halls. Familiar, yet curiously unknown, as though I saw it through the veil of Edward Bond's transplanted memories.

So long as I went rapidly, I seemed to know the way. But if I hesitated, my conscious mind took over control, and that mind was still clouded with artificial memories, so that I became confused in the halls and corridors which were familiar to me when I did not think directly of them.

It was as if whatever I focused on sharply receded into unfamiliarity while everything else remained clear, until I thought of it.

I strode down hallways arched overhead and paved underfoot in bright, intricate mosaics that told legendary tales half-familiar to me. I walked upon centaurs and satyrs whose very faces were well known to the Ganelon half of my mind, while the Edward Bond half wondered in vain whether such people had really lived in this distorted world of mutations.

This double mind at times was a source of strength to me, and at others a source of devouring weakness. Just now I hoped fervently that I might meet no delays for once I lost this rushing thread of memory which was leading me toward Ghast Rhymi, I might never find it again. Any interruption might be fatal to my plans.

Ghast Rhymi, my memories told me, would be somewhere in the highest tower of the castle. There too would be the treasure-room where the Mask and Wand lay hidden, and hidden deeper in the serene, untouchable thoughts of Ghast Rhymi, lay the secret of Llyr's vulnerability.

These three things I must have, and the getting would not be easy. For I knew -- without clearly remembering how or by what -- that the treasure-room was guarded by Ghast Rhymi. The Coven would not have left open to all comers that secret place where the things that could end them lay hidden.

Even I, even Ganelon, had a secret thing locked in that treasury. For no Covenanter, no warlock, no sorceress can deal in the dark powers without creating, himself, the one instrument that can destroy him. That is the Law.

There are secrets behind it which I may not speak of, but the common one is clear. All Earth's folklore is rife with the same legend. Powerful men and women must focus their power in an object detached from themselves.

The myth of the external soul is common to all Earth races, but the reason for it lies deep in the lore of the Dark World. This much I can say -- that there must be a balance in all things. For every negative, a positive. We of the Coven could not build up our power without creating a corresponding weakness somewhere, somehow, and we must hide that weakness so cunningly that no enemy could find it.

Not even the Coven knew wherein my own secret lay. I knew Medea's, and I knew Edeyrn's only partially, and as for Matholch -- well, against him I needed only my own Covenanter strength. Ghast Rhymi did not matter. He would not bother to fight.

But Llyr? Ah!

Somewhere the Sword lay hidden, and he who could find and use it in that unknown way for which it was fashioned, he held the existence of Llyr in his own hand. But there was danger. For as Llyr's power in the Dark World was beyond imagination, so too must be that balancing power hidden in the Sword. Even to go near it might be fatally dangerous. To hold it in the hand -- well, hold it I must, and there was no profit in thinking about danger.

I went up and up, on and on.

I could not hear the sounds of battle. But I knew that at the gate the Coven guards and slaves were fighting and falling, as Lorryn's men, too, were falling. I had warned Lorryn that none must break through his lines to warn those at Caer Secaire. I knew that he would follow that order, despite his anxiety to come to grips with Matholch. For the rest, there was one in the Castle who could, without stirring, send a message to Medea. One person!

He had not sent that message. I knew that as I thrust through the white curtain and came out into the tower room. The little chamber was semicircular, walls, floor and ceiling were ivory pale. The casement windows were shut, but Ghast Rhymi had never needed sight to send out his vision.

He sat there, an old, old man, relaxed amid the cushions of his seat, snowy hair and beard falling in curled ringlets that blended with his white, plain robe. His hands lay upon the chair-arms, pale as wax, so transparent that I could almost trace the course of the thinned blood that stirred so feebly in those old veins.
Wick and wax had burned down. The flame of life flickered softly, and a wind might send that flame into eternal darkness. So sat the Ancient of Days, his blind blue gaze not seeing me, but turned upon inward things.

Ganelon's memories flooded back. Ganelon had learned much from Ghast Rhymi. Even then, the Covenanter had been old. Now the tides of time had worn him, as the tides of the sea wear a stone till nothing is left but a thin shell, translucent as clouded glass.

Within Ghast Rhymi I could see the life-fires dwindling, sunk to embers, almost ash.

He did not see me. Not easily can Ghast Rhymi be drawn back from, the deeps where his thoughts move.

I spoke to him, but he did not answer.

I went past him then, warily, toward the wall that divided the tower-top into two halves. There was no sign of a door, but I knew the combination. I moved my palms in an intricate pattern on the cool surface, and a gap widened before me.

I crossed the threshold.

Here were kept the holy things of the Coven.

I looked upon that treasure-vault with new eyes, clearer because of Edward Bond's memories. That lens, burning with dull amber lights there in its hollowed place in the wall -- I had never wondered much about it before. It killed. But memories of Earth-science told me why. It was not magic, but an instantaneous drainage of the electrical energy of the brain. And that conical black device -- that, killed, too. It could shake a man to pieces, by shuttling his life-force back and forth so rapidly between artificial cathode and anode that living flesh could not stand the strain. Alternating current, with variations!

But these weapons did not interest me now. I sought other loot. There was no death-traps to beware of, for none but the Coven knew the way to enter this treasure-room, or its location, or even that it existed, save in legends. And no slave or guard would have dared to enter Ghast Rhymi's tower.

My gaze passed over a sword, but not the one I needed; a burnished shield; a harp, set with an intricate array of manual controls. I knew that harp. Earth has legends of it -- the harp of Orpheus, that could bring back the dead from Hades. Human hands could not play it. But I was not quite ready for the harp, yet.

What I wanted lay on a shelf, sealed in its cylindrical case. I broke open the seals and took out the thin black rod with its hand-grip.

The Wand of Power. The Wand that could tap the electromagnetic force of a planet. So could other wands of this type -- but this was the only one without the safety-device that limited its power. It was dangerous to use.

In another case I found the Crystal Mask -- a curved, transparent plate that shielded my eyes like a domino mask of glass. This mask would shield one from Edeyrn.

I searched further. But of the Sword of Llyr I could find no trace.

Time did not lag. I heard nothing of the noise of battle, but I knew that the battle went on, and I knew, too, that sooner or later the Coven would return to the Castle. Well, I could fight the Coven now, but I could not fight Llyr. I dared not risk the issue till I had made sure.

In the door of the vault I stood, staring at Ghast Rhymi's silvery head. Whatever guardian thought he kept here, knew I had a right to the treasure room. He made no motion. His thoughts moved far out in unimaginable abysses, nor could they be easily drawn back. And it was impossible to put pressure on Ghast Rhymi. He had the perfect answer. He could die.

Well, I too had an answer!

I went back to the vault and lifted the harp. I carried it out and set it down before the old man. No life showed in his blue stare.

I went to the windows and flung them open. Then I returned, dropping to the cushions beside the harp, and lightly touched its intricate controls.

That harp had been in the Earth-world, or others like it. Legends know its singing strings, as legends tell of mystic swords. There was the lyre of Orpheus, strong with power, that Jupiter placed amid the stars. There was the harp of Gwydion of Britain, that charmed the souls of men. And the harp of Alfred, that helped to crush Daneland. There was David's harp that he played before Saul.

Power rests in music. No man today can say what sound broke the walls of Jericho, but once men knew.

Here in the Dark World this harp had its legends among the common folk. Men said that a demon played it, that the airy fingers of elemental spirits plucked at its strings. Well, in a way they were right.

For an incredible perfection of science had created this harp. It was a machine. Sonic, sub-sonic, and pure vibration to match the thought-waves emitted by the brain blended into a whole that was part hypnosis and part electric magnetism. The brain is a colloid, a machine, and any machine can be controlled.

And the harp of power could find the key to a mind, and lay bonds upon that mind.

Through the open windows, faintly from below, I heard the clash of swords and the dim shouts of fighting men.
But these sounds did not touch Ghast Rhymi. He was lost on the plane of pure abstraction, thinking his ancient, deep thoughts.

My fingers touched the controls of the harp, awkwardly at first, then with more ease as manual dexterity came back with memory.

The sigh of a plucked string whispered through the white room. The murmuring of minor notes, in a low, dreamily distant key. And as the machine found the patterns of Ghast Rhymi's mind, under my hands the harp quickened into breathing life.

The soul of Ghast Rhymi -- translated into terms of pure music!

Shrill and ear-piercing a single note sang. Higher and higher it mounted, fading into inaudibility. Deep down a roaring, windy noise began, rising and swelling into the demon-haunted shout of a gale. Rivers of air poured their music into the threnody.

High -- high -- cold and pure and white as the snowy summit of a great mountain, that single thin note sang and sang again.

Louder grew the great winds. Rippling arpeggios raced through the rising torrent of the sorcerous music.

Thunder of riven rocks -- shrill screaming of earthquake-shaken lands -- yelling of a deluge that poured down upon tossing forests.

A heavy humming note, hollow and unearthly, and I saw the gulfs between the worlds where the empty night of space makes a trackless desert.

And suddenly, incongruously, a gay lilting tune, with an infectious rocking rhythm, that brought to my mind bright colors and sunlit streams and fields.

Ghast Rhymi stirred.

For an instant awareness came back into his blue eyes. He saw me.

And I saw the life-fires sink within that frail, ancient body.

I knew that he was dying -- that I had troubled his long peace -- that he had relinquished his casual hold upon life.

I drew the harp toward me. I touched the controls.

Ghast Rhymi sat before me, dead, the faintest possible spark fading within that old brain.

I sent the sorcerous spell of the harp blowing like a mighty wind upon the dying embers of Ghast Rhymi's life.

As Orpheus drew back the dead Eurydice from Pluto's realm, so I cast my net of music, snared the soul of Ghast Rhymi, drew him back from death!

He struggled at first, I felt his mind turn and writhe, trying to escape, but the harp had already found the key to his mind, and it would not let him go. Inexorably it drew him.

The ember flickered -- faded -- brightened again.

Louder sang the strings. Deeper roared the tumult of shaking waters.

Higher the white, shrill note, pure as a star's icy light, leaped and ever rose.

Roaring, racing, sweet with honey-musk, perfumed with flower-scent and ambergris, blazing with color, opal and blood-ruby and amethyst-blue, that mighty tapestry of color rippled and shook like a visible web of magic through the room.

The web reached out.

Swept around Ghast Rhymi like a fowler's snare!

Back in those faded blue eyes the light of awareness grew. He had stopped struggling. He had given up the fight. It was easier to come back to life -- to let me question him -- than to battle the singing strings that could cage a man's very soul.

Under the white beard the old man's lips moved.

"Ganelon," he said. "I knew -- when the harp sang -- who played it. Well, ask your questions. And then let me die. I would not live in the days that are coming now. But you will live, Ganelon -- and yet you will die too. That much I have read in the future."

The hoary head bent slowly. For an instant Ghast Rhymi listened -- and I listened too.

The last, achingly sweet notes of the harp died upon the trembling air.

Through the open windows came the muted clash of sword and the wordless shriek of a dying man.

XIII. War -- Red War!

PITY FLOODED me. The shadow of greatness that had cloaked Ghast Rhymi was gone. He sat there, a shrunken, fragile old man, and I felt a momentary unreasoning impulse to turn on my heel and leave him to drift back into his peaceful abyss of thought. Once, I remembered, Ghast Rhymi had seemed a tall, huge figure -- though he had never been that in my lifetime. But in my childhood I had sat at the feet of this Covenanter and looked up with awe at that majestic, bearded face with reverence.
Perhaps there had been more life in that face then, more warmth and humanity. It was remote now. It was like
the face of a god, or of one who had looked upon too many gods.

"Master," I said. "I am sorry!"

No light came into the distant blue gaze, yet I sensed a stirring.

"You name me master?" he said. "You -- Ganelon? It has been a long time since you humbled yourself to
anyone."

The taste of my triumph was ashes. I bowed my head. Yes, I had conquered Ghast Rhymi, and I did not like the
savor of that conquest.

"In the end the circle completes itself," the old man said quietly. "We are more kin than the others. Both you
and I are human, Ganelon, not mutants. Because I am Leader of the Coven I let Medea and the others use my
wisdom. But -- but -- " He hesitated.

"For two decades my mind has dwelt in shadow," he went on. "Beyond good and evil, beyond life and the
figures that move like puppets on the stream of life. When I was wakened, I would give the answers I knew. It did
not matter. I had thought that I had lost all touch with reality. And that if death swept over every man and woman in
the Dark World, it would not matter."

I could not speak. I knew that I had done Ghast Rhymi a very great wrong in wakening him from his deep
peace.

"And I find that it does matter, after all. No blood of mine runs in your veins, Ganelon. Yet we are kin. I taught
you, as I would have taught my own son. I trained you for your task -- to rule the Coven in my place. And now, I
think I regret many things. Most of all the answer I gave the Covenanters after Medea brought you back from Earth-
world."

"You told them to kill me," I said.

He nodded.

"Matholch was afraid. Edeyrn sided with him. They made Medea agree. Matholch said, 'Ganelon is changed.
There is danger. Let the old man read the future and see what it holds.' So they came to me, and I let my mind ride
the winds of time and see what lay ahead."

"And that was --?"

"The end of the Coven," Ghast Rhymi said. "If you lived. I foresaw the arms of Llyr reaching into the Dark
World, and Matholch lying dead in a shadowed place, and doom upon Edeyrn and Medea. For time is fluid,
Ganelon. It changes as men change. The probabilities alter. When you went into Earth-world, you were Ganelon.
But you came back with a double mind. You have the memories of Edward Bond, which you can use as tools.
Medea should have left you in Earth-world. But she loved you."

"Yet she agreed to let them kill me," I said.

He nodded.

"Do you know what was in her thoughts?" Ghast Rhymi asked. "In Caer Secaire, at the time of sacrifice, Llyr
would come. And you have been sealed to Llyr. Did Medea think you could be killed, then?"

A doubt grew within me. But Medea had led me, like a sheep to slaughter, in the procession to the Caer. If she
could justify herself, let her. I knew that Edeyrn and Matholch could not.

"I may let Medea live, then," I said. "But not the wolfling. I have already promised his life. And as for Edeyrn,
she must perish."

I showed Ghast Rhymi the Crystal Mask. He nodded.

"But Llyr?"

"I was sealed to Him as Ganelon," I said. "Now you say I have two minds. Or, at least, an extra set of
memories, even though they are artificial. I am not willing to be liege to Llyr! I learned many things in the-Earth-
world. Llyr is no god!"

The ancient head bent. A transparent hand rose and touched the ringlets of the beard. Then Ghast Rhymi looked
at me, and he smiled.

"So you know that, do you?" he asked. "I will tell you something, Ganelon, that no one else has guessed. You
are not the first to come from Earth-world to the Dark World. I was the first."

I stared at him with un concealed amazement.

"And you were born in the Dark World; I was not," he said. "My flesh sprang from the dust of Earth. It has
been very long since I crossed, and I can never return now, for my span is long outlived. Only here can I keep the
life-spark burning within me, though I do not much care about that either. Yet I am Earth-born, and I knew
Vortigern and the kings of Wales. I had my own holdings at Caer-Merdin, and a different sun from this red ember in
the Dark World's sky shone upon Caer-Merdin! Blue sky, blue sea of Britain, the gray stones of the Druid altars
under the oak forests. That is my home, Ganelon. Was my home. Until my science, that men in those days called magic, brought me here, with a woman's aid. A Dark-World woman named Viviane.

"You are Earth-born?" I said.

"Once -- yes. As I grew older here, very, very old, I regretted my exile. I had acquired enough of wisdom. I would have changed it all for one breath of the cool, sweet air that blew in from the Irish Sea when I was a boy. But never could I return. My body would fall to dust in the Earth-world. So I lost myself in dreams -- dreams of Earth, Ganelon."

His blue eyes brightened with memories.

"In my dreams I brought back the old days. I stood again on the crags of Wales, watching the salmon leaping in the waters of gray Usk. I saw Artorius again, and his father Uther, and I smelled the old smells of Britain in her youth. But they were dreams!

"And dreams are not enough. For the sake of the love I bore the dust from which I sprang, for the sake of a wind that blew from ancient Ireland, I will help you now, Ganelon. I had never thought that life would matter to me any more. But that these abominations should lead a man of Earth to slaughter -- no! And man of Earth you are now, though born on this world of sorcery!"

He leaned forward, compelling me with his gaze.

"You are right. Llyr is no god. He is -- a monster. No more than that. And he can be slain."

"With the Sword Called Llyr?"

"Listen. Put these legends out of your mind. That is Llyr's power, and the power of the Dark World. All is veiled in mystic symbols of terror. But behind the veil lies simple truth. Vampire, werewolf, upas-tree -- they all are biological freaks, mutations run wild! And the First mutation was Llyr. His birth split the one time-world into two, each spinning along its line of probability. He was a key factor in the temporal pattern of entropy.

"Listen again. At birth, Llyr was human. But his mind was not as the minds of others. He had certain natural powers, latent powers, which ordinarily would not have developed in the race for a million years. Because they did develop in him too soon, they were warped and distorted, and put to evil ends. In the future world of logic and science, his mental powers would have fitted. In the dark times of superstition, they did not fit too well. So he developed, with the science at his command and the mental strength he had, into a monster."

"Human once. Less human as he grew older and wiser in his alien knowledge. In Caer Llyr are machines which send out certain radiations necessary to the existence of Llyr. Those radiations permeate the Dark World. They have caused other mutations, such as Matholch and Edeyrn and Medea.

"Kill Llyr and his machines will stop. The curse of abnormal mutations will be lifted. The shadow over this planet will be gone."

"How may I kill Him?" I asked.

"With the Sword Called Llyr. His life is bound up with that Sword, as a machine is dependent on its parts. I am not certain of the reason for this, Ganelon, but Llyr is not human -- now. He is part machine and part pure energy and part something unimaginable. But he was born of flesh, and he must maintain his contact with the Dark World, or die. The Sword is his contact."

"Where is the Sword?"

"At Caer Llyr," Ghast Rhymi said. "Go there. By the altar, there is a crystal pane. Don't you remember?"

"I remember."

"Break that pane. Then you will find the Sword Called Llyr."

He sank back. His eyes closed, then opened again.

I knelt before him and he made the Ancient Sign above me.

"Strange," he murmured, half to himself. "Strange that I should send a man to battle again, as I sent so many, long ago."

The white head bent forward. Snowy beard lay upon the snowy robe.

"For the sake of a wind that blew from Ireland," the old man whispered.

Through the open windows a breath of air drifted, gently ruffling the white ringlets of hair and beard.

The winds of the Dark World stirred in the silent room, paused -- and were gone!

Now, indeed, I stood alone....

From Ghast Rhymi's chamber I went down the tower steps and into the courtyard.

The battle was nearly over. Scarcely a score of the Castle's defenders were still on their feet. Around them Lorryn's pack ravened and yelled. Back to back, grimly silent, the dead-eyed guardsmen wove their blades in a steel mesh that momentarily held at bay their attackers.

There was no time to be wasted here. I caught sight of Lorryn's scarred face and made for him. He showed me
his teeth in a triumphant grin.

"We have them, Bond."

"It took you long enough," I said. "These dogs must be slain quickly!" I caught a sword from a nearby woodsman.

Power flowed up the blade and into the hilt -- into me.

I plunged into the thick of the battle. The foresters made way for me. Beside me Lorryn laughed quietly.

Then I came face to face with a guardsman. His blade swung up in thrust and parry, and I twisted aside, so that his steel sang harmlessly through the air. My sword-point leaped like a striking snake for his throat. The shock of metal grating on bone jarred my wrist.

I tore the weapon free and glimpsed Lorryn, still grinning, engaging another of the guardsmen.

"Kill them!" I shouted. "Kill them!"

I did not wait for response. I went forward against the blind-eyed soldiers of Medea, slashing, striking, thrusting, as though these men were the Coven, my enemies! I hated each blankly staring face. Red tides of rage began to surge up, narrowing my vision and clouding my mind with hot mists.

For a few moments, I was drunk with the lust for killing.

Lorryn's hands gripped my shoulders. His voice came.

"Bond! Bond!"

The fogs were swept away. I stared around. Not one of the guardsmen was left alive. Bloody, hacked corpses lay sprawled on the gray flagstone of the courtyard. The woodsmen, panting hard, were wiping their blades clean.

"Did any escape to carry warning to Caer Secaire?" I asked.

Despite his perpetual scarred grin, Lorryn looked troubled.

"I'm not sure. I don't think so, but the place is a rabbit-warren."

"The harm's done then," I said. "We hadn't enough men to throw a cordon around the Castle."

He grimaced. "Warned or not, what's the odds? We can slay the Covenanters as we killed their guards."

"We ride to Caer Llyr," I said, watching him.

I saw the shadow of fear in the cold gray eyes. Lorryn rubbed his grizzled beard and scowled.

"I don't understand. Why?"

"To kill Llyr."

Amazement battled with ancient superstitious terror in his face. His gaze searched mine and apparently read the answer he wanted.

"To kill -- that!"

I nodded. "I've seen Ghast Rhymi. He told me the way."

The men around us were watching and listening. Lorryn hesitated.

"We didn't bargain for this," he said. "Yet by the gods! To kill Llyr!"

Suddenly he sprang into action, shouting orders. Swords were sheathed. Men ran to untether the mounts. Within minutes we were in our saddles, riding out from the courtyard, the shadow of the Castle falling heavily upon us till the moon lifted above the tallest tower.

I rose in my stirrups and looked back. Up there, dead, sat Ghasti Rhymi, first of the coven to die by my hand. I had killed him as surely as if I had plunged steel into his heart.

I dropped back into the saddle, pressing heels into my horse's flanks. He bolted forward. Lorryn urged his steed level with me. Behind us the woodsmen strung out in a long uneven line as we galloped across the low hills toward the distant mountains. It would be dawn before we could reach Caer Llyr. And there was no time to waste.

Medea and Edeyrn and Matholch! The names of the three beat like muffled drums in my brain. Traitors to me, Medea no less than the others, for had she not bent before the wills of Edeyrn and Matholch, had she not been willing to sacrifice me? Death I would give Edeyrn and the wolfling. Medea I might let live, but only as my slave, nothing more.

With Ghast Rhymi dead, I was leader of the Coven! In the old man's tower, sentimental weakness had nearly betrayed me. The weakness of Edward Bond, I thought. His memories had watered my will and diluted my power.

Now I no longer needed his memories. At my side swung the Crystal Mask and the Wand of Power. I knew how to get the Sword Called Llyr. It was Ganelon and not the weakling Edward Bond, who would make himself master of the Dark World.

Briefly I wondered where Bond was now. When Medea had brought me through the Need-fire to the Dark World, Edward Bond, at that same moment, must have returned to Earth. I smiled ironically, imagining the surprise that must have been his. Perhaps he had tried, and was still trying, to get back to the Dark World. But without Freydis to aid him, his attempts would be useless. Freydis was helping me now, not Bond.

And Bond would stay on Earth! The substitution would not occur again if I could help it. And I could help it.
Strong Freydis might be, but could she stand against the man who had killed Llyr? I did not think so.

I sent a sly sidewise glance at Lorryn. Fool! Aries too was another of the same breed. Only Freydis had sense enough not to trust me.

The strongest of my enemies must die first -- Llyr. Then the Coven. After that, the woodsmen would taste my power. They would learn, that I was Ganelon, not the Earth weakling, Edward Bond!

I thrust the memories of Bond out of my mind. I drove them away. I banished them utterly.

As Ganelon I would battle Llyr.

And as Ganelon I would rule the Dark World!

Rule -- with iron and fire!

XIV. Fire of Life

HOURS BEFORE we came to Caer Llyr we saw it, at first a blacker blackness against the night sky, and slowly, gradually, deepening into an ebon mountain as the rose-gray dawn spread behind us.

Our cantering shadows fell before us, to be trodden under the horses' hoofs. Cool, fresh winds whispered -- whispered of the sacrifice at Caer Secaire, of the seeking minds of the Coven that spied across the land.

But Caer Llyr loomed on the edge of darkness ahead -- guarding the night!

Huge the Caer was, and alien. It seemed shapeless, a Titan mound of jumbled black rock thrown almost casually together. Yet I knew that there was design in its strange geometry.

Two jet pillars, each fifty feet tall, stood like the legs of a colossus, and between them was an unguarded portal.

Only there was mere any touch of color about the Caer.

A veil of flickering rainbows played lambently, like a veil across the threshold. Opalescent and faintly glowing, the shadow-curtain swung and quivered as though gentle winds drifted through gossamer folds of silk.

Fifty feet high was that curtain and twenty feet broad. Straddling it the ebon pillars rose. And above and beyond, towering breathtakingly to the dawn-clouded sky, squatted the Caer, a mountain-like structure that had never been built by man.

From Caer Llyr a breath of fear came coldly, scattering the woodsmen like leaves before a gale. They broke ranks, deployed out and drew together again as I raised my hand and Lorryn called a command.

I stared around at the low hills surrounding us.

"Never in my memory or my father's memory have men come this close to Caer Llyr," Lorryn said. "Except for Covenanters, of course. Nor would the foresters follow me now, Bond. They follow you."

How far would they follow? My wondering thought was cut off as a woodsman shouted warning. He rose in his stirrups and pointed south.

Over the hills, riding like demons in a dusty cloud, came horsemen, their armor glittering in the red sunlight!

"So someone did escape from the Castle," I said between my teeth. "And the Coven have been warned, after all!"

Lorryn grinned and shrugged. "Not many."

"Enough to delay us." I frowned, trying to make the best plan. "Lorryn, stop them. If the Coven ride with then-guards, kill them too. But hold them back from the Caer until --"

"Until?"

"I don't know. I'll need time. How much time I can't say. Battling and conquering Llyr won't be the work of a moment."

"Nor is it the work of one man," Lorryn said doubtfully. "With us to aid you, victory will fly at your elbow."

"I know the weapon against Llyr," I said. "One man can wield it. But keep the guardsmen back, and the Covenanters too. Give me time!"

"There will be no difficulty about that," Lorryn said, a flash of excitement lighting his eyes. "For look!"

Angling across the hills, riding one by one into view, hotly pursuing the armored rout, came green-clad figures, spurring their horses forward.

Those figures were woodsmen's women whom we had left behind in the valley. They were armed now, for I saw the glitter of swords. Nor were swords their only weapons. A spiteful crack echoed, a puff of smoke arose, and one of the guardsmen flung up his hands and toppled from his mount.

Edward Bond had known how to make rifles! And the woodfolk had learned how to use them!

At the head of the wood women I noted two lithe forms, one a slim, supple girl whose ashy-blond hair streamed behind her like a banner. Aries.

And at her side, on a great white steed, rode one whose giant form I could not mistake even from this distance. Freydis spurred forward like a Valkyrie galloping into battle.

Freydis and Aries, and the women of the forest!

Lorryn's laugh held exultation.
"We have them, Bond!" he cried, his fist tightening on the rein. "Our women at their heels, and we to strike from the flank -- we'll catch and crush them between hammer and anvil. Gods grant the shape-changer rides there!"

"Then ride," I snapped. "No more talk! Ride and crush them. Hold them back from the Caer!"

With that I raced my steed forward, lying low on the horse's mane, driving like a thunderbolt toward the black mountain ahead. Did Lorryn know how suicidal might be the mission on which I had sent him? Matholch he might slay, and even Medea. But if Edeyrn rode with the Coven guards, if ever she dropped the hood from her face, neither sword nor bullet could save the woodsmen!

Still they would give me time. And if the woodsmen's ranks were thinned, so much the better for me later. I would deal with Edeyrn in my own way when the time came.

Ahead the black columns stood. Behind me a shouting rose, and a crackle of rifle-fire. I looked back, but a fold of the hills hid the combat from my eyes.

I sprang from the horse's back and stood before the pillars -- between them. The coruscating veil sparkled and ran like milky water before me. Above, towering monstrously, stood the Caer, the focus of the evil that had spread across the Dark World. And in it reposed Llyr, my enemy!

I still had the sword I had taken from one of the woodsmen, but I doubted if ordinary steel would be much good within the Caer. Nevertheless I made sure the weapon was at my side as I walked forward.

I stepped through the veil.

For twenty paces I moved forward in utter darkness. Then light came.

But it was the light that beats upon a snow plain, so bright, so glittering, that it blinds. I stood motionless, waiting. Presently the dazzle resolved itself into flickering atoms of brightness, weaving and darting in arabesque patterns. Not cold, no!

Tropical warmth beat upon me.

The shining atoms drove at me. They tingled upon my face and hands. They sank like intangible things through my garments and were absorbed by my skin. They did not lull me. Instead, my body greedily drank that weird snowstorm of -- energy? -- and was in turn energized by it.

Tide of life sang ever stronger in my veins.

I saw three gray shadows against the white. Two tall and one slight and small as a child's shadow.

I knew them. I knew who cast them.

I heard Matholch's voice.

"Kill him. Kill him now."

And Medea's answer.

"No. He need not die. He must not."

"But he must!" Matholch snarled, and Edeyrn's sexless, thin voice echoed his.

"He is dangerous, Medea. He must die, and only on Llyr's altar can he be slain. For he is the Sealed of Llyr."

"He need not die," Medea said stubbornly. "If he is made harmless -- weaponless -- he may live."

"How?" Edeyrn asked, and for answer the red witch stepped forward out of the dazzling white shimmer.

No longer a shadow. No longer a two-dimensional grayness. She stood before me -- Medea, witch of Colchis. Her dark hair fell to her knees. Her dark gaze slanted at me. Evil she was, and alluring as Lilith.

I dropped my hand to sword-hilt.

I did not. I could not move. Faster swirled the darting bright atoms, whirling about me, sinking into my body to betray me.

I could not move.

Beyond Medea the twin shadows bent forward.

"The power of Llyr holds him," Edeyrn whispered. "But Ganelon is strong, Medea. If he breaks his fetters, we are lost."

"By then he will have no weapons," Medea said, and smiled at me.

Now indeed I knew my danger. Very easily my steel could have bitten through Medea's soft throat, and heartily I wished it had done so long ago. For I remembered Medea's power. The mutation that set her apart from others. That which had caused her to be named -- vampire.

I remembered victims of hers that I had seen. The dead-eyed guardsmen, the Castle slaves, hollow shells of men, the walking dead, all soul drained from them, and most of their life-forms as well.

Her arms stole around my neck. Her mouth lifted to mine.

I did not. I could not move. Faster swirled the darting bright atoms, whirling about me, sinking into my body to betray me.

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In one hand she held her black wand. It touched my head, and a gentle shock, not unpleasant, crawled along my scalp. The -- the conductor, I knew, and a gust of insane laughter shook me at the incongruity of the weapon.

But there was no magic here. There was science, of a high order, a science made possible only for those who
were trained to it, or for those who were mutants. Medea drank energy, but not through sorcery. I had seen that wand used too often to believe that.

The wand opened the closed circuits of the mind and its energies. It tapped the brain, as a copper wire can tap a generated current.

Diverting the life-force to Medea!

The shining mist-motes swirled faster. They closed in around us, bathing us in a swirling cloak. The gray shadowiness fell away from Edeym and Matholch. Dun-cloaked, cowled dwarf and lean, grinning wolfling stood there, watching.

Edeyme's face I could not see, though the deadly cold crept from beneath the cowl like an icy wind. Matholch's tongue crept out and circled his lips. His eyes were bright with triumph and excitement.

A numbing, lethargic languor was stealing over me. Against my mouth as Medea's lips grew hotter, more ardent, as my own lips chilled. Desperately I tried to move, to grasp my sword-hilt. I could not.

Now the bright veil thinned again. Beyond Matholch and Edeyme I could see a vast space, so enormous that my gaze failed to pierce its violet depths. A stairway led up to infinite heights.

A golden glow burned high above.

But behind Matholch and Edeyme, a little to one side, stood a curiously-carved pedestal whose front was a single pane of transparent glass. It shone steadily with a cool blue light. What lay within I did not know, but I recognized that crystal pane.

Ghast Rhymi had spoken of it. Behind it must lie the Sword Called Llyr.

Faintly now -- faintly -- I heard Matholch's satisfied chuckle.

"Ganelon, my love, do not struggle against me," Medea whispered. "Only I can save you. When your madness passes, we will return to the Castle."

Yes, for I would be no menace then. Matholch would not bother to harm me. As a mindless, soulless thing I would return to the Castle of the Coven as Medea's slave.

I, Ganelon, hereditary Lord of the Coven and the Sealed of Llyr!

The golden glow high above brightened. Crooked lightnings rushed out from it and were lost in the violet dimness.

My eyes found that golden light that was the Window of Llyr.

My mind reached out toward it.

My soul strained to it!

Witch and vampire-mutation Medea might be -- or sorceress -- but she had never been sealed to Llyr. No dark power beat latently in her blood as it beat in mine. Well I knew now that, no matter how I might renounce my allegiance to Llyr, there yet had been a bond. Llyr had power over me, but I could draw upon his power as well!

I drew on that power now!

The golden window brightened. Again forked lightnings ran out from it and were gone. A muffled, heavy drum-beat muttered from somewhere, like the pulse of Llyr.

Like the heart of Llyr, stirring from sleep to waking.

Through me power rushed, quickening my flesh from its lethargy. I drew on Llyr's power without measuring the cost. I saw fear flash across Matholch's face, and Edeyme made a quick gesture.

"Medea," she said.

But Medea had already sensed that quickening. I felt her body quiver convulsively against mine. Avidly she pressed against me, faster and faster she drank the energy that made me alive.

But the energy of Llyr poured into me! Hollow thunders roared in the vast spaces above. The golden window blazed with dazzling brightness. And around us now the sparkling motes of light paled, shrunk, and were gone.

"Kill him!" Matholch howled. "He holds Llyr!"

He sprang forward.

From somewhere a bloody figure in dented armor stumbled. I saw Lorryn's scarred face twist in amazement as he blinked at the tableau. His sword, red to the hilt, was bare in his hand.

He saw me with Medea's arms about my neck.

He saw Edeyme.

And he saw Matholch!

A wordless, inarticulate sound ripped through Lorryn's throat. He lifted high the sword.

As I tore myself free from Medea's grip, as I sent her reeling away, I saw Matholch's wand come up. I reached for my own wand, but there was no need.

Lorryn's blade sang. Matholch's hand, still gripping the wand, was severed at the wrist. Blood spurted from cut arteries.
Howling, the shape-changer dropped forward. The lycanthropic change came upon him. Hypnotism, mutation, dark sorcery -- I could not tell. But the thing that sprang at Lorryn's throat was not human.

Lorryn laughed. He sent his sword spinning away.

He met the wolfling's charge, bracing himself strongly and caught the thing by throat and leg. Fanged jaws snapped viciously at him.

Lorryn heaved the monster above his head. His joints cracked with the inhuman strain. One instant Lorryn stood there, holding his enemy high, while the wolf-jaws snarled and strove to rend him.

He dashed the wolf down upon the stones!

I heard bones snap like rotten twigs. I heard a scream of dying, terrible agony from a gaping muzzle from which blood poured.

Then Matholch, in his own shape, broken, dying, lay writhing at our feet!

XV. Lair of Power

MIraculously the weakness that had chained me was gone. Llyr's strength poured through me. I unsheathed my sword and ran past Matholch's body, ignoring Lorryn who stood motionless, staring down. I ran to the pedestal with its blue-litten pane.

I gripped the sword's blade and sent the heavy hilt crashing against the glass.

There was a tinkling of pizzicato notes, a singing of thin goblin laughter. The shards fell clashing at my feet.

At my feet also dropped a sword. A sword of crystal, nearly five feet long -- pommel and guard and blade all of clearest glass.

It had been part of the window. For within the hollow pedestal was nothing at all. The sword had been part of the pane, so that my breaking the crystal had released the weapon from its camouflaged hiding-place.

Along the sleek blade blue light ran. Within the crystal blue fires burned wanly. I bent and picked up the sword. The hilt was warm and alive.

The sword called Llyr in my left hand, the sword with blade of steel in my right, I stood upright.

Paralyzing cold breathed past me.

I knew that cold.

So I did not turn. I swung the steel sword under my arm, snatched the Crystal Mask from my belt, and donned it. I drew the Wand of Power.

Only then did I turn.

Through the Mask queer glimmers and shiftings ran, distorting what I saw. The properties of light were oddly altered by the Mask. But it had its purpose. It was a filter.

Matholch lay motionless now. Beyond his body Medea was rising to her feet, her dark hair disordered. Facing me stood Lorryn, a stone man, only his eyes alive in his set, white face.

He was staring at Edeyrn, whose sleek dark head I saw. Her back was toward me. The cowl had been flung back upon her shoulders.

Lorryn sagged down, the life going out of him. Bonelessly as water he collapsed.

He lay dead.

Then slowly, slowly, Edeym turned.

She was tiny as a child, and her face was like a child's too, in its immature roundness. But I did not see her face, for even through the Crystal Mask burned the Gorgon's glare.

The blood stilled within me. A slow tide of ice crept with iron lethargy into my brain and cold wariness engulfed me.

Only in the eyes of the Gorgon fire burned:

Deadly radiations were there, what Earth-scientists call ectogenetic rays, but limited till now to the plant-world. Only the mad mutation that had created Edeyrn could have brought from hell such a nightmare trick of biology.

But I did not fall. I did not die. The radiations were filtered, made harmless, by the vibration-warping properties of the Mask I wore.

I lifted the Wand of Power.

Red fires blasted from it. Scarlet, licking tongues seared out toward Edeyrn.

Lashes of flame tore at her, like crimson whips that burned and left bloody weals on that calm child-face.

She drew back, the lance of her stare driving at me.

With her, step by step, retreated Medea. Toward the foot of the great stairway that led to Llyr's Window.

The whips of fire seared across her eyes.

She turned and, stumbling, began to run up the stairway. Medea paused, her arms lifted in an uncompleted gesture. But in my face she read no softening.

She, too, turned, and followed Edeyrn.
I dropped the useless sword of steel. Wand in left hand, the Sword Called Llyr in my right, I followed them. As my foot touched the first step, a trembling vibration shook the violet air about me. Now almost I regretted having called upon Llyr to break Medea's spell. For Llyr was awake, watching, and warned.

The pulse of Llyr muttered through the huge Caer. The golden lightnings flamed from the Window high above. Briefly two black small silhouettes showed against that amber glow. They were Edeyrn and Medea, climbing. After them I went. And at each step the way grew harder. I seemed to walk through a thickening, invisible torrent dot was like a wind or a wave flowing down from that shining window, striving to tear me from my foothold, to rip the crystal sword from my grip.

Up and up I went. Now the Window was a glaring blaze of yellow fires. The lightnings crackled out incessantly, while rocking crashes of thunder reverberated along the vaulted abysses of the Caer. I leaned forward as though against a gale. Doggedly I fought my way up the stair.

There was someone behind me.

I did not turn. I dared not, for fear the torrent would sweep me from my place. I crawled up the last few steps, and came out on a level platform of stone, a disc-shaped dais, on which stood a ten-foot cube. Three of its sides were of black rock. The side that faced me was a glaring blaze of amber brilliance.

Far below, dizzyingly far, was the floor of the Caer. Behind me the stairway ran down to those incredible depths, and the tremendous wind still blew upon me, pouring out from the Window, seeking to whirl me to my death.

To the Window's left stood Edeyrn, to its right, Medea. And in the Window --

The blazing golden clouds whirled, thickened, tossed like storm-mists, while still the blinding flashes spurted from them. The thunder never ceased now. But it pulsed. It rose and fell in steady cadence, in unison with the heart-beat of Llyr.

Monster or mutation -- human once, or half-human -- Llyr had grown in power since then. Ghast Rhymi had warned me.

Part machine and part pure energy and part something unthinkable, the power of Llyr blasted through the golden clouds upon me!

The Wand of Power dropped from my hand. I lifted the crystal sword and managed one forward step. Then the helltide caught me, and I could advance no further. I could only fight, with every bit of my strength, against the avalanche that strove to thrust me toward the edge of the hanging platform.

Louder grew the thunders. Brighter the lightnings flamed.

The cold stare of Edeyrn chilled me. Medea's face was inhuman now. Yellow clouds boiled out from the Window and caught Edeyrn and Medea in their embrace.

Then they rolled toward me and overwhelmed me.

Dimly I could see the brighter glow that marked Llyr's Window. And two vague silhouettes, Edeyrn and Medea.

I strove to step forward. Instead I was borne back toward the edge -- back and back.

Great arms caught me about the waist. A braid of white hair tossed by my eyes. The giant strength of Freydis stood like a wall of iron between me and the abyss.

From the corner of my eye I saw that she had wound a scrap torn from her white robe about her head, shielding her from the Gorgon's stare. Blindly, guided by some strange instinct, the Valkyrie thrust me forward.

Against us the golden clouds rolled, sentient, palpable, veined with white lightnings and shaking with deep thunders.

Freydis strove silently. I bent forward like a bow, battering against the torrent.

Step by step I won forward, Freydis to aid me. Ever she stood as a bulwark against my back. I could hear her panting breath, great gasps that ripped from her throat as she linked her strength with mine.

My chest felt as though a white-hot core of iron was driven through it. Yet I went on. Nothing existed now but that golden brightening amid the clouds, clouds of creation, sentient with the shaking tumult of breaking universes, worlds beyond worlds crashing into ruin under the power of Llyr....

I stood before the Window.

Without volition my arm swept up. I brought the Sword Called Llyr smashing down upon Llyr's Window.

In my hand the sword broke.

It fell to tinkling fragments at my feet. The veined blue glimmers withered and coiled about the broken blade.

Were sucked into the Window.

Back rushed the cloud-masses. A tremendous, nearly unbearable vibration ripped through the Caer, shaking it like a sapling. The golden clouds were drawn through the Window.

With them went Edeyrn and Medea!
One glimpse I had of them, the brand of my fire like a red mask across Edeyrn's eyes, Medea's face despairing and filled with a horror beyond life, her gaze fixed on me with an imploring plea that was infinitely terrible. Then they vanished!

For one instant I saw through the Window. I saw something beyond space and time and dimension, a writhing, ravening chaos that bore down upon Medea and Edeyrn and a golden core of light that I knew for Llyr.

Once almost human, Llyr, at the end, bore no relation to anything remotely human.

The grinding millstones of Chaos crushed the three!

The thunder died.

Before me stood the altar of Llyr. But it held no Window, now. All four sides were of black, dead stone!

XVI. Self Against Self

blackness and black stones were the last things I saw, before dark oblivion closed down over me like folding wings. It was as if Llyr's terrible resistance was all that had held me upright in the last fierce stages of our struggle. As he fell, so fell Ganelon at the foot of the Windowless altar.

How long I lay there I do not know. But slowly, slowly Caer Llyr came back around me, and I knew I was lying prostrate upon the altar. I sat up painfully, the dregs of exhaustion still stiffening my body, though I knew--I must have slept, for that exhaustion was no longer the overwhelming tide that had flooded me as I fell.

Beyond me, at the head of the great steep of stairs, Freydis lay, half stretched upon the steps as if she had striven to return to her people in the moment before collapsing. Her eyes were still bound, and her mighty arms lay flung out upon the platform, all strength drained from them by the fierceness of our battle. Strangely, as she lay there, she brought back to my double-minded memories the thought of a figure from Earth -- another mighty woman in white robes, with bandaged eyes and upraised arms, blind Justice holding her eternal scales.

Faintly I smiled at the thought. In the Dark World -- my world, now -- Justice was Ganelon, and not blind.

Freydis stirred. One hand lifted uncertainly to the cloth across her eyes. I let her waken. Presently we must struggle again together, Justice and I. But I did not doubt who would prevail.

I rose to my knees, and heard a silvery tinkling as something slid in fragments from my shoulder. The Mask, broken when I fell. Its crystal shards lay among those other shards which had blasted Llyr from the Dark World when the Sword broke. I thought of the strange blue lightnings which had wrought at last what no other thing in the Dark World could accomplish -- Llyr's destruction. And I thought I understood.

He had passed too far beyond this world ever to touch it except in the ceremonies of the Golden Window. Man, demon, god, mutation into namelessness -- whatever he had been, he had kept but one link with the Dark World which spawned him. A link enshrined in the Sword Called Llyr. By that talisman he could return for the sacrifices which fed him, return for the great ceremonies of the Sealing that had made me half his own. But only by that talisman.

So it must be safely hidden to be his bridge for the returning. And safely hidden it was. Without Ghast Rhymi's knowledge, who could have found it? Without the strength of the great Lord Ganelon -- well, yes, and the strength of Freydis too -- who could have won close enough to the window to shatter the Sword upon the only thing in the Dark World that could break it? Yes, Llyr had guarded his talisman as strongly as any guard could. But vulnerable he was, to the one man who could wield that Sword.

So the Sword broke, and the bridge between worlds broke, and Llyr was gone into a chaos from which there could never be a returning.

Medea, too -- red witch of Colchis, lost love, drinker of life, gone beyond recalling....

For a moment I closed my eyes.

"Well, Ganelon?"

I looked up. Freydis was smiling grimly at me from beneath the uplifted blindfold. I rose to my feet and watched in silence while she got to hers. Triumph flooded through me in great waves of intoxicating warmth. The world I had just wakened to was wholly mine now, and not this woman nor any other human should balk me of my destiny. Had I not vanquished Llyr and slain the last of the Coven? And was I not stronger in magic than any man or woman now who walked the Dark World? I laughed, the deep sound echoing from the high vaults about us and rolling back in reverberant exultation until that which had been Caer Llyr was alive with the noise of my mirth. But Llyr was here no longer.

"Let this be Caer Ganelon!" I said, hearing the echo of my own name come rolling back as if the castle itself replied.

"Ganelon!" I shouted. "Caer Ganelon!" I laughed to hear the whole vast hollow repeating my name. While the echoes still rolled I spoke to Freydis.

"You have a new master now, you forest people! Because you helped me you shall be rewarded, old woman, but I am master of the Dark World -- I Ganelon!" And the walls roared back to me, "Ganelon -- Ganelon!"
Freydis smiled. "Not so fast, Covenanter," she said calmly. "Did you think I trusted you?"

I gave her a scornful smile, "What can you do to me now? Only one thing could slay me before today -- Llyr Himself. Now Llyr is gone, and Ganelon is immortal! You have no power to touch me, sorceress!"

She straightened on the step, her ageless face a little below mine. There was a sureness in her eyes that sent the first twinge of uneasiness into my mind. Yet what I had said was true for no one in the Dark World could harm me, now. Yet Freydis' smile did not waver.

"Once I sent you through limbo into the Earth World," she said. "Could you stop me if I sent you there again?"

Relief quieted my tremor of unease. "Tomorrow or the next day -- yes, I could stop you. Today, no. But I am Ganelon now, and I know the way back. I am Ganelon, and forewarned, and I think you could not so easily send me Earthward again, naked of memories and clothed in another man's past. I remember and I could return. You would waste your time and mine, Freydis. Yet try it, if you will and I warn you, I should be back again before your spell was finished."

Her quiet smile did not falter. She folded her arms, hiding her hands in the flowing sleeves. She was very sure of herself.

"You think you are a godling, Ganelon," she said. "You think no mortal power can touch you now. You have forgotten one thing. As Llyr had his weakness, as Edeyrn did, and Medea and Matholch so have you, Covenanter. In this world there is no man to match you. But in the Earth World there is, Lord Ganelon! In that world your equal lives, and I mean to call him out to fight one last battle for the freedom of the Dark World. Edward Bond could slay you, Ganelon!"

I felt the blood leave my face, a little wind of chill like Edeyrn's glance breathed over me. I had forgotten. Even Llyr, by his own unimaginable hand, could have died. And I could die by my own hand too, or by the hand of that other self who was Edward Bond.

"Fool!" I said. "Dotard! Have you forgotten that Bond and I can never stand in the same world? When I came, he vanished out of this land, just as I must vanish if you bring him here. How can a man and his reflection ever come hand to hand? How could he touch me, old woman?"

"Easily," she smiled. "Very easily. He cannot fight you here, nor in the Earth World. That is true. But limbo, Ganelon? Have you forgotten limbo?"

Her hands came out of her sleeves. There was a rod of blinding silver in each. Before I could stir she had brought the rods together, crossing them before her smiling face. At the intersection forces of tremendous power blazed into an instant's being, forces that streamed from the poles of the world and could touch only for the beat of a second if that world were not to be shaken into fragments. I felt the building reel below me.

I felt the gateway open.

Here was grayness, nothing but oblivion made visible all around me. I staggered with the suddenness of it, the shock, and the terrible tide of anger that came surging up through my whole body at the knowledge of Freydis' trickery. It was not to be endured, this magicking of the Dark World's lord! I would fight my way back and the vengeance I would wreak upon Freydis would be a lesson to all.

Out of the grayness a mirror loomed before me. A mirror? I saw my own face, bewildered, uncomprehending, staring back into my eyes. But I was not wearing the ragged blue garments of sacrifice which I had donned so many aeons ago in the Castle of the Coven. I seemed to wear Earth garments, and I seemed not quite myself, not quite Ganelon. I seemed --

"Edward Bond!" said the voice of Freydis behind me.

The reflection of myself glanced across my shoulder, and a look of recognition and unutterable relief came over it.

"Freydis!" he cried, in my own voice. "Freydis, thank God! I've tried so hard --"

"Wait," Freydis stopped him. "Listen. There is one last trial before you. This man is Ganelon. He has undone all your work among the forest people. He has slain Llyr and the Coven. There is none in the Dark World to stay his hand if he wins his way back to it. Only you can stop him, Edward Bond. Only you."

I did not wait for her to say anything more. I knew what must be done. I lunged forward before he could speak or stir, and drove a heavy blow into the face that might have been my own. It was a strange thing to do. It was a hard thing. At the last moment my muscles almost refused me, for it was as if I struck myself.

I saw him reel back, and my own head reeled in imagination, so that the first blow rocked us both.

He caught himself a dozen feet away and stood for a moment, unsteady on his feet, looking at me with a confusion that might have been the mirror of my own face, for I knew there was confusion there too.

Then anger flushed those bewildering, familiar features, and I saw blood break from the corner of his mouth and trickle across his chin. I laughed savagely. That blood, somehow, made him my enemy. I had seen the blood of
enemies, springing out in the wake of my blows, too often to mistake him now for anything but what he was. Myself -- and my deadliest foe.

He dropped into a half-crouch and came for me, stooping to protect his body from my fists. I wished fervently for a sword or a gun. I have never cared for an equal fight, as Ganelon does not fight for sport, but to win. But this fight must be terribly, unbelievably equal.

He dodged beneath my blow, and I felt the rocking jar of what seemed to be my own fist jolting against my cheekbone. He danced back, light-footed, out of range.

Rage came snarling up in my throat. I wanted nothing of his boxing, this game fought by rules. Ganelon fought to win! I roared at him from the full depth of my lungs and hurled myself forward in a crushing embrace that carried us both heavily to the gray sponginess that was limbo's floor. My fingers sank delightfully in his throat. I groped savagely for his eyes. He grunted with effort and I felt his fist thud into my ribs, and felt the sharp white pain of breaking bone.

So wholly was he myself, and I he, that for an instant I was not sure whose rib had snapped beneath whose blow. Then I drew a deep breath and sobbed it out again half finished as pain like bright light flashed through my body, and I knew it was my own rib.

But in a moment or two, I knew somehow, very surely, that I was his master. And this is how I knew. He rolled half over to jab a hard blow into my face, and before the blow began, I had blocked it. I had known. He squirmed from beneath me and braced himself to strike me again in the ribs, and before he could strike, I had twisted sidewise away. Again I had known.

For I had been Edward Bond once, in every way that matters. I had lived in his memory and his world. And I knew Edward Bond as I knew myself. Instinct seemed to tell me what he would do next. He could not out-think me, and so he could not hope to out-tight me, to whom his every thought was revealed in the moment before he could act upon it.

Even in the pain of my broken rib, I laughed then. Freydis had overreached herself at last! In smothering Ganelon under Edward Bond's memories in the Earth World, she had given me the means to vanquish him now! He was mine, to finish when I chose, and the Dark World was mine, and Edward Bond's kingdom of free people was mine too, and Edward Bond's lovely pale-haired bride, and everything that might have been his own.

I laughed exultantly, and twisted in three perfectly timed motions that blocked and overbalanced the man who was myself. Three motions only -- and then I had him across my knee, taut-stretched, his spine pressing hard against my thigh.

I grinned down at him. My blood dripped into his face. I saw it strike there, and I met his eyes, and then strangely, for one flashing instant, I knew a fierce yearning for defeat. In that instant, I prayed voicelessly to a nameless god that Edward Bond might yet save himself, and Ganelon might die....

I called forth all the strength that was in me, and limbo swam redly before my eyes and the pain of my broken rib was a lance of white light as I drew the deep breath that was Edward Bond's last.

I broke his back across, my knee.

XVII. Freedom at Last!

HURRIEDLY TWO cold, smooth hands pressed hard upon my forehead. I looked up. They slid lower, covering my eyes. And weakness was like a blanket over me. I knelt there, unresisting, feeling the body of the man who had been myself slide limply from my knee.

Freydis pressed me down. We lay side by side, the living and the dead.

The silver rods of the sorceress touched my head, and made a bridge between Edward Bond and Ganelon. I remembered Medea's wand that could draw the life-force from the mind. A dull, numbing paralysis had me. Little tingling shocks rippled through my nerves, and I could not move.

Sudden agonizing pain shot through me. My back! I tried to scream with the white fury of that wrenching agony, but my throat was frozen. I felt Edward Bond's wounds!

In that nightmare moment, while my brain spun down the limitless corridors of a science beyond that of mankind, I knew what Freydis had done -- what she was doing.

I felt the mind of Edward Bond come back from the gulfs. Side by side we lay in flesh, and side by side in spirit as well.

There was blackness, and two flames, burning with a cold, clear fire....

One was the mind -- the life -- of Edward Bond. One was my life!
The flames bent toward each other!
They mingled and were one!
Life and soul and mind of Edward Bond merged with life of Ganelon!
Where two flames had burned, there was one now. One only.
And the identity of Ganelon ebbed, sank... faded into a graying shadow as the fires of Edward Bond’s life
leaped even higher!
We were one. We were --
Edward Bond! No longer Ganelon! No longer Lord of the Dark World, Master of the Caere!
Magic of Freydis drowned the soul of Ganelon and gave his body to the life of Edward Bond!
I saw Ganelon -- die!...
When I opened my eyes again, I knelt upon the altar that had been Llyr’s. The empty vaults towered hollowly
above us. Limbo was gone. The body across my knee was gone. Freydis smiled down at me with her ageless,
timeless smile.
"Welcome back to the Dark World, Edward Bond."
Yes, it was true. I knew that. I knew it was my own identity, housed though it was in another man's body.
Dizzily I blinked, shook my head, and rose slowly. Pain struck savagely at my side, and I gasped and let Freydis
spring forward to support me on one great white arm, while the hollow building reeled about me. But Ganelon was
gone. He had vanished with limbo, vanished like a scatter of smoke, vanished as if the prayer he breathed in his
extremity had been answered by the nameless god he prayed to.
I was Edward Bond again.
"Do you know why Ganelon could break you, Edward Bond?" Freydis said softly. "Do you know why you
could not vanquish him? It was not what he thought. I know he believed he read your mind because he had dwelt
there, but that was not the reason. When a man fights himself, my son, the same man does not fight to win. Only the
suicide hates himself. Deep within Ganelon lay knowledge of his own evil, and the hatred of it. So he could strike
his own image and exult in the blow, because he hated himself in the depths of his own mind.
"But you had earned your own respect. You could not strike as hard as he because you are not evil. And
Ganelon won -- and lost. In the end, he did not fight me. He had slain himself, and the man who does that has no
combat left in him."
Her voice sank to a murmur. Then she laughed.
"Go out now, Edward Bond. There is much to be done in the Dark World!"
So, leaning upon her arm, I went down the long steps that Ganelon had climbed. I saw the green glimmer of the
day outside, the shimmer of leaves, the motion of waiting people. I remembered all that Ganelon had remembered,
but upon the mind of Ganelon the mind of Edward Bond was forever superimposed, and I knew that only thus could
the Dark World be ruled.
The two together, twinned forever in one body, and the control forever mine -- Edward Bond’s.
We came out under the emptied arch of the opening, and daylight was blinding for a moment after that haunted
darkness. Then I saw the foresters anxiously clustering in then- battered ranks around the Caer, and I saw a pale girl
in green, haloed by her floating hair, turn a face of incredulous radiance to mine.
I forgot the pain in my side.
Aries' hair swam like mist about us both as my arms closed around her. The roar of exultation that went up
from the forest people swept the clearing and made the great Caer behind us echo through all its hollow vaults.
The Dark World was free, and ours.
But Medea, Medea, red witch of Colchis, how we might have reigned together!
It started in Greece on the day after tomorrow. Before the last act raced to a close, Coburn was buried to his ears in assorted adventures, including a revolution and an invasion from outer space!

We're not given to throwing around the word "epic" lightly, but here is one! Swashbuckling action, a great many vivid characters, and a weird mystery—all spun for you by one of the master story-tellers of our time.

On a certain day—it may be in the history books eventually—Coburn was in the village of Ardea, north of Salonika in the most rugged part of Greece. He was making a survey for purposes which later on turned out not to matter much. The village of Ardea was small, it was very early in the morning, and he was trying to get his car started when he heard the yell.

It was a shrill yell, and it traveled fast. Coburn jerked his head upright from the hood of the car. A whiskered villager with flapping trousers came pounding up the single street. His eyes were panic-stricken and his mouth was wide. He emitted the yell in a long, sustained note. Other villagers popped into view like ants from a disturbed ant-hill. Some instantly ran back into their houses. Others began to run toward the outskirts of the village, toward the south.

Coburn, watching blankly, found himself astonished at the number of people the village contained. He hadn't dreamed it was so populous. All were in instant frenzied flight toward the mountains. An old woman he'd seen barely hobbling now ran like a deer. Children toddled desperately. Adults snatched them up and ran. Larger children fled on twinkling legs. The inhabitants of Ardea vanished toward the hills in a straggling, racing, panting stream. They disappeared around an outcrop of stone which was merely the nearest place that would hide them. Then there was silence.

Coburn turned his head blankly in the direction from which they had run. He saw the mountains—incredibly stony and barren. That was all. No, not quite—there was something far away which was subtly different in color from the hillsides. It moved. It flowed over a hill crest, coming plainly from somewhere beyond the mountains. It was vague in shape. Coburn felt a momentary stirring of superstition. There simply couldn't be anything so huge....

But there could. There was. It was a column of soldiers in uniforms that looked dark-gray at this distance. It flowed slowly out of the mountains like a colossal snake—some Midgard monster or river of destruction. It moved with an awful, deliberate steadiness toward the village of Ardea.

Coburn caught his breath. Then he was running too. He was out of the village almost before he realized it. He did not try to follow the villagers. He might lead pursuers after them. There was a narrow defile nearby. Tanks could hardly follow it, and it did not lead where they would be going. He plunged into it and was instantly hidden. He pelted on. It was a trail from somewhere, because he saw ancient donkey-droppings on the stones, but he did not know where it led. He simply ran to get away from the village and the soldiers who were coming toward it.

This was Greece. They were Bulgarian soldiers. This was not war or even invasion. This was worse—a cold-war raid. He kept running and presently rocky cliffs overhung him on one side, a vast expanse of sky loomed to his left. He found himself panting. He began to hope that he was actually safe.

Then he heard a voice. It sounded vexed. Quite incredibly, it was talking English. "But my dear young lady!" it said severely. "You simply mustn't go on! There's the very devil of a mess turning up, and you mustn't run into it!"

A girl's voice answered, also in English. "I'm sure—I don't know what you're talking about!"

"I'm afraid I can't explain. But, truly, you mustn't go on to the village!"

Coburn pushed ahead. He came upon the people who had spoken. There was a girl riding on a donkey. She was American. Trim. Neat. Uneasy, but reasonably self-confident. And there was a man standing by the trail, with a slide of earth behind him and mud on his boots as if he'd slid down somewhere very fast to intercept this girl. He wore the distinctive costume a British correspondent is apt to affect in the wilds.

They turned as Coburn came into view. The girl goggled at him. He was not exactly the sort of third person one expected to find on a very lonely, ill-defined rocky trail many miles north of Salonika.

When they turned to him, Coburn recognized the man. He'd met Dillon once or twice in Salonika. He panted: "Dillon! There's a column of soldiers headed across the border! Bulgarians!"

"How close?" asked Dillon.

"They're coming," said Coburn, with some difficulty due to lack of breath. "I saw them across the valley. Everybody's run away from the village. I was the last one out."

Dillon nodded composedly. He looked intently at Coburn. "You know me," he said reservedly. "Should I
"I've met you once or twice," Coburn told him. "In Salonika."

"Oh," said Dillon. "Oh, yes. Sorry. I've got some cameras up yonder. I want a picture or two of those Bulgarians. See if you can persuade this young lady not to go on. I fancy it's safe enough here. Not a normal raid route through this pass."

Coburn nodded. Dillon expected the raid, evidently. This sort of thing had happened in Turkey. Now it would start up here, in Greece. The soldiers would strike fast and far, at first. They wouldn't stop to hunt down the local inhabitants. Not yet.

"We'll wait," said Coburn. "You'll be back?"

"Oh, surely!" said Dillon. "Five minutes or less."

He started up the precipitous wall, at whose bottom he had slid down. He climbed remarkably well. He went up hand-over-hand despite the steepness of the stone. It looked almost impossible, but Dillon apparently found handgrips by instinct, as a good climber does. In a matter of minutes he vanished, some fifty feet up, behind a bulging mass of stone. He did not reappear.

* * * * *

Coburn began to get his breath back. The girl looked at him, her forehead creased.

"Just to make sure," said Coburn, "I'll see if I can get a view back down the trail."

Where the vastness of the sky showed, he might be able to look down. He scrambled up a barrier two man-heights high. There was a screen of straggly brush, with emptiness beyond. He peered.

He could see a long way down and behind, and actually the village was clearly in sight from here. There were rumbling, caterpillar-tread tanks in the act of entering it. There were anachronistic mounted men with them. Cavalry is outdated, nowadays, but in rocky mountain country they can have uses where tanks can't go. But here tanks and cavalry looked grim. Coburn squirmed back and beckoned to the girl. She joined him. They peered through the brushwood together.

The light tanks were scurrying along the single village street. Horsemen raced here and there. A pig squealed. There was a shot. The tanks emerged from the other side. They went crawling swiftly toward the south. But they did not turn aside where the villagers had. They headed along the way Coburn had driven to Ardea.

[Illustration]

Infantrymen appeared, marching into the village. An advance party, rifles ready. This was strict discipline and standard military practise. Horsemen rode to tell them that all was quiet. They turned and spurred away after the tanks.

The girl said in a strained voice. "This is war starting! Invasion!"

Coburn said coldly, "No. No planes. This isn't war. It's a training exercise, Iron-Curtain style. This outfit will strike twenty--maybe thirty miles south. There's a town there--Kilkis. They'll take it and loot it. By the time Athens finds out what's happened, they'll be ready to fall back. They'll do a little fighting. They'll carry off the people. And they'll deny everything. The West doesn't want war. Greece couldn't fight by herself. And America wouldn't believe that such things could happen. But they do. It's what's called cold war. Ever hear of that?"

The main column of soldiers far below poured up to the village and went down the straggly street in a tide of dark figures. The village was very small. The soldiers came out of the other end of the village. They poured on after the tanks, rippling over irregularities in the way. They seemed innumerable.

"Three or four thousand men," said Coburn coldly. "This is a big raid. But it's not war. Not yet."

It was not the time for full-scale war. Bulgaria and the other countries in its satellite status were under orders to put a strain upon the outside world. They were building up border incidents and turmoil for the benefit of their masters. Turkey was on a war footing, after a number of incidents like this. Indo-China was at war. Korea was an old story. Now Greece. It always takes more men to guard against criminal actions than to commit them. When this raid was over Greece would have to maintain a full-size army in its northern mountains to guard against its repetition. Which would be a strain on its treasury and might help toward bankruptcy. This was cold war.

The infantry ended. Horse-drawn vehicles appeared in a seemingly endless line. Motorized transport would be better, but the Bulgarians were short of it. Shaggy, stubby animals plodded in the wake of the tanks and the infantry. There were two-wheeled carts in single file all across the valley. They went through the village and filed after the soldiers.

"I think," said Coburn in biting anger, "this will be all there is to see. They'll go in until they're stopped. They'll kidnap Greek civilians and later work them to death in labor camps. They'll carry off some children to raise as spies. But their purpose is probably only to make such a threat that the Greeks will go broke guarding against them. They know the Greeks don't want war."

He began to wriggle back from the brushwood screen. He was filled with the sort of sick rage that comes when
you can't actively resent insolence and arrogance. He hated the people who wanted the world to collapse, and this was part of their effort to bring it about.

He helped the girl down. "Dillon said to wait," he said. He found himself shaking with anger at the men who had ordered the troops to march. "He said he was taking pictures. He must have had an advance tip of some sort. If so, he'll have a line of retreat."

Then Coburn frowned. Not quite plausible, come to think of it. But Dillon had certainly known about the raid. He was set to take pictures, and he hadn't been surprised. One would have expected Greek Army photographers on hand to take pictures of a raid of which they had warning. Probably United Nations observers on the scene, too. Yes. There should be Army men and probably a United Nations team up where Dillon was.

Coburn explained to the girl. "That'll be it. And they'll have a radio, too. Probably helicopters taking them out also. I'll go up and tell them to be sure and have room for you."

He started for the cliff he'd seen Dillon climb. He paused: "I'd better have your name for them to report to Athens."

"I'm Janice Ames," she told him. "The Breen Foundation has me going around arranging for lessons for the people up here. Sanitation and nutrition and midwifery, and so on. The Foundation office is in Salonika, though."

He nodded and attacked the cliff.

* * * * *

It hadn't been a difficult climb for Dillon. It wasn't even a long one for Coburn, but it was much worse than he'd thought. The crevices for handholds were rare, and footholds were almost non-existent. There were times when he felt he was holding on by his fingernails. Dillon seemed to have made it with perfect ease, but Coburn found it exhausting.

Fifty feet up he came to the place where Dillon had vanished. But it was a preposterously difficult task to get across an undercut to where he could grasp a stunted tree. It was a strain to scramble up past it. Then he found himself on the narrowest of possible ledges, with a sickening drop off to one side. But Dillon had made it, so he followed.

He went a hundred yards, and then the ledge came to an end. He saw where Dillon must have climbed. It was possible, but Coburn violently did not want to try. Still ... He started.

Then something clicked in his throat. There was a rather deep ledge for a space of four or five feet. And there was Dillon. No, not Dillon. Just Dillon's clothes. They lay flat and deflated, but laid out in one assembly beside a starveling twisted bush. It would have been possible for a man to stand there to take off his clothes, if he wanted to. But a man who takes off his clothes--and why should Dillon do that?--takes them off one by one. These garments were fitted together. The coat was over the shirt, and the trousers fitted to the bottom of the shirt over the coat, and the boots were at the ends of the trouser legs.

Then Coburn saw something he did not believe. It palpably was not true. He saw a hand sticking out of the end of the sleeve. But it was not a hand, because it had collapsed. It was rather like an unusually thick glove, flesh color. Then he saw what should have been Dillon's head. And it was in place, too. But it was not Dillon's head. It was not a head at all. It was something quite different. There were no eyes. Merely holes. Openings. Like a mask.

Coburn felt a sort of roaring in his ears, and he could not think clearly for a moment because of the shrieking impossibility of what he was looking at. Dillon's necktie had been very neatly untied, and left in place in his collar. His shirt had been precisely unbuttoned. He had plainly done it himself. And then--the unbuttoned shirt made it clear--he had come out of his body. Physically, he had emerged and gone on. The thing lying flat that had lapsed at Coburn's feet was Dillon's outside. His outside only. The inside had come out and gone away. It had climbed the cliff over Coburn's head.

The outside of Dillon looked remarkably like something made out of foam-rubber. Coburn touched it, insanely.

He heard his own voice saying flatly: "It's a sort of suit. A suit that looks like Dillon. He was in it. Something was! Something is playing the part of Dillon. Maybe it always was. Maybe there isn't any Dillon."

He felt a sort of hysterical composure. He opened the chest. It was patently artificial. There were such details on the inside as would be imagined in a container needed to fit something snugly. At the edges of the opening there were fastenings like the teeth of a zipper, but somehow different. Coburn knew that when this was fastened there would be no visible seam.

Whatever wore this suit-that-looked-like-Dillon could feel perfectly confident of passing for Dillon, clothed or otherwise. It could pass without any question for--

Coburn gagged.

It could pass without question for a human being.

Obviously, whatever was wearing this foam-rubber replica of Dillon was not human!

Coburn went back to where he had to climb down the cliffside again. He moved like a sleep-walker. He
descended the fifty-foot cliff by the crevices and the single protruding rock-point that had helped him get up. It was much easier going down. In his state of mind it was also more dangerous. He moved in a sort of robot-like composure.

He moved toward the girl, trying to make words come out of his throat, when a small rock came clattering down the cliff. He looked up. Dillon was in the act of swinging to the first part of the descent. He came down, very confident and assured. He had two camera-cases slung from his shoulders. Coburn stared at him, utterly unable to believe what he'd seen ten minutes before.

Dillon reached solid ground and turned. He smiled wryly. His shirt was buttoned. His tie was tied.

"I hoped," he said ruefully to Janice Ames, "that the Bulgars would toddle off. But they left a guard in the village. We can't hope to take an easier trail. We'll have to go back the way you came. We'll get you safe to Salonika, though."

The girl smiled, uneasily but gratefully.

"And," added Dillon, "we'd better get started."

He gallantly helped the girl remount her donkey. At the sight, Coburn was shaken out of his numbness. He moved fiercely to intervene. But Janice settled herself in the saddle and Dillon confidently led the way. Coburn grimly walked beside her as she rode. He was convinced that he wouldn't leave her side while Dillon was around. But even as he knew that desperate certitude, he was filled with confusion and a panicky uncertainty.

When they'd traveled about half a mile, another frightening thought occurred to Coburn. Perhaps Dillon--passing for human--wasn't alone. Perhaps there were thousands like him.

Invaders! Usurpers, pretending to be men. Invaders, obviously, from space!

II

They made eight miles. At least one mile of that, added together, was climbing straight up. Another mile was straight down. The rest was boulder-strewn, twisting, donkey-wide, slanting, slippery stone. But there was no sign of anyone but themselves. The sky remained undisturbed. No planes. They saw no sign of the raiding force from across the border, and they heard no gunfire.

Coburn struggled against the stark impossibility of what he had seen. The most horrifying concept regarding invasion from space is that of creatures who are able to destroy or subjugate humanity. A part of that concept was in Coburn's mind now. Dillon marched on ahead, in every way convincingly human. But he wasn't. And to Coburn, his presence as a non-human invader of Earth made the border-crossing by the Bulgarians seem almost benevolent.

They went on. The next hill was long and steep. Then they were at the hill crest. They looked down into a village called Náousa. It was larger than Ardea, but not much larger. One of the houses burned unintended. Figures moved about. There were tanks in sight, and many soldiers in the uniform that looked dark-gray at a distance. The route by which Dillon had traveled had plainly curved into the line-of-march of the Bulgarian raiding force.

But the moving figures were not soldiers. The soldiers were still. They lay down on the grass in irregular, sprawling windrows. The tanks were not in motion. There were two-wheeled carts in sight--reaching back along the invasion-route--and they were just as stationary as the men and the tanks. The horses had toppled in their shafts. They were motionless.

The movement was of civilians--men and women alike. They were Greek villagers, and they moved freely among the unmilitarily recumbent troops, and even from this distance their occupation was clear. They were happily picking the soldiers' pockets. But there was one figure which moved from one prone figure to another much too quickly to be looting. Coburn saw sunlight glitter on something in his hand.

* * * * *

Dillon noticed the same thing Coburn did at the same instant. He bounded forward. He ran toward the village and its tumbled soldiers in great, impossible leaps. No man could make such leaps or travel so fast. He seemed almost to soar toward the village, shouting. Coburn and Janice saw him reach the village. They saw him rush toward the one man who had been going swiftly from one prone soldier to another. It was too far to see Dillon's action, but the sunlight glittered again on something bright, which this time flew through the air and dropped to the ground.

The villagers grouped about Dillon. There was no sign of a struggle.

"What's happened?" demanded Janice uneasily. "Those are soldiers on the ground."

Coburn's fright prevented his caution. He shouted furiously. "He's not a man! You saw it! No man can run so fast! You saw those jumps! He's not human! He's--something else!"

Janice jerked her eyes to Coburn in panic. "What did you say?"

Coburn panted: "Dillon's no man! He's a monster from somewhere in space! And he and his kind have killed those soldiers! Murdered them! And the soldiers are men! You stay here. I'll go down there and--"

"No!" said Janice. "I'm coming too."

He took the donkey's halter and led the animal down to the village, with Janice trembling a little in the saddle.
He talked in a tight, taut, hysterical tone. He told what he’d found up on the cliffside. He described in detail the similitude of a man's body he’d found deflated beside a stunted bush.

He did not look at Janice as he talked. He moved doggedly toward the village, dragging at the donkey's head. They neared the houses very slowly, and Coburn considered that he walked into the probability of a group of other creatures from unthinkable other star systems, disguised as men. It did not occur to him that his sudden outburst about Dillon sounded desperately insane to Janice.

They neared the houses very slowly, and Coburn considered that he walked into the probability of a group of other creatures from unthinkable other star systems, disguised as men. It did not occur to him that his sudden outburst about Dillon sounded desperately insane to Janice.

They reached the first of the fallen soldiers. Janice looked, shuddering. Then she said thinly: "He's breathing!"

He was. He was merely a boy. Twenty or thereabouts. He lay on his back, his eyes closed. His face was upturned like a dead man's. But his breast rose and fell rhythmically. He slept as if he were drugged.

But that was more incredible than if he'd been dead. Regiments of men fallen simultaneously asleep....

Coburn's flow of raging speech stopped short. He stared. He saw other fallen soldiers. Dozens of them. In coma-like slumber, the soldiers who had come to loot and murder lay like straws upon the ground. If they had been dead it would have been more believable. At least there are ways to kill men. But this...

Dillon parted the group of villagers about him and came toward Coburn and Janice. He was frowning in a remarkably human fashion.

"Here's a mess!" he said irritably. "Those Bulgars came marching down out of the pass. The cavalry galloped on ahead and cut the villagers off so they couldn't run away. They started to loot the village. They weren't pleasant. Women began to scream, and there were shootings—all in a matter of minutes. And then the looters began to act strangely. They staggered around and sat down and went to sleep!"

He waved his hands in a helpless gesture, but Coburn was not deceived.

"The tanks arrived. And they stopped—and their crews went to sleep! Then the infantry appeared, staggering as it marched. The officers halted to see what was happening ahead, and the entire infantry dropped off to sleep right where it stood!"

"It's bad! If it had happened a mile or so back ... The Greeks must have played a trick on them, but those cavalrymen raised the devil in the few minutes they were out of hand! They killed some villagers and then keeled over. And now the villagers aren't pleased. There was one man whose son was murdered, and he's been slitting the Bulgars' throats!"

He looked at Coburn, and Coburn said in a grating voice: "I see."

Dillon said distressedly: "One can't let them slit the throats of sleeping men! I'll have to stay here to keep them from going at it again. I say, Coburn, will you take one of their staff cars and run on down somewhere and tell the Greek government what's happened here? Something should be done about it! Soldiers should come to keep order and take charge of these chaps."

"Yes," said Coburn. "I'll do it. I'll take Janice along, too."

"Splendid!" Dillon nodded as if in relief. "She'd better get out of the mess entirely. I fancy there'd have been a full-scale massacre if we hadn't come along. The Greeks have no reason to love these chaps, and their intentions were hardly amiable. But one can't let them be murdered!!"

Coburn had his hand on his revolver in his pocket. His finger was on the trigger. But if Dillon needed him to run an errand, then there obviously were no others of his own kind about.

Dillon turned his back. He gave orders in the barbarous dialect of the mountains. His voice was authoritative. Men obeyed him and dragged uniformed figures out of a light half-track that was plainly a staff car. Dillon beckoned, and Coburn moved toward him. The important thing as far as Coburn was concerned was to get Janice to safety. Then to report the full event.

"I ... I'm not sure ... " began Janice, her voice shaking.

"I'll prove what I said," raged Coburn in a low tone. "I'm not crazy, though I feel like it!"

Dillon beckoned again. Janice slipped off the donkey's back. She looked pitifully frightened and irresolute.

"I've located the chap who's the mayor of this village, or something like that. Take him along. They might not believe you, but they'll have to investigate when he turns up."

A white-bearded villager reluctantly climbed into the back of the car. Dillon pleasantly offered to assist Janice into the front seat. She climbed in, deathly white, frightened of Coburn and almost ashamed to admit that his vehement outburst had made her afraid of Dillon, too.

Dillon came around to Coburn's side of the vehicle. "Privately," he said with a confidential air, "I'd advise you to dump this mayor person where he can reach authority, and then go away quietly and say nothing of what happened up here. If the Greeks are using some contrivance that handles an affair like this, it will be top secret. They won't like civilians knowing about it."
Coburn's grip on his revolver was savage. It seemed likely, now, that Dillon was the only one of his extraordinary kind about.

"I think I know why you say that," he said harshly.
Dillon smiled. "Oh, come now!" he protested. "I'm quite unofficial!"

He was incredibly convincing at that moment. There was a wry half-smile on his face. He looked absolutely human; absolutely like the British correspondent Coburn had met in Salonika. He was too convincing. Coburn knew he would suspect his own sanity unless he made sure.

"You're not only unofficial," said Coburn grimly. His hand came up over the edge of the staff-car door. It had his revolver in it. It bore inexorably upon the very middle of Dillon's body. "You're not human, either! You're not a man! Your name isn't Dillon! You're--something I haven't a word for! But if you try anything fancy I'll see if a bullet through your middle will stop you!"

Dillon did not move. He said easily: "You're being absurd, my dear fellow. Put away that pistol."

"You slipped!" said Coburn thickly. "You said the Greeks played a trick on this raiding party. But you played it. At Ardea, when you climbed that cliff--no man could climb so fast. No man could run as you ran down into this village. And I saw that body you're wearing when you weren't in it! I followed you up the cliff when--" Coburn's voice was ragingly sarcastic--"when you were taking pictures!"

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Dillon's face went impassive. Then he said: "Well?"

"Will you let me scratch your finger?" demanded Coburn almost hysterically. "If it bleeds, I'll apologize and freely admit I'm crazy! But if it doesn't ..."

The thing-that-was-not-Dillon raised its eyebrows. "It wouldn't," it said coolly. "You do know. What follows?"

"You're something from space," accused Coburn, "sneaking around Earth trying to find out how to conquer us! You're an Invader! You're trying out weapons. And you want me to keep my mouth shut so we Earth people won't patch up our own quarrels and join forces to hunt you down! But we'll do it! We'll do it!"

The thing-that-was-not-Dillon said gently: "No. My dear chap, no one will believe you."

"We'll see about that!" snapped Coburn. "Put those cameras in the car!"

The figure that looked so human hesitated a long instant, then obeyed. It lowered the two seeming cameras into the back part of the staff car.

Janice started to say, "I ... I ..."

The pseudo-Dillon smiled at her. "You think he's insane, and naturally you're scared," it said reassuringly. "But he's sane. He's quite right. I am from outer space. And I'm not humoring him either. Look!"

He took a knife from his pocket and snapped it open. He deliberately ran the point down the side of one of his fingers.

The skin parted. Something that looked exactly like foam-rubber was revealed. There were even bubbles in it.

The pseudo-Dillon said, "You see, you don't have to be afraid of him. He's sane, and quite human. You'll feel much better traveling with him." Then the figure turned to Coburn. "You won't believe it, but I really like you, Coburn. I like the way you've reacted. It's very ... human."

Coburn said to him: "It'll be human, too, when we start to hunt you down!" He let the staff car in gear. Dillon smiled at him. He let in the clutch, and the car leaped ahead.

*** ***

In the two camera-cases Coburn was sure that he had the cryptic device that was responsible for the failure of a cold-war raid. He wouldn't have dared drive away from Dillon leaving these devices behind. If they were what he thought, they'd be absolute proof of the truth of his story, and they should furnish clues to the sort of science the Invaders possessed. Show the world that Invaders were upon it, and all the world would combine to defend Earth. The cold war would end.

But a bitter doubt came to him. Would they? Or would they offer zestfully to be viceroys and overseers for the Invaders, betraying the rest of mankind for the privilege of ruling them even under unhuman masters?

Janice swayed against his shoulder. He cast a swift glance at her. Her face was like marble.

"What's the matter?"

She shook her head. "I'm trying not to faint," she said unsteadily. "When you told me he was from another world I ... thought you were crazy. But when he admitted it ... when he proved it ..."

Coburn growled. The trail twisted and dived down a steep slope. It twisted again and ran across a rushing, frothing stream. Coburn drove into the rivulet. Water reared up in wing-like sheets on either side. The staff car climbed out, rocking, on the farther side. Coburn put it to the ascent beyond. The trail turned and climbed and descended as the stony masses of the hills required.

"He's--from another world!" repeated Janice. Her teeth chattered. "What do they want--creatures like him?
How--how many of them are there? Anybody could be one of them! What do they want?"

"This is a pretty good world," said Coburn fiercely. "And his kind will want it. We're merely the natives, the aborigines, to them. Maybe they plan to wipe us out, or enslave us. But they won't! We can spot them now! They don't bleed. Scratch one and you find--foam-rubber. X-rays will spot them. We'll learn to pick them out--and when some specialists look over those things that look like cameras we'll know more still! Enough to do something!"

"Then you think it's an invasion from space?"

"What else?" snapped Coburn.

His stomach was a tight cramped knot now. He drove the car hard!

In air miles the distance to be covered was relatively short. In road miles it seemed interminable. The road was bad and curving beyond belief. It went many miles east and many miles west for every mile of southward gain. The hour grew late. Coburn had fled Ardea at sunrise, but they'd reached Náousa after midday and he drove frantically over incredible mountain roads until dusk. Despite sheer recklessness, however, he could not average thirty miles an hour. There were times when even the half-track had to crawl or it would overturn. The sun set, and he went on up steep grades and down steeper ones in the twilight. Night fell and the headlights glared ahead, and the staff car clanked and clanked and grumbled and roared on through the darkness.

They probably passed through villages--the headlights showed stone hovels once or twice--but no lights appeared. It was midnight before they saw a moving yellow spot of brightness with a glare as of fire upon steam above it. There were other small lights in a row behind it, and they saw that all the lights moved.

"A railroad!" said Coburn. "We're getting somewhere!"

It was a railroad train on the other side of a valley, but they did not reach the track. The highway curved away from it.

At two o'clock in the morning they saw electric lights. The highway became suddenly passable. Presently they ran into the still, silent streets of a slumbering town--Serrai--an administrative center for this part of Greece. They threaded its ways while Coburn watched for a proper place to stop. Once a curiously-hatted policeman stared blankly at them under an arc lamp as the staff car clanked and rumbled past him. They saw a great pile of stone which was a church. They saw a railroad station.

Not far away there was a building in which there were lights. A man in uniform came out of its door. Coburn stopped a block away. There were uneasy stirrings, and the white-bearded passenger from the village said incomprehensible things in a feeble voice. Coburn got Janice out of the car first. She was stiff and dizzy when she tried to walk. The Greek was in worse condition still. He clung to the side of the staff car.

"We tell the truth," said Coburn curtly, "when we talk to the police. We tell the whole truth--except about Dillon. That sounds too crazy. We tell it to top-level officials only, after they realize that something they don't know anything about has really taken place. Talk of Invaders from space would either get us locked up as lunatics or would create a panic. This man will tell what happened up there, and they'll investigate. But we take these so-called cameras to Salonika, and get to an American battleship."

He lifted Dillon's two cameras by the carrying-straps. And the straps pulled free. They'd held the cases safely enough during a long journey on foot across the mountains. But they pulled clear now.

Coburn had a bitter thought. He struck a match. He saw the leather cases on the floor of the staff car. He picked up one of them. He took it to the light of the headlights, standing there in the resonant darkness of a street in a city of stone houses.

The leather wasBrittle. It was friable, as if it had been in a fire. Coburn plucked it open, and it came apart in his hands. Inside there was the smell of scorched things. There was a gritty metallic powder. Nothing else. The other carrying-case was in exactly the same condition.

Coburn muttered bitterly: "They were set to destroy themselves if they got into other hands than Dillon's. We haven't a bit of proof that he wasn't a human being. Not a shred of proof!"

He suddenly felt a sick rage, as if he had been played with and mocked. The raid from Bulgaria was serious enough, of course. It would have killed hundreds of people and possibly hundreds of others would have been enslaved. But even that was secondary in Coburn's mind. The important thing was that there were Invaders upon Earth. Non-human monsters, who passed for humans through disguise. They had been able to travel through space to land secretly upon Earth. They moved unknown among men, learning the secrets of mankind, preparing for--what?  

III

They got into Salonika early afternoon of the next day, after many hours upon an antique railroad train that puffed and grunted and groaned among interminable mountains. Coburn got a taxi to take Janice to the office of the
Breen Foundation which had sent her up to the north of Greece to establish its philanthropic instruction courses. He
hadn't much to say to Janice as they rode. He was too disheartened.

In the cab, though, he saw great placards on which newspaper headlines appeared in Greek. He could make out
the gist of them. Essentially, they shrieked that Bulgarians had invaded Greece and had been wiped out. He made
out the phrase for valiant Greek army. And the Greek army was valiant enough, but it hadn't had anything to do with
this.

From the police station in Serrai--he had been interviewed there until dawn--he knew what action had been
taken. Army planes had flown northward in the darkness, moved by the Mayor's, and Coburn's, and Janice's tale of
Bulgarian soldiers on Greek soil, sleeping soundly. They had released parachute flares and located the village of
Náousa. Parachutists with field radios had jumped, while other flares burned to light them to the ground. That was
that. Judging by the placards, their reports had borne out the story Coburn had brought down. There would be a
motorized Greek division on the way to take charge of the four-thousand-odd unconscious raiders. There was
probably an advance guard there now.

But there was no official news. Even the Greek newspapers called it rumors. Actually, it was leaked
information. It would be reasonable for the Greek government to let it leak, look smug, and blandly say "No
comment" to all inquiries, including those from Bulgaria.

But behind that appearance of complacency, the Greek government would be going quietly mad trying to
understand what so fortunately had happened. And Coburn could tell them. But he knew better than to try without
some sort of proof. Yet, he had to tell. The facts were more important than what people thought of him.

The cab stopped before his own office. He paid the driver. The driver beamed and said happily: "Tys nikisame,
ő?"

Coburn said, "Poly kala. Orea."

* * * * *

His office was empty. It was dustier than usual. His secretary was probably taking a holiday since he was
supposed to be out of town. He grunted and sat down at the telephone. He called a man he knew. Hallen--another
American--was attached to a non-profit corporation which was attached to an agency which was supposed to
coöperate with a committee which had something to do with NATO. Hallen answered the phone in person.

Coburn identified himself. "Have you heard any rumors about a Bulgarian raid up-country?" he asked.

"I haven't heard anything else since I got up," Hallen told him.

"I was there," said Coburn. "I brought the news down. Can you come over?"

"I'm halfway there now!" said Hallen as he slammed down the phone.

Coburn paced up and down his office. It was very dusty. Even the seat of the chair at his secretary's desk was
dusty. The odds were that she was coming in only to sort the mail, and not even sitting down for that. He shrugged.

He heard footsteps. The door opened. His secretary, Helena, came in. She looked surprised.

"I was at lunch," she explained. She had a very slight accent. She hung up her coat. "I am sorry. I stopped at a
store."

He had paused in his pacing to nod at her. Now he stared, but her back was turned toward him. He blinked. She
had just told a very transparent lie. And Helena was normally very truthful.

"You had a good trip?" she asked politely.

"Fair," said Coburn. "Any phone calls this morning?" he asked.

"Not this morning," she said politely.

She reached in a desk drawer. She brought out paper. She put it in the typewriter and began to type.

Coburn felt very queer. Then he saw something else. There was a fly in the office--a large, green-bodied fly of
metallic lustre. The inhabitants of Salonika said with morbid pride that it was a specialty of the town, with the most
painful of all known fly stings. And Helena abhorred flies.

It landed on the bare skin of her neck. She did not notice. It stayed there. Ordinarily she would have jumped up,
exclaiming angrily in Greek, and then she would have pursued the fly vengefully with a folded newspaper until she
killed it. But now she ignored it.

Hallen came in, stamping. Coburn closed the door behind him. He felt queer at the pit of his stomach. For
Helena to let a fly stay on her neck suggested that her skin was ... somehow not like its usual self.

"What happened to those Bulgarians?" demanded Hallen.

Coburn told him precisely what he'd seen when he arrived in Náousa after an eight-mile hike through
mountains. Then he went back and told Hallen precisely what he'd seen up on the cliffside.

"His cameras were some sort of weapon. He played it on the marching column, it took effect and they went to
sleep," he finished. "I took them away from him and brought them down, but--"

He told about the contents of the camera cases being turned to a gritty, sooty powder. Then he added: "Dillon
set them to destroy themselves. You understand. He's not a man. He's a creature from some planet other than Earth, passing for a human being. He's an Invader from space."

Hallen's expression was uneasy and compassionate but utterly unbelieving. Helena shivered and turned away her face. Coburn's lips went taut. He reached down to his desk. He made a sudden, abrupt gesture. Hallen caught his breath and started up.

* * * * *

Coburn said curtly: "Another one of them. Helena, is that foam-suit comfortable?"
The girl jerked her face around. She looked frightened.

"Helena," said Coburn, "the real Helena, that is, would not sit down on a dusty chair. No woman would. But you did. She is a very truthful girl. You lied to me. And I just stuck pins in your shoulder and you didn't notice. They're sticking in your foam suit now. You and the creature that passed for Dillon up-country are both aliens. Invaders. Do you want to try to convince me otherwise?"
The girl said evenly: "Mr. Coburn, I do not think you are well--"

Then Coburn said thickly: "I'm crazy enough to put a bullet through you if your gang of devils has harmed the real Helena. What's happened to her?"

Hallen moved irresolutely to interfere. But the girl's expression changed. She smiled. "The real Helena, Mr. Coburn," said an entirely new voice, "has gone to the suburbs to visit her fiancée's family. She is quite safe."

There was dead silence. The figure--it even moved like Helena--got composedly to its feet. It got its coat. It put the coat on. Hallen stared with his mouth open. The pins hadn't convinced him, but the utterly different voice coming from this girl's mouth had. Yet, waves of conflicting disbelief and conviction, horror and a racking doubt, chased themselves over his features.

"She admits she's not Helena!" said Coburn with loathing. "It's not human! Should I shoot it?"
The girl smiled at him again. Her eyes were very bright. "You will not, Mr. Coburn. And you will not even try to keep me prisoner to prove your story. If I screamed that you attack me--" the smile widened--"Helena's good Greek friends would come to my assistance."

She walked confidently to the door and opened it. Then she said warmly: "You are very intelligent, Mr. Coburn. We approve of you very much. But nobody will believe you."
The office door closed.

Coburn turned stiffly to the man he'd called to hear him. "Should I have shot her, Hallen?"

Hallen sat down as if his knees had given way beneath him. After a long time he got out a handkerchief and painfully mopped his face. At the same time he shivered.

"N-no..." Then he swallowed. "My God, Coburn! It's true!"

"Yes," said Coburn bitterly, "or you're as crazy as I am."

Hallen's eyes looked haunted. "I--I..." He swallowed again. "There's no question about the Bulgarian business. That did happen! And you were there. And--there've been other things.... Rumors.... Reports that nobody believed.... I might be able to get somebody to listen...." He shivered again. "If it's true, it's the most terrible thing that ever happened. Invaders from space.... Where do you think they came from, Coburn?"

"The creature that looked like Dillon could climb incredibly fast. I saw it run and leap. Nothing on Earth could run or leap like that." Coburn shrugged. "Maybe a planet of another sun, with a monstrous gravity."

"Try to get somebody to believe that, eh?" Hallen got painfully to his feet. "I'll see what I can do. I... don't know that I can do anything but get myself locked up for observation. But I'll call you in an hour."

He went unsteadily out of the door. Coburn instantly called the Breen Foundation on the telephone. He'd left Janice there less than an hour before. She came to the phone and gasped when she heard his voice. Raging, he told her of Helena, then cautioned her to be especially careful--to be suspicious of everybody.

"Don't take anybody's word!" snapped Coburn. "Doubt everybody! Doubt me! Until you're absolutely certain. Those creatures are everywhere.... They may pretend to be anybody!"

After Coburn hung up on Janice, he sat back and tried to think logically. There had to be some way by which an extra-terrestrial Invader could be told instantly from a human being. Unmask and prove even one such creature, and the whole story would be proved. But how detect them? Their skin was perfectly deceptive. Scratched, of course, they could be caught. But one couldn't go around scratching people. There was nothing of the alien creature's own actual form that showed.

Then Coburn remembered the Dillon foam suit. The head had been hollow. Flaccid. Holes instead of eyes. The creature's own eyes showed through.

But he'd have to make certain. He'd have to look at a foam-suited creature. He could have examined Helena's eyes, but she was gone now. However, there was an alternative. There was a Dillon in Salonika, as there was a Helena. If the Dillon in Salonika was the real Dillon--if there were a real Dillon--he could look at his eyes. He could
tell if he were the false Dillon or the real one.

* * * * *

At this hour of the afternoon a Britisher would consider tea a necessity. There was only one place in Salonika where they served tea that an Englishman would consider drinkable. Coburn got into a cab and gave the driver the address, and made sure of the revolver in his pocket. He was frightened. He was either going to meet with a monster from outer space, or be on the way to making so colossal a fool of himself that a mental asylum would yawn for him.

He went into the one coffee-shop in Salonika which served drinkable tea. It was dark and dingy inside, though the tablecloths were spotless. He went in, and there was Dillon.

Coburn's flesh crawled. If the figure sitting there with the London Times and a cup of tea before him were actually a monster from another planet ...

But Dillon read comfortably, and sipped his tea. Coburn approached, and the Englishman looked up inquiringly.

"I was ... up in the mountains," said Coburn feverishly, "when those Bulgarians came over. I can give you the story."

Dillon said frostily: "I'm not interested. The government's officially denied that any such incident took place. It's merely a silly rumor."

It was reasonable that it should be denied. But it had happened, nonetheless. Coburn stared, despite a consciousness that he was not conspicuously rational in the way his eyes searched Dillon's face hungrily. The eyes were different! The eyes of the Dillon up in the mountains had been larger, and the brown part--But he had to be sure.

Suddenly, Coburn found himself grinning. There was a simple, a perfect, an absolute test for humanity!

Dillon said suspiciously: "What the devil are you staring at me for?"

Coburn continued to grin uncontrollably, even as he said in a tone of apology: "I hate to do this, but I have to be sure...."

He swung. He connected with Dillon's nose. Blood started.

Coburn zestfully let himself be thrown out, while Dillon roared and tried to get at him through the flying wedge of waiters. He felt an enormous relaxation on the way back to his office in another cab. He was a trifle battered, but it was worth it.

* * * * *

Back in the office he called Hallen again. And again Hallen answered. He sounded guilty and worried.

"I don't know whether I'm crazy or not," he said bitterly. "But I was in your office. I saw your secretary there--and she didn't feel pins stuck in her. And something did happen to those Bulgarians that the Greeks don't know anything about, or the Americans either. So you're to tell your story to the high brass down in Athens. I think you'll be locked up afterward as a lunatic--and me with you for believing my own eyes. But a plane's being readied."

"Where do I meet you?" asked Coburn.

Hallen told him. A certain room out at the airport. Coburn hung up. The telephone rang instantly. He was on the way out, but he turned back and answered it. Janice's voice--amazingly convincing--came from the instrument. And at the first words his throat went dry. Because it couldn't be Janice.

"I've been trying to get you. Have you tried to reach me?"

"Why, no. Why?"

Janice's voice said: "I've something interesting to tell you. I left the office an hour ago. I'm at the place where I live when I'm in Salonika. Write down the address. Can you come here? I've found out something astonishing!"

He wrote down the address. He had a feeling of nightmarishness. This was not Janice--"I'm clearing up some matters you'll guess at," he said grimly, "so I may be a little while getting there. You'll wait?"

He hung up. And then with a rather ghastly humor he took some pins from a box on the desk and worked absorbedly at bending one around the inside of the band of the seal ring he wore on his right hand.

* * * * *

But he didn't go to the telephoned address. He went to the Breen Foundation. And Janice was there. She was the real Janice. He knew it instantly he saw her. She was panic-stricken when he told her of his own telephone experience. Her teeth chattered. But she knew--instinctively, she said--that he was himself. She got into the cab with him.

They reached the airport and found the office Hallen had named. The lettering on it, in Greek and French, said that it was a reception room for official visitors only.

"Our status is uncertain," said Coburn drily. "We may be official guests, or we may be crazy. It's a toss-up
which status sticks."

He opened the door and looked carefully inside before he entered. Hallen was there. There was a lean, hard-bitten colonel of the American liaison force in Greece. There was a Greek general, pudgy and genial, standing with his back to a window and his hands clasped behind him. There were two Greek colonels and a major. They regarded him soberly.

"Howd'o, Coburn," said Hallen painfully. "You're heading for Athens, you know. This is Miss Ames? But these gentlemen have ... ah ... a special concern with that business up-country. They'd like to hear your story before you leave."

"I suppose," said Coburn curtly, "it's a sort of preliminary commission in lunacy."

But he shook hands all around. He kept his left hand in his coat pocket as he shook hands with his right. His revolver was in his left-hand pocket now too. The Greek general beamed at him. The American colonel's eyes were hard and suspicious. One of the two Greek colonels was very slightly cross-eyed. The Greek major shook hands solemnly.

Coburn took a deep breath. "I know my tale sounds crazy," he said, "but ... I had a telephone call just now. Hallen will bear me out that my secretary was impersonated by somebody else this afternoon."

"I've told them that," said Hallen unhappily.

"And something was impersonating Dillon up in the hills," finished Coburn. "I've reason to believe that at this address--and he handed the address he'd written down to Hallen--a ... creature will be found who will look most convincingly like Miss Ames, here. You might send and see."

The American colonel snorted: "This whole tale's preposterous! It's an attempt to cash in on the actual mystery of what happened up-country."

The Greek general protested gently. His English was so heavily accented as to be hard to understand, but he pointed out that Coburn knew details of the event in Náousa that only someone who had been there could know.

"True enough," said the American officer darkly, "but he can tell the truth now, before we make fools of ourselves sending him to Athens to be unmasked. Suppose," he said unpleasantly, "you give us the actual facts!"

Coburn nodded. "The idea you find you can't take is that creatures that aren't human can be on Earth and pass for human beings. There's some evidence on that right here." He nodded to the Greek major who was the junior officer in the room. "Major, will you show these other gentlemen the palm of your hand?"

The Greek major frowned perplexedly. He lifted his hand and looked at it. Then his face went absolutely impassive.

"I'm ready to shoot!" snapped Coburn. "Show them your hand. I can tell now."

He felt the tensing of the others in the room, not toward the major but toward him. They were preparing to jump him, thinking him mad.

But the major grinned ruefully: "Clever, Mr. Coburn! But how did you pick me out?"

Then there was a sensation of intolerable brightness all around. But it was not actual light. It was a sensation inside one's brain.

Coburn felt himself falling. He knew, somehow, that the others were falling too. He saw everyone in the room in the act of slumping limply to the floor--all but the Greek major. And Coburn felt a bitter, despairing fury as consciousness left him.

IV

He came to in a hospital room, with a nurse and two doctors and an elaborate oxygen-administering apparatus. The apparatus was wheeled out. The nurse followed. The two doctors hurried after her. The American colonel of the airport was standing by the bed on which Coburn lay, fully dressed.

Coburn felt perfectly all right. He stirred. The American colonel said sourly: "You're not harmed. Nobody was. But Major Pangalos got away."

Coburn sat up. There was a moment's bare trace of dizziness, and that was gone too. Coburn said: "Where's Miss Ames? What happened to her?"

"She's getting oxygen," said the colonel. "We were rushed here from the airport, sleeping soundly just like those Bulgarians. Major Pangalos ordered it before he disappeared. Helicopters brought some Bulgarians down, by the way, and oxygen brought them to. So naturally they gave us the same treatment. Very effective."

The colonel looked both chastened and truculent. "How'd you know Major Pangalos for what he was? He was accepted everywhere as a man."

"His eyes were queer," said Coburn. He stood up experimentally. "I figured they would be, if one looked. I saw the foam suit that creature wore up-country, when he wasn't in it. There were holes for the eyes. It occurred to me that his eyes weren't likely to be like ours. Not exactly. So I hunted up the real Dillon, and his eyes weren't like I remembered. I punched him in the nose, by the way, to make sure he'd bleed and was human. He was."
Coburn continued, "You see, they obviously come from a heavy planet and move differently. They're stronger than we are. Much like the way we'd be on the moon with one-sixth Earth gravity. They probably are used to a thicker atmosphere. If so, their eyes wouldn't be right for here. They'd need eyeglasses."

"Major Pangalos didn't--"

"Contact eyeglasses," said Coburn sourly. "Little cups of plastic. They slip under the eyelids and touch the white part of the eye. Familiar enough. But that's not all."

The American colonel looked troubled. "I know contact lenses," he admitted. "But--"

"If the Invaders have a thick atmosphere at home," Coburn said, "they may have a cloudy sky. The pupils of their eyes may need to be larger. Perhaps they're a different shape. Or their eyes may be a completely alien color. Anyhow, they need contact lenses not only to correct their vision, but to make their eyes look like ours. They're painted on the inside to change the natural look and color. It's very deceptive. But you can tell."

"That goes to Headquarters at once!" snapped the colonel.

He went out briskly. Coburn followed him out of the room to look for Janice. And Janice happened to be looking for him at exactly the same moment. He was genuinely astonished to realize how relieved he was that she was all right.

He said apologetically: "I was worried! When I felt myself passing out I felt pretty rotten at having failed to protect you."

She looked at him with nearly the same sort of surprised satisfaction. "I'm all right," she said breathlessly. "I was worried about you."

The roaring of motors outside the hospital interrupted them. More and more vehicles arrived, until a deep purring filled the air. A Greek doctor with a worried expression hurried somewhere. Soldiers appeared, hard-bitten, tough, professional Greek soldiers. Hallen came out of a hospital room. The Greek general appeared with one of the two colonels who'd been at the airport. The general nodded, and his eyes seemed cordial. He waved them ahead of him into a waiting elevator. The elevator descended. They went out of the hospital and there was an armored car waiting. An impressive escort of motorcycle troops waited with it.

* * * * *

The Greek general saw Coburn's cynical expression at sight of the guards. He explained blandly that since oxygen brought sleeping Bulgarians out of their slumber--and had been used on them--oxygen was handy for use by anybody who experienced a bright flash of light in his mind. The Bulgarian soldiers, incidentally, said that outside the village of Ardea they'd felt as if the sunlight had brightened amazingly, but they felt no effects for two hours afterward, when they fell asleep at Náousa. So, said the general almost unintelligibly, if anything untoward happened on the way to the airport, everybody would start breathing oxygen. A sensation of bright light would be untoward.

The armored car started off, with motorcyclists crowded about it with weapons ready. But the ride to the airport was uneventful. To others than Janice and Coburn it may even have been tedious. But when she understood the general's explanation, she shivered a little. She leaned insensibly closer to Coburn. He took her hand protectively in his.

They reached the airport. They roared through the gateway and directly out upon the darkened field. Something bellowed and raced down a runway and took to the air. Other things followed it. They gained altitude and circled back overhead. Tiny bluish flickerings moved across the overcast sky. Exhaust flames.

Coburn realized that it was a fighter plane escort.

The huge transport plane that waited for them was dark. They climbed into it and found their seats. When it roared down the unlighted field and took to the air, everything possible had been done to keep anybody from bringing any weapon to bear upon it.

"All safe now!" said the voice of the American colonel in the darkness of the unlit plane, as the plane gained height. "Incidentally, Coburn, why did you want to look at Pangalos' palm? What did you expect to find there?"

"When I started for the airport," Coburn explained, "I bent a pin around the band of a ring I wear. I could let it lie flat when I shook hands. Or I could make it stand out like a spur. I set it with my thumb. I saw Pangalos' eyes, so I had it stand out, and I made a tear in his plastic skin when I shook hands with him. He didn't feel it, of course." He paused. "Did anybody go to the address I gave Hallen?"

Hallen said, in the darkness: "Major Pangalos got there first."

The blackness outside the plane seemed to grow deeper. There was literally nothing to be seen but the instrument dials up at the pilots' end of the ship.

The Greek general asked a question in his difficult English.

"Where'd they come from?" repeated Coburn. "I've no idea. Off Earth, yes. A heavy planet, yes. I doubt they come from our solar system, though. Somewhere among the stars."
The Greek general said something with a sly up-twist of his voice. Whatever and whoever the Invaders were, he said, they did not like Bulgarians. If they'd knocked out the raiding party simply to test their weapons against human subjects, at least they had chosen suitable and pleasing subjects for the test.

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There was light. For an instant Coburn tensed. But the plane climbed and the brightness steadied. It was the top of a cloud bank, brilliantly white in the moonlight. They had flown up through it, and it reached as far ahead as they could see. A stubby fighter plane swam up out of the mist and fell into position alongside. Others appeared. They took formation about the transport and all flew steadily through the moonlight.

"I wish I knew," said the American colonel vexedly, "if those creatures were only testing weapons, or if they were getting set to start bargaining with us!"

"Meaning?" asked Coburn.

"If they're here," said the colonel angrily, "and if they do mean to meddle in our business, they may set up a sort of auction with us bidding against the Iron Curtain gang for their friendship. And they'd make any deal!"

The Greek general agreed drily. He said that free people were not practical people. They were always ready to die rather than cease to be free. Surely the Greeks had proved themselves ready to die. But people like the Bulgarians thought that to continue to live was the most important thing in the world. It was, of course, the practical view-point....

"They can have it!" growled Coburn.

Janice said hesitantly: "But the Invaders haven't killed anybody we know of. They could have killed the Bulgarians. They didn't. The one who called himself Dillon stopped one man from killing them. And they could have killed us, earlier today at the airport. Could they want to be friends?"

"They're starting the wrong way," said Coburn.

The Greek general stirred in his seat, but he was pointedly silent.

The pilot snapped abruptly from up at the bow of the plane: "Colonel! sir! Two of the fighters are climbing as if they've spotted something. There go the rest."

Coburn leaned across Janice to stare out the window. When the fighters were below the transport, they could be seen in silhouette against the clouds. Above, their exhaust flames pin-pointed them. Small blue flames climbed steeply.

The big ship went on. The roar of its motors was steady and unvarying. From a passenger seat it was not possible to look overhead. But suddenly there were streaking sparks against the stars. Tracer bullets. Fighters swerved and plunged to intercept something....

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And a Thing came down out of the sky with a terrific velocity. Tracer bullets sprayed all around it. Some could be seen to ricochet off its sides. Flashings came from the alien craft. They were not explosions from guns. They were lurid, actinic, smokeless blasts of pure light. The Thing seemed to be made of polished metal. It dodged, trying to approach the transport. The fighters lunged to prevent it. The ghastly game of interception seemed to rush here and there all over the sky.

The strange object was not possibly of human design or manufacture. It had no wings. It left no trail of jet fumes or rocket smoke. It was glittering and mirror-like, and it was shaped almost exactly like two turtle-shells base to base. It was flat and oval. It had no visible external features.

It flung itself about with incredible darts and jerkings. It could stop stock still as no plane could possibly stop, and accelerate at a rate no human body could endure. It tried savagely to get through the swarming fighters to the transport. Its light weapon flashed--but the pilots would be wearing oxygen masks and there were no casualties among the human planes. Once a fighter did fall off in a steep dive, and fluttered almost down to the cloud bank before it recovered and came back with its guns spitting.

That one appeared to end the fight. It came straight up, pumping tracers at the steel flier from below. And the glittering Thing seemed to stop dead in the air. Then it shuddered. It was bathed in the flaring sparks of tracers. Then--

It dropped like a stone, tumbling aimlessly over and over as it dropped. It plummeted into the cloud bank. Suddenly the clouds were lighted from within. Something inside flared with a momentary, terrifying radiance. No lightning bolt ever flashed more luridly.

The transport plane and its escort flew on and on over the moonlit bank of clouds.

Presently orders came by radio. On the report of this attack, the flight plan would be changed, for safety. If the air convoy had been attacked once, it might be attacked again. So it would be wisest to get it immediately to where there would be plenty of protection. Therefore, the transport plane would head for Naples.

Nearly the whole of the United States Mediterranean fleet was in the Bay of Naples just then. It had been there
nearly a week, and by day its liberty parties swarmed ashore. The merchants and the souvenir salesmen were
entranced. American sailors had money and they spent it. The fleet's officers were social assets, its messes bought
satisfyingly of local viands, and everybody was happy.

All but one small group. The newspapers of one of the Italian political parties howled infuriatedly. They had
orders to howl, from behind the Iron Curtain. The American fleet, that one party's newspapers bellowed, was
imperialistic, capitalistic, and decadent. In short, there was virulent propaganda against the American fleet in Naples.
But most people were glad it was there anyway. Certainly nobody stayed awake worrying about it.

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People were staying awake worrying about the transport plane carrying Coburn and Janice, however. On the
plane, Janice was fearful and pressed close to Coburn, and he found it an absorbing experience and was moved to
talk in a low tone about other matters than extra-terrestrial Invaders and foam suits and interstellar travel. Janice
found those other subjects surprisingly fitted to make her forget about being afraid.

Elsewhere, the people who stayed awake did talk about just the subjects Coburn was avoiding. The convoy
carrying Coburn to tell what he knew had been attacked. By a plane which was definitely not made or manned by
human beings. The news flashed through the air across continents. It went under the ocean over sea beds. It traveled
in the tightest and most closely-guarded of diplomatic codes. The Greek government gave the other NATO nations a
confidential account of the Bulgarian raid and what had happened to it. These details were past question. The facts
brought out by Coburn were true, too.

So secret instructions followed the news. At first they went only to highly-trusted individuals. In thirty nations,
top-ranking officials and military officers blindfolded each other in turn and gravely stuck pins in each other. The
blindfolded person was expected to name the place where he had been stuck. This had an historical precedent. In
olden days, pins were stuck in suspected witches. They had patches of skin in which there was no sensation, and
discovery of such areas condemned them to death. Psychologists in later centuries found that patches of anaesthetic
skin were typical of certain forms of hysteria, and therefore did not execute their patients. But the Invaders, by the
fact that their seemingly human bodies were not flesh at all, could not pass such tests.

There were consequences. A Minister of Defense of a European nation amusedly watched the tests on his
subordinates, blandly excused himself for a moment before his own turn came, and did not come back. A general of
division vanished into thin air. Diplomatic code clerks painstakingly decoded the instructions for such tests, and
were nowhere about when they themselves were to be tested. An eminent Hollywood director and an Olympic
champion ceased to be.

In the free world nearly a hundred prominent individuals simply disappeared. Few were in position to influence
high-level decisions. Many were in line to know rather significant details of world affairs. There was alarm.

It was plain, too, that not all disguised Invaders would have had to vanish. Many would not even be called on
for test. They would stay where they were. And there were private persons....

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There was consternation. But Janice, in the plane, was saying softly to Coburn: "The--creature who telephoned
and said she was me. How did you know she wasn't?"

"I went to the Breen Foundation first," said Coburn. "I looked into your eyes--and they were right. So I didn't
need to stick a pin in you."

The thought of Coburn not needing to stick a pin in her impressed Janice as beautiful trust. She sighed
contentedly. "Of course you'd know," she said. "So would I--now!" She laughed a little.

The convoy flew on. The lurid round disk of the moon descended toward the west.

"It'll be sunrise soon. But I imagine we'll land before dawn."

They did. The flying group of planes flew lower. Coburn saw a single light on the ground. It was very tiny, and
it vanished rearward with great speed. Later there was another light, and a dull-red glow in the sky. Still later,
infinitesimal twinklings on the ground at the horizon. They increased in number but not in size, and the plane swung
hugely to the left, and the lights on the ground formed a visible pattern. And moonlight--broken by the shadows of
clouds--displayed the city and the Bay of Naples below.

The transport plane landed. The passengers descended. Coburn saw Hallen, the American colonel, the Greek
general, and a Greek colonel. The other had been left behind to take charge of things in Salonika. Here the uniforms
were American, and naval. There were some Italian police in view, but most of the men about were American
seamen, ostensibly on shore leave. But Coburn doubted very much if they were as completely unarmed as men on
shore leave usually are.

A man in a cap with much gold braid greeted the American colonel, the Greek general, and the Greek colonel.
He came to Coburn, to whose arm Janice seemed to cling.

"We're taking you out to the fleet. We've taken care of everything. Everybody's had pins stuck in him!"
It was very humorous, of course. They moved away from the plane. Surrounded by white-clad sailors, the party from the plane moved into the hangar.

Then a voice snapped a startled question, in English. An instant later it rasped: "Stop or I'll shoot!"

Then there was a bright flash of light. The interior of the hangar was made vivid by it. It went out. And as it disappeared there were the sounds of running footsteps. Only they did not run properly. They ran in great leaps. Impossible leaps. Monstrous leaps. A man might run like that on the moon, with a lesser gravity. A creature accustomed to much greater gravity might run like that on Earth. But it would not be human.

It got away.

There was a waiting car. They got into it. They pulled out from the airport with other cars close before and behind. The cavalcade raced for the city and the shoreline surrounded by a guard less noisy but no less effective than the Greek motorcycle troopers.

But the Greek general said something meditative in the dark interior of the car.

"What's that?" demanded someone authoritatively.

The Greek general said it again, mildly. This latest attempt to seize them or harm them--if it was that--had been surprisingly inept. It was strange that creatures able to travel between the stars and put regiments and tanks out of action should fail so dismally to kill or kidnap Coburn, if they really wanted to. Could it be that they were not quite sincere in their efforts?

"That," said the authoritative voice, "is an idea!"

They reached the waterfront. And here in the darkest part of the night and with the moon near to setting, the waters of the Bay of Naples rolled in small, smooth-surfaced, tranquil waves. There was a Navy barge waiting. Those who had come by plane boarded it. It cast off and headed out into the middle of the huge harbor.

In minutes there was a giant hull looming overhead. They stepped out onto a landing ladder and climbed interminably up the ship's metal side. Then there was an open door.

"Now," said the American colonel triumphantly, "now everything's all right! Nothing can happen now, short of an atomic bomb!"

The Greek general glanced at him out of the corner of his eyes. He said something in that heavy accent of his. He asked mildly if creatures--Invaders--who could travel between the stars were unlikely to be able to make atom bombs if they wanted to.

There was no answer. But somebody led Coburn into an office where this carrier's skipper was at his desk. He looked at Coburn with a sardonic, unfriendly eye.

"Mr. Coburn, I believe," he said remotely. "You've been very well staged-managed by your friends, Mr. Coburn. They've made it look as if they were trying hard to kill you, eh? But we know better, don't we? We know it's all a build-up for you to make a deal for them, eh? Well, Mr. Coburn, you'll find it's going to be a let-down instead! You're not officially under arrest, but I wouldn't advise you to try to start anything, Mr. Coburn! We're apt to be rather crude in dealing with emissaries of enemies of all the human race. And don't forget it!"

And this was Coburn's first inkling that he was regarded as a traitor of his planet who had sold out to the Invaders. All the plans made from his information would be based on the supposition that he intended to betray mankind by misleading it.

[Illustration]

It was not yet forty-eight hours since Coburn had been interrupted in the act of starting his car up in Ardea. Greek newspapers had splashed lurid headlines of a rumored invasion by Bulgarians, and their rumored defeat. The story was not widely copied. It sounded too unlikely. In a few hours it would be time for a new set of newspapers to begin to appear. Not one of them would print a single word about the most important disclosure in human history: that extra-terrestrial Invaders moved blandly about among human beings without being suspected.

The newspapers didn't know it. On inside pages and bottom corners, the London papers might refer briefly to the remarkable rumor that had swept over Greece about an invasion force said to have crossed its border. The London papers would say that the Greek government officially denied that such a happening had taken place. The New York papers would be full of a political scandal among municipal officials, the Washington papers would deal largely with a Congressional investigation committee hearing, Los Angeles would have a new and gory murder to exploit, San Francisco news would be of a waterfront strike, Tokyo would talk of cherry blossoms, Delhi of Pakistan, and the French press would discuss the political crisis. But no newspaper, anywhere, would talk about Invaders.

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In the United States, radar technicians had been routed out of bed and informed that night fighters had had a fight with an alien ship manned by non-humans and had destroyed it, but their radars detected nothing at all. An
hour after sunrise in Naples they had come up with a combination of radar frequencies which were built to detect everything. Instructions were going out in code to all radar establishments on how to set it up on existing equipment. Long before that time, business machines had begun intricate operations with punched cards containing all known facts about the people known to have dropped out of sight. Other machines began to integrate crackpot reports of things sighted in divers places. The stores of Hunter and Nereid rockets--especially the remote-control jobs--were broken out. Great Air Transport planes began to haul them to where they might be needed.

In England, certain establishments that had never been mentioned even in Parliament were put on war alert. There was frantic scurrying-about in France. In Sweden, a formerly ignored scientist was called to a twice-scrambled telephone connection and consulted at length about objects reported over Sweden's skies. The Canadian Air Force tumbled out in darkness and was briefed. In Chile there was agitation, and in Peru.

There was earnest effort to secure coöperation from behind the Iron Curtain, but that did not work. The Iron Curtain stood pat, demanding the most detailed of information and the privilege of inspecting all weapons intended for use against anybody so far unnamed, but refusing all information of its own. In fact, there was a very normal reaction everywhere, except that the newspapers didn't know anything to print.

These secret hassles were continuing as the dawnlight moved over Italy and made Naples and its harbor quite the most beautiful place in the world. When daylight rolled over France, matters were beginning to fall into pattern. As daybreak moved across the Atlantic, at least the measures to be taken began to be visualized and orders given for their accomplishment.

And then, with sunrise in America, real preparations got under way.

But hours earlier there was consultation on the carrier in the Bay of Naples. Coburn sat in a wardroom in a cold fury which was in part despair. He had been kept in complete ignorance of all measures taken, and he felt the raging indignation of a man accused of treason. He was being questioned again. He was treated with an icy courtesy that was worse than accusation. The carrier skipper mentioned with detachment that, of course, Coburn had never been in any danger. Obviously. The event in the airport at Salonika and the attack on the convoy were window-dressing. They were not attempts to withdraw him from circulation, but to draw attention to him. Which, of course, implied that the Invaders--whoever or whatever they might be--considered Coburn a useful tool for whatever purpose they intended.

This was before the conference officially began. It took time to arrange. There were radio technicians with microphones. The consultation--duly scrambled and re-scrambled--would be relayed to Washington while it was on. It was a top level conference. Hallen was included, but he did not seem happy.

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Then things were ready. The skipper of the carrier took over, with full awareness that the very highest brass in Washington was listening to every word.

"We can skip your technical information, Mr. Coburn," he said with ironic courtesy, "unless you've something new to offer."

Coburn shook his head. He seethed.

"For the record," said the skipper, "I repeat that it is obvious that your presence at the scene when those Bulgarians were knocked out, that you were attacked in Salonika, that the ship carrying you was also attacked, and that there was an incident on your landing here:--it's obvious that all these things were stage-managed to call attention to you, for the purposes of ... whoever staged them. Have you anything more to offer?"

"No," growled Coburn. "I've told all I know." He was furiously angry and felt completely helpless.

"Your information," purred the Skipper, "and the stage-managed incidents, make you look like a very patriotic citizen who is feared by the supposedly extra-terrestrial creatures. But we don't have to play any longer, Mr. Coburn. What were you told to tell your government? What do these ... extra-terrestrials want?"

"My guess," snapped Coburn, "is that they want Earth."

"The skipper raised his eyebrows. "Are you threatening us in their name?" he asked, purring.

"I'm telling you my guess," said Coburn hotly. "It's just as good as yours and no better! I have no instructions from them. I have no message from them. I've only my own opinion, which is that we humans had better get ready to fight. I believe we ought to join together--all of Earth--and get set to defend ourselves."

There was silence. Coburn found himself regarding the faces around him with an unexpected truculence. Janice pressed his hand warningly.

"All of Earth," said the skipper softly. "Hmmm. You advise an arrangement with all the Earth... What are your politics, Mr. Coburn?--No, let us say, what are the political views of the extra-terrestrial creatures you tell us about? We have to know."

Coburn seethed. "If you're suggesting that this is a cold war trick," he said furiously, "--if they were faking it, they wouldn't try tricks! They'd make war! They'd try conquest!"
Coburn saw the stout Greek general nodding to himself. But the Skipper said suavely: "You were with one of the creatures, you say, up in the village of Náousa. Would you say he seemed unfriendly to the Bulgarians?"

"He was playing the part of an Englishman," snapped Coburn, "trying to stop a raid, and murders, and possibly a war--all of them unnecessary!"

"You don't paint a frightening picture," complained the skipper ironically. "First you say we have to fight him and his kind, and then you imply that he was highly altruistic. What is the fact?"

"Damn it!" said Coburn. "I hated him because he wasn't human. It made my flesh crawl to see him act so much like a man when he wasn't. But he made me feel ashamed when I held a gun on him and he proved he wasn't human just so Janice--so Miss Ames wouldn't be afraid to drive down to Salonika with me!"

"So you have some ... friendly feelings toward him, eh?" the skipper said negligently. "How will you get in touch with his kind, by the way? If we should ask you to? Of course you've got it all arranged? Just in case."

Coburn knew that absolutely nothing could be done with a man who was trying to show off his shrewdness to his listening superiors. He said disgustedly: "That's the last straw. Go to hell!"

A loud-speaker spoke suddenly. Its tone was authoritative, and there were little cracklings of static in it from its passage across the Atlantic.

"That line of questioning can be dropped, Captain. Mr. Coburn, did these aliens have any other chances to kill you?"

"Plenty!" snapped Coburn. "And easy ones. One of them came into my office as my secretary. She could have killed me. The man who passed for Major Pangalos could have shot us all while we were unconscious. I don't know why they didn't get the transport plane, and I don't know what their scheme is. I'm telling the facts. They're contradictory. I can't help that. All I have are the facts."

The loud-speaker said crisply: "The attack on the transport plane--any pilots present who were in that fight?"

Someone at the back said: "Yes, sir. Here."

"How good was their ship? Could it have been a guided missile?"

"No, sir. No guided missile. Whoever drove that ship was right on board. And that ship was good. It could climb as fast as we could dive, and no human could have taken the accelerations and the turns it made. Whoever drove it learned fast, too. He was clumsy at the beginning, but he learned. If we hadn't gotten in a lucky hit, he'd've had us where he wanted us in a little while more. Our fifty-calibres just bounced off that hull!"

The loud-speaker said curtly: "If that impression is justified, that's the first business to be taken up. All but flying officers are excused. Mr. Coburn can go, too."

There was a stirring everywhere in the room. Officers got up and walked out. Coburn stood. The Greek general came over to him and patted him on the shoulder, beaming. Janice went out with him. They arrived on the carrier's deck. This was the very earliest hour of dawn, and the conference had turned abruptly to a discussion of arms and tactics as soon as Washington realized that its planes were inadequate for fighting. Which was logical enough, but Coburn was pretty sure it was useless.

"If anybody else in the world feels as futile as I do," said Coburn bitterly, "I feel sorry for him!"

Janice said softly: "You've got me."

But that was less than complete comfort. It is inborn in a man that he needs to feel superior. No man can feel pride before the woman of his choice while there is something stronger than himself. And Coburn especially wanted to feel that pride just now.

There were very probably discussions of the important part of what Coburn had reported, of course, during the rest of the morning. But there was much more discussion of purely military measures. And of course there were attempts to get military intelligence. Things were reported in the sky near South Africa, and from Honolulu--where nobody would ignore what a radar said again, especially the juiced-up equipment just modified on orders--and from other places. Not all the reports were authentic, of course. If there were any observations inside the Iron Curtain, the Iron Curtain countries kept them to themselves. Politics was much more important than anything else, in that part of the world.

But Coburn need not have felt as futile as he did. There was just one really spectacular occurrence in connection with the Invaders that day, and it happened where Coburn was. Almost certainly, it happened because Coburn was there. Though there is reason to believe that the newspaper campaign on shore, declaring that the American fleet risked the lives of all Naples by its mere presence, had something to do with it too.

It was very spectacular.

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It happened just after midday when the city and its harbor were at their most glamorous. Coburn and Janice were above when it began. There was an ensign assigned to escort Coburn about and keep an eye on him, and he took them on a carefully edited tour of the carrier. He took them to the radar room which was not secret any longer.
He explained reservedly that there was a new tricked-up arrangement of radar which it was believed would detect turtle-shaped metal ships if they appeared.

The radar room was manned, of course. It always was, with a cold war in being. Outside, on deck, the huge elevator that brought planes up from below rose at the most deliberate of peace-time rates.

The ensign said negligently, pointing to the radar-screen: "That little speck is a plane making for the landing field on shore. This other one is a plane coming down from Genoa. You'd need a good pair of binoculars to see it. It's a good thirty-five miles away."

Just then, one of the two radar-men on duty pushed a button and snapped into a microphone: "Sir! Radar-pip directly overhead! Does not show on normal radar. Elevation three hundred thousand feet, descending rapidly." His voice cut off suddenly.

A metallic voice said: "Relay!"

The ensign in charge of Coburn and Janice seemed to freeze. The radar-man pressed a button, which would relay that particular radar-screen's contents to the control room for the whole ship. There was a pause of seconds. Then bells began to ring everywhere. They were battle gongs.

There was a sensation of stirring all over the ship. Doors closed with soft hissings. Men ran furiously. The gongs rang.

The ensign said politely: "I'll take you below now."

He led them very swiftly to a flight of stairs. There was a monstrous bellowing on the carrier's deck. Something dark went hurtling down its length, with a tail of pale-blue flame behind it. It vanished. Men were still running. The elevator shot into full-speed ascent. A plane rolled off it. The elevator dropped.

An engine roared. Another. Yet another. A second dark and deadly thing flashed down the deck and was gone. There was a rumbling.

The battle gongs cut off. The rumbling below seemed to increase. There was a curious vibration. The ship moved. Coburn could feel that it moved. It was turning.

The ensign led them somewhere and said: "This is a good place. You'd better stay right here."

He ran. They heard him running. He was gone.

They were in a sort of ward room--not of the morning conference--and there were portholes through which they could look. The city which was Naples seemed to swing smoothly past the ship. They saw other ships. A cruiser was under way with its anchor still rising from the water. It dripped mud and a sailor was quite ridiculously playing a hose on it. It ascended and swayed and its shank went smoothly into the hawse-hole. There were guns swinging skyward. Some were still covered by canvas hoods. The hoods vanished before the cruiser swung out of the porthole's line of vision.

A destroyer leaped across the space they could see, full speed ahead. The water below them began to move more rapidly. It began to pass by with the speed of ground past an express train. And continually, monotonously, there were roarings which climaxed and died in the distance.

"The devil!" said Coburn. "I've got to see this. They can't kill us for looking."

He opened the door. Janice, holding fast to his arm, followed as he went down a passage. Another door. They were on the deck side of the island which is the superstructure of a carrier, and they were well out of the way, and everybody in sight was too busy to notice them.

The elevator worked like the piston of a pump. It vanished and reappeared and a plane came off. Men in vividly-colored suits swarmed about it, and the elevator was descending again. The plane roared, shot down the deck, and was gone to form one of the string of climbing objects which grew smaller with incredible swiftness as they shot for the sky. Coburn saw another carrier. There was a huge bow-wave before it. Destroyers ringed it, seeming to bounce in the choppy sea made by so many great ships moving so close together.

The other carrier, too, was shooting planes into the air like bullets from a gun. The American Mediterranean fleet was putting out to sea at emergency-speed, getting every flying craft aloft that could be gotten away. A cruiser swung a peculiar crane-like arm, there was a puff of smoke and a plane came into being. The crane retracted. Another plane. A third.

The fleet was out of the harbor, speeding at thirty knots, with destroyers weaving back and forth at higher speeds still. There were barges left behind in the harbor with sailors in them,--shore-parties or details who swore bitterly when they were left behind. They surged up and down on the mêlée of waves the fleet left behind in its hasty departure.

On the fleet itself there was a brisk tenseness as it sped away from the land. Vesuvius still loomed high, but the city dwindled to a mere blinking mass of white specks which were its buildings. The sea was aglitter with sunlight
reflected from the waves. There was the smell of salt air.

Men began to take cryptic measures for the future. They strung cables across the deck from side to side. Arresting gear for planes which would presently land.

Their special ensign found Coburn and Janice. "I'm supposed to stay with you," he explained politely. "I thought I could be of use. I'm really attached to another ship, but I was on board because of the hassle last night."

Coburn said: "This would be invader stuff, wouldn't it?"

The ensign shrugged. "Apparently. You heard what the radar said. Something at three hundred thousand feet, descending rapidly. It's not a human-built ship. Anyway, we've sent up all our planes. Jets will meet it first, at fifty thousand. If it gets through them there are ... other measures, of course."

"This one beats me!" said Coburn. "Why?"

The ensign shrugged again. "They tried for you last night."

"I'm not that important, to them or anybody else. Or am I?"

"I wouldn't know," said the ensign.

"I don't know anything I haven't told," said Coburn grimly, "and the creatures can't suppress any information by killing me now. Anyhow, if they'd wanted to they'd have done it."

A dull, faint sound came from high overhead. Coburn stepped out from under the shelter of the upper works of the island. He stared up into the sky. He saw a lurid spot of blue-white flame. He saw others. He realized that all the sky was interlaced with contrails—vapor-trails of jet-planes far up out of sight. But they were fine threads. The jets were up very high indeed. The pin-points of flame were explosions.

"Using wing-rockets," said the ensign hungrily, "since fifty-calibres did no good last night, until one made a lucky hit. Rockets with proximity fuses. Our jets don't carry cannon."

There were more explosions. There was a bright glint of reflected sunshine. It was momentary, but Coburn knew that it was from a flat, bright space-ship, which had tilted in some monstrously abrupt maneuver, and the almost vertical sunshine shone down from its surface.

The ensign said in a very quiet voice: "The fight's coming lower."

There was a crashing thump in the air. A battleship was firing eight-inch guns almost straight up. Other guns began.

Guns began to fire on the carrier, too, below the deck and beyond it. Concussion waves beat at Coburn's body. He thrust Janice behind him to shield her, but there could be no shielding.

The air was filled with barkings and snarlings and the unbelievably abrupt roar of heavy guns. The carrier swerved, so swiftly that it tilted and swerved again. The other ships of the fleet broke their straight-away formation and began to move in bewildering patterns. The blue sea was criss-crossed with wakes. Once a destroyer seemed to slide almost under the bow of the carrier. The destroyer appeared unharmed on the other side, its guns all pointed skyward and emitting seemingly continuous blasts of flame and thunder.

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The ensign grabbed Coburn's shoulder and pointed, his hands shaking.

There was the Invader ship. It was exactly as Coburn had known it would be. It was tiny. It seemed hardly larger than some of the planes that swooped at it. But the planes were drawing back now. The shining metal thing was no more than two thousand feet up and it was moving in erratic, unpredictable darts and dashes here and there, like a dragon-fly's movements, but a hundred times more swift. Proximity-fused shells burst everywhere about it. It burst through a still-expanding puff of explosive smoke, darted down a hundred feet, and took a zig-zag course of such violent and angular changes of position that it looked more like a streak of metal lightning than anything else.

It was down to a thousand feet. It shot toward the fleet at a speed which was literally that of a projectile. It angled off to one side and back, and suddenly dropped again and plunged crazily through the maze of ships from one end to the other, no more than fifty feet above the water and with geyser of up-flung sea all about it from the shells that missed.

Then it sped away with a velocity which simply was not conceivable. It was the speed of a cannonball. It was headed straight toward a distant, stubby, draggled tramp-steamer which plodded toward the Bay of Naples.

It rose a little as it flew. And then it checked, in mid-air. It hung above the dumpy freighter, and there were salvoes of all the guns in the fleet. But at the flashes it shot skyward. When the shells arrived and burst, it was gone. It could still be sighted as a spark of sunlight shooting for the heavens. Jets roared toward it. It vanished.

Coburn heard the ensign saying in a flat voice: "If that wasn't accelerating at fifteen Gs, I never saw a ship. If it wasn't accelerating at fifteen Gs..."

And that was all. There was nothing else to shoot at. There was nothing else to do. Jets ranged widely, looking for something that would offer battle, but the radars said that the metal ship had gone up to three hundred miles and then headed west and out of radar range. There had not been time for the French to set up paired radar-beam outfits
anyhow, so they couldn't spot it, and in any case its course seemed to be toward northern Spain, where there was no radar worth mentioning.

Presently somebody noticed the dingy, stubby, draggled tramp steamer over which the Invaders' craft had hovered. It was no longer on course. It had turned sidewise and wallowed heavily. Its bow pointed successively to every point of the compass.

It looked bad. Salvoes of the heaviest projectiles in the Fleet had been fired to explode a thousand feet above it. Perhaps--

A destroyer went racing to see. As it drew near--Coburn learned this later--it saw a man's body hanging in a sagging heap over the railing of its bridge. There was nobody visible at the wheel. There were four men lying on its deck, motionless.

The skipper of the destroyer went cold. He brought his ship closer. It was not big, this tramp. Maybe two thousand tons. It was low in the water. It swayed and surged and wallowed and rolled.

Men from the destroyer managed to board it. It was completely unharmed. They found one small sign of the explosions overhead. One fragment of an exploded shell had fallen on board, doing no damage.

Even the crew was unharmed. But every man was asleep. Each one slumbered heavily. Each breathed stertorously. They could not be awakened. They would need oxygen to bring them to.

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A party from the destroyer went on board to bring the ship into harbor. The officer in charge tried to find out the ship's name.

There was not a document to be found to show what the ship's name was or where it had come from or what it carried as cargo. That was strange. The officer looked in the pockets of the two men in the wheel house. There was not a single identifying object on either of them. He grew disturbed. He made a really thorough search. Every sleeping man was absolutely anonymous. Then--still on the way to harbor--a really fine-tooth-comb examination of the ship began.

Somebody's radium-dial watch began to glow brightly. The searchers looked at each other and went pale. They hunted frantically, fear making them clumsy.

They found it. Rather--they found them.

The stubby tramp had an adequate if rather clumsy atomic bomb in each of its two holds. The lading of the ship was of materials which--according to theory--should be detonated in atomic explosion if an atomic bomb went off nearby. Otherwise they could not be detonated.

The anonymous tramp-steamer had been headed for the harbor of Naples, whose newspapers--at least those of a certain political party--had been screaming of the danger of an atomic explosion while American warships were anchored there.

It was not likely that two atom bombs and a shipload of valuable secondary atomic explosive had been put on a carefully nameless ship just to be taken for a ride. If this ship had anchored among the American fleet and if it had exploded in the Bay of Naples ...

The prophecies of a certain political party would seem to have been fulfilled. The American ships would be destroyed. Naples itself would be destroyed. And it would have appeared that Europeans who loved the great United States had made a mistake.

It was, odd, though, that this ship was the only one that the Invaders' flying craft had struck with its peculiar weapon.

VI

We humans are rational beings, but we are not often reasonable. Those who more or less handle us in masses have to take account of that fact. It could not be admitted that the fleet had had a fight with a ship piloted by Invaders from another solar system. It would produce a wild panic, beside which even a war would be relatively harmless. So the admiral of the Mediterranean fleet composed an order commending his men warmly for their performance in an unrehearsed firing-drill. Their target had been--so the order said--a new type of guided missile recently developed by hush-hush agencies of the Defense Department. The admiral was pleased and proud, and happy....

It was an excellent order, but it wasn't true. The admiral wasn't happy. Not after battle photographs were developed and he could see how the alien ship had dodged rockets with perfect ease, and had actually taken a five-inch shell, which exploded on impact, without a particle of damage.

On the carrier, the Greek general said mildly to Coburn that the Invaders had used their power very strangely. After stopping an invasion of Greece, they had prevented an atomic-bomb explosion which would have killed some hundreds of thousands of people. And it was strange that the turtle-shaped ship that had attacked the air transport was so clumsily handled as compared with this similar craft which had zestfully dodged all the missiles a fleet could
throw at it.

Coburn thought hard. "I think I see," he said slowly. "You mean, they're here and they know all they need to know. But instead of coming out into the open, they're making governments recognize their existence. They're letting the rulers of Earth know they can't be resisted. But we did knock off one of their ships last night!"

The Greek general pointedly said nothing. Coburn caught his meaning. The fleet, firing point-blank, had not destroyed its target. The ship last night had seemed to fall into a cloud bank and explode. But nobody had seen it blow up. Maybe it hadn't.

"Humoring us!" realized Coburn. "They don't want to destroy our civilization, so they'll humor us. But they want our governments to know that they can do as they please. If our governments know we can't resist, they think we'll surrender. But they're wrong."

The Greek general looked at him enigmatically.

"We've still got one trick left," said Coburn. "Atomic bombs. And if they fail, we can still get killed fighting them another way."

There was a heavy, droning noise far away. It increased and drew nearer. It was a multi-engined plane which came from the west and settled down, and hovered over the water and touched and instantly created a spreading wake of foam.

The fleet was back at anchor then. It was enclosed in the most beautiful combination of city and scene that exists anywhere. Beyond the city the blunted cone of Vesuvius rose. In the city, newspaper vendors shrilly hawked denunciations of the American ships because of the danger that their atom bombs might explode. Well outside the harbor, a Navy crew of experts worked to make quite impossible the detonation of atomic bombs in a stubby tramp-steamer which had--plausibly, at least--been sent to make those same newspapers' prophecies of disaster come true.

* * * * *

A long, long time passed, while consultations took place to which Coburn was not invited. Then a messenger led him to the wardroom of the previous conference. He recognized the men who had landed by seaplane a while since. One was a cabinet member from Washington. There was someone of at least equal importance from London, picked up en route. There were generals and admirals. The service officers looked at Coburn with something like accusation in their eyes. He was the means by which they had come to realize their impotence. The Greek general sat quietly in the rear.

"Mr. Coburn," said the Secretary from Washington. "We've been canvassing the situation. It seems that we simply are not prepared to offer effective resistance--not yet--to the ... invaders you tell us about. We know of no reason why this entire fleet could not have been disabled as effectively as the tramp-steamer offshore. You know about that ship?"

Coburn nodded. The Greek general had told him. The Secretary went on painfully: "Now, the phenomena we have to ascribe to Invaders fall into two categories. One is the category of their action against the Bulgarian raiding force, and today the prevention of the cold-war murder of some hundreds of thousands of people. That category suggests that they are prepared--on terms--to be amiable. A point in their favor."

Coburn set his lips.

"I don't know what it could be," said Coburn coldly. "I blundered into one affair. I figured out a way to detect them. I happened to be the means by which they were proved to exist. That's all. It was an accident."

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The Secretary looked skeptical. "Your discoveries were remarkably ... apt. And it does seem clear that they made the appearance of hunting you, while going to some pains not to catch you. Mr. Coburn, how can we make contact with them?"

Coburn wanted to swear furiously. He was still being considered a traitor. Only they were trying to make use of his treason.

"I have no idea," he said grimly.

"What do they want?"

"I would say--Earth," he said grimly.

"You deny that you are an authorized intermediary for them?"

"Absolutely," said Coburn. There was silence. The Greek general spoke mildly from the back of the room. He said in his difficult English that Coburn's personal motives did not matter. But if the Invaders had picked him out as especially important, it was possible that they felt him especially qualified to talk to them. The question was, would he try to make contact with them?"

The Secretary looked pained, but he turned to Coburn. "Mr. Coburn?"
Coburn said, "I've no idea how to set about it, but I'll try on one condition. There's one thing we haven't tried against them. Set up an atom-bomb booby-trap, and I'll sit on it. If they try to contact me, you can either listen in or try to blow them up, and me with them!"

There was buzzing comment. Perhaps--Coburn's nails bit into his palms when this was suggested--perhaps this was a proposal to let the Invaders examine an atomic bomb, American-style. It was said in earnest simplicity. But somebody pointed out that a race which could travel between the stars and had ships such as the Mediterranean fleet had tried to shoot down, would probably find American atomic bombs rather primitive. Still--

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The Greek general again spoke mildly. If the Invaders were to be made to realize that Coburn was trying to contact them, he should return to Greece. He should visibly take up residence where he could be approached. He should, in fact, put himself completely at the mercy of the Invaders.

"Ostensibly," agreed the Secretary.

The Greek general then said diffidently that he had a small villa some twenty miles from the suburbs of Salonika. The prevailing winds were such that if an atomic explosion occurred there, it would not endanger anybody. He offered it.

"I'll live there," asked Coburn coldly, "and wait for them to come to me? I'll have microphones all about so that every word that's said will be relayed to your recorders? And there'll be a bomb somewhere about that you can set off by remote control? Is that the idea?"

Then Janice spoke up. And Coburn flared into anger against her. But she was firm. Coburn saw the Greek general smiling slyly.

They left the conference while the decision was made. And they were in private, and Janice talked to him. There are methods of argument against which a man is hopeless. She used them. She said that she, not Coburn, might be the person the Invaders might have wanted to take out of circulation, because she might have noticed something important she hadn't realized yet. When Coburn pointed out that he'd be living over an atomic bomb, triggered to be set off from a hundred miles away, she demanded fiercely to know if he realized how she'd feel if she weren't there too....

Next day an aircraft carrier put out of Naples with an escort of destroyers. It traveled at full speed down the toe of Italy's boot, through the Straits of Messina, across the Adriatic, and rounded the end of Greece and went streaking night and day for Salonika. Special technicians sent by plane beat her time by days. The Greek general was there well ahead. And he expansively supervised while his inherited, isolated villa was prepared for the reception of Invaders--and Coburn and Janice.

And Coburn and Janice were married. It was an impressive wedding, because it was desirable for the Invaders to know about it. It was brilliantly military with uniforms and glittering decorations and innumerable important people whom neither of them knew or cared about.

If it had been anybody else's wedding Coburn would have found it unspeakably dreary. The only person present whom he knew beside Janice was Hallen. He acted as groomsman, with the air of someone walking on eggs. After it was over he shook hands with a manner of tremendous relief.

"Maybe I'll brag about this some day," he told Coburn uneasily. "But right now I'm scared to death. What do you two really expect to happen?"

Janice smiled at him. "Why," she said, "we expect to live happily ever after."

"Oh yes," said Hallen uncomfortably. "But that wasn't just what I had in mind."

VII

The world wagged on. The newspapers knew nothing about super-secret top-level worries. There was not a single news story printed anywhere suggesting an invasion of Earth from outer space. There were a few more Flying Saucer yarns than normal, and it was beginning to transpire that an unusual number of important people were sick, or on vacation, or otherwise out of contact with the world. But, actually, not one of the events in which Coburn and Janice had been concerned reached the state of being news. Even the shooting off the Bay of Naples was explained as an emergency drill.

Quietly, a good many things happened. Cryptic orders passed around, and oxygen tanks were accumulated in military posts. Hunter and Nereid guided missiles were set up as standard equipment in a number of brand-new places. They were loaded for bear. But days went by, and nothing happened. Nothing at all. But officialdom was not at ease.

If anything--while the wide world went happily about its business--really high-level officialdom grew more unhappy day by day. Coburn and Janice flew back to Salonika. They went in a Navy plane with a fighter plane escort. They landed at the Salonika airport, and the Greek general was among those who greeted them.

He took them out to the villa he'd placed at the disposal of high authority for their use. He displayed it proudly.
There was absolutely no sign that it had been touched by anybody since its original builders had finished with it two-hundred-odd years before. The American officer who had wired it, though—he looked as if he were short a week's sleep—showed them how anywhere on the grounds or in the house they would need only to speak a code-word and they'd instantly be answered.

There were servants, and the Greek general took Coburn aside and assured him that there was one room which absolutely was not wired for sound. He named it.

So they took up a relatively normal way of life. Sometimes they decided that it would be pleasant to drive in to Salonika. They mentioned it, and went out and got in the car that went with the villa. Oddly, there was always some aircraft lazying about overhead by the time they were out of the gate. They always returned before sunset. And sometimes they swam in the water before the villa's door. Then, also, they were careful to be back on solid ground before sunset. That was so their guards out on the water wouldn't have to worry.

But it was a nagging and an unhappy business to know that they were watched and overheard everywhere save in that one unwired room. It could have made for tension between them. But there was another thought to hold them together. This was the knowledge that they were literally living on top of a bomb. If an Invader's flying ship descended at the villa, everything that happened would be heard and seen by microphones and concealed television cameras. If the Invaders were too arrogant, or if they were arbitrary, there would be a test to see if their ship could exist in the heart of an atom-bomb explosion.

*C * * * *

Coburn and Janice, then, were happy after a fashion. But nobody could call their situation restful.

They had very few visitors. The Greek general came out meticulously every day. Hallen came out once, but he knew about the atomic bomb. He didn't stay long. When they'd been in residence a week, the General telephoned zestfully that he was going to bring out some company. His English was so mangled and obscure that Coburn wondered cynically if whoever listened to their tapped telephone could understand him. But, said the General in high good humor, he was playing a good joke. He had hunted up Helena, who was Coburn's secretary, and he had also invited Dillon to pay a visit to some charming people he knew. It would be a great joke to see Dillon's face.

There was a fire in the living room that night. The Greek servants had made it, and Coburn thought grimly that they were braver men and women than he'd have been. They didn't have to risk their lives. They could have refused this particular secret-service assignment. But they hadn't.

A voice spoke from the living-room ceiling, a clipped American voice. "Mr. Coburn, a car is coming."

That was standard. When the General arrived; when the occasional delivery of telephoned-for supplies came; on the one occasion when a peddler on foot had entered the ground. It lacked something of being the perfect atmosphere for a honeymoon, but it was the way things were.

Presently there were headlights outside. The Greek butler went to greet the guests. Coburn and Janice heard voices. The General was in uproarious good humor. He came in babbling completely incomprehensible English.

There was Helena. She smiled warmly at Coburn. She went at once to Janice. "How do you do?" she said in her prettily accented English. "I have missed not working for your husband, but this is my fiancé!"

And Janice shook hands with a slick-haired young Greek who looked pleasant enough, but did not seem to her as remarkable as Coburn.

Then Dillon stared at Coburn.

"The devil!" he said, with every evidence of indignation. "This is the chap--"

The General roared, and Coburn said awkwardly: "I owe you an apology, and the privilege of a poke in the nose besides. But it was a situation--I was in a state--"

Then the General howled with laughter. Helena laughed. Her fiancé laughed. And Dillon grinned amusedly at Coburn.

*C * * * *

"My dear fellow!" said Dillon. "We are the guests this whole villa was set up to receive! The last time I saw you was in Náousa, and the last time Helena saw you you stuck pins in her, and--"

Coburn stiffened. He went slowly pale.

"I--see! You're the foam-suit people, eh?" Then he looked with hot passion at the General. "You!" he said grimly. "You I didn't suspect. You've made fools of all of us, I think."

The General said something obscure which could have been a proverb. It was to the effect that nobody could tell a fat man was cross-eyed when he laughed.

"Yes," said Dillon beaming. "He is fat. So his eyes don't look like they're different. You have to see past his cheeks and eyebrows. That's how he passed muster. And he slept very soundly after the airport affair."

Coburn felt a sort of sick horror. The General had passed as a man, and he'd loaned this villa, and he knew all about the installation of the atomic bomb.... Then Coburn looked through a doorway and there was his Greek butler
standing in readiness with a submachine-gun in his hands.

"I take it this is an official call," said Coburn steadily. "In that case you know we're overheard--or did the General cancel that?"

"Oh, yes!" said Dillon. "We know all about the trap we've walked into. But we'd decided that the time had come to appear in the open anyhow. You people are very much like us, incidentally. Apparently there's only one real way that a truly rational brain can work. And we and you Earth people both have it. May we sit down?"

Janice said: "By all means!"

Helena sat, with an absolutely human gesture of spreading her skirt beside her. The General plumped into a chair and chuckled. The slick-haired young man politely offered Janice a cigarette and lighted Helena's for her. Dillon leaned against the mantel above the fire.

"Well?" said Coburn sharply. "You can state your terms. What do you want and what do you propose to do to get it?"

Dillon shook his head. He took a deep breath. "I want you to listen, Coburn. I know about the atom bomb planted somewhere around, and I know I'm talking for my life. You know we aren't natives of Earth. You've guessed that we come from a long way off. We do. Now--we found out the trick of space travel some time ago. You're quite welcome to it. We found it, and we started exploring. We've been in space, you might say, just about two of your centuries. You're the only other civilized race we've found. That's point one."

Coburn fumbled in his pocket. He found a cigarette. Dillon held a match. Coburn started, and then accepted it.

"Go on." He added, "There's a television camera relaying this, by the way. Did you know?"

"Yes, I know," said Dillon. "Now, having about two centuries the start of you, we have a few tricks you haven't found out yet. For one thing, we understand ourselves, and you, better than you do. We've some technical gadgets you haven't happened on yet. However, it's entirely possible for you to easily kill the four of us here tonight. If you do--you do. But there are others of our race here. That's point two."

"Now come the threats and demands," said Coburn.

"Perhaps." But Dillon seemed to hesitate. "Dammit, Coburn, you're a reasonable man. Try to think like us a moment. What would you do if you'd started to explore space and came upon a civilized race, as we have?"

Coburn said formidably, "We'd study them and try to make friends."

"In that order," said Dillon instantly. "That's what we've tried to do. We disguised ourselves as you because we wanted to learn how to make friends before we tried. But what did we find, Coburn? What's your guess?"

"You name it!" said Coburn.

"You Earth people," said Dillon, "are at a turning-point in your history. Either you solve your problems and keep on climbing, or you'll blast your civilization down to somewhere near a caveman level and have to start all over again. You know what I mean. Our two more spectacular interferences dealt with it."


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"But it is ours," said Dillon urgently. "Don't you see, Coburn? You've a civilization nearly as advanced as ours. If we can make friends, we can do each other an infinite lot of good. We can complement each other. We can have a most valuable trade, not only in goods, but in what you call human values and we call something else. We'd like to start that trade.

"But you're desperately close to smashing things. So we've had to rush things. We did stop that Bulgarian raid. When you proved too sharp to be fooled, we grew hopeful. Here might be our entering wedge. We hammered at you. We managed to make your people suspicious that there might be something in what you said. We proved it. It was rugged for you, but we had to let you people force us into the open. If we'd marched out shyly with roses in our hair--what would you have thought?"

Coburn said doggedly: "I'm still waiting for the terms. What do you want?"

The General said something plaintive from his chair. It was to the effect that Coburn still believed that Earth was in danger of conquest from space.

"Look!" said Dillon irritably. "If you people had found the trick of space travel first, and you'd found us, would you have tried to conquer us? Considering that we're civilized?"

Coburn said coldly, "No. Not my particular people. We know you can't conquer a civilized race. You can exterminate them, or you can break them down to savagery, but you can't conquer them. You can't conquer us!"

Then Dillon said very painstakingly: "But we don't want to conquer you. Even your friends inside the Iron Curtain know that the only way to conquer a country is to smash it down to savagery. They've done that over and over for conquest. But what the devil good would savages be to us? We want someone to trade with. We can't trade with savages. We want someone to gain something from. What have savages to offer us? A planet? Good Heavens,
man! We've already found sixty planets for colonies, much better for us than Earth. Your gravity here is ... well, it's
sickeningly low."

"What do you want then?"

"We want to be friends," said Dillon. "We'll gain by it exactly what you Earth people gained when you traded
freely among yourselves, before blocked currencies and quotas and such nonsense strangled trade. We'll gain what
you gained when you stopped having every city a fort and every village guarded by the castle of its lord. Look,
Coburn: we've got people inside the Iron Curtain. We'll keep them there. You won't be able to disband your armies,
but we can promise you won't have to use them--because we certainly won't help you chaps fight among yourselves.
We'll give you one of our ships to study and work on. But we won't give you our arms. You'll have your moon in a
year and your whole solar system in a decade. You'll trade with us from the time you choose, and you'll be roaming
space when you can grasp the trick of it. Man, you can't refuse. You're too near to certain smashing of your
civilization, and we can help you to avoid it. Think what we're offering."

Then Coburn said grimly: "And if we don't like the bargain? What if we refuse?"

Dillon carefully put the ash from his cigarette into an ashtray. "If you won't be our friends," he said with some
distaste, "we can't gain anything useful from you. We don't want you as slaves. You'd be no good to us. For that
reason we can't get anything we want from the Iron Curtain people. They've nothing to offer that we can use. So our
ultimatum is--make friends or we go away and leave you alone. Take it or leave it!"

There was a dead, absolute silence. After a long time Coburn said: "Altruism?"

Dillon grinned. "Enlightened self-interest. Common sense!"

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There was a clicking in the ceiling. A metallic voice said: "Mr. Coburn, the conversation just overheard and
recorded has to be discussed in detail on high diplomatic levels. It will take time for conferences--decisions--
arrangements. Assuming that your guests are acting in good faith, they have safe conduct from the villa. Their offer
is very attractive, but it will have to be passed on at high policy-making levels."

Dillon said pleasantly, to the ceiling: "Yes. And you've got to keep it from being public, of course, until your
space ships can discover us somewhere. It will have to be handled diplomatically, so your people are back of a grand
offer to make friends when it happens." He added wryly, "We're very much alike, really. Coburn's very much like
us. That's why--if it's all right with you--you can arrange for him to be our point of confidential contact. We'll keep
in touch with him."

The ceiling did not reply. Dillon waited, then shrugged. The Greek general spoke. He said that since they had
come so far out from Salonika, it was too early to leave again. It might be a good idea to have a party. Some music
would be an excellent thing. He said he liked Earth music very much.

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A long time later Janice and Coburn were alone in the one room of the house which was not wired for sound.
There were no microphones here.

Coburn said reluctantly in the darkness: "It sounds sensible all right. Maybe it's true. But it feels queer to think
of it...."

Janice pressed closer to him and whispered in his ear: "I made friends with that girl who passed for Helena. I
like her. She says we'll be invited to make a trip to their planet. They can do something about the gravity. And she
says she's really going to be married to the ... person who was with her...." She hesitated. "She showed me what they
really look like when they're not disguised as us."

Coburn put his arm around her and smiled gently. "Well? Want to tell me?"

Janice caught her breath. "I--I could have cried.... The poor thing--to look like that. I'm glad I look like I do. For
you, darling. For you."
The milling crowd in front of the Capitol suddenly grew quiet. A tall portly figure came out onto the porch of the building and stepped before a microphone erected on the steps. A battery of press cameras clicked. A newsreel photographer ground away on his machine. Wild cheers rent the air. The President held up his hand for silence. As the cheering died away he spoke into the microphone.

"My countrymen," he said, "the Congress of the United States has met in extraordinary session and is ready to cope with the condition with which we are confronted. While they deliberate as to the steps to be taken, it is essential that you meet this danger, if it be a danger, with the bravery and the calm front which has always characterized the people of the United States in times of trial and danger. You may rest assured--"

A slightly built, inconspicuous man who had followed the President out onto the porch was surveying the crowd intently. He turned and spoke in an undertone to a second man who mysteriously appeared from nowhere as the first man spoke. He listened for a moment, nodded, and edged closer to the President. The first man slipped unobtrusively down the Capitol steps and mingled with the crowd.

"--that no steps will be neglected which may prove of value," went on the President. "The greatest scientists of the country have gathered in this city in conference and they undoubtedly will soon find a simple and natural explanation for what is happening. In the meantime--"

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The President paused. From the crowd in front of him came a sudden disturbance. A man sprang free of the crowd and broke through the restraining cordon of police. In his hand gleamed an ugly blue steel automatic pistol. Quickly he leveled it and fired. A puff of dust came from the Capitol. The bullet had landed a few inches from one of the lower windows, fifty feet from where the President stood. He raised his weapon for a second shot but it was never fired. The man who had come down the Capitol steps sprang forward like a cat and grasped the weapon. For a moment the two men struggled, but only for a moment. From the crowd, stunned for a moment by the sheer audacity of the attack, came a roar of rage. The police closed in about the struggling men but the crowd rolled over them like a wave. The captor shouted his identity and tried to display the gold badge of the secret service but the mob was in no state of mind to listen. The police were trampled underfoot and the would-be assassin torn from the hands of the secret service operative. Every man in reach tried to strike a blow. The secret service man was buffeted and thrown aside. Realizing that the affair had been taken out of his hands, he made his way to the rear of the Capitol where his badge gained him ready passage through the cordon of police. He entered the building and reappeared in a few moments by the side of the President.

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Two hours later he leaned forward in his chair in Dr. Bird's private laboratory in the Bureau of Standards and spoke earnestly.

"Dr. Bird," he said, "that bullet was never meant for the President. That man was after bigger game."

The famous scientist nodded thoughtfully.

"Even a very rotten pistol shot should have come closer to him," he replied. "He must have missed by a good forty feet."

"He missed by a matter of inches. Doctor, that bullet struck the Capitol only two inches from a window. In that window was standing a man. The bullet was intended for the occupant of that window. I was directly behind him when he raised his weapon for a second shot and I am sure of his aim. He deliberately ignored the President and aimed again at that window. That was when I tackled him."

"Who was standing there, Carnes?"

"You were, Doctor."

Dr. Bird whistled.

"Then you think that bullet was intended for me?"

"I am sure of it, Doctor. That fact proves one thing to me. You are right in your idea that this whole affair is man-made and not an accident of nature. The guiding intelligence back of it fears you more than he fears anyone else and he took this means to get rid of you unobtrusively. Attention was focused on the President. Your death would have been laid to accident. It was a clever thought."

"It does look that way, Carnes," said the doctor slowly. "If you are right, this incident confirms my opinion. There is only one man in the world clever enough to have disturbed the orderly course of the seasons, and such a
plan for my assassination would appeal to his love of the dramatic."
"You mean--"
"Ivan Saranoff, of course."
"We are pretty sure that he hasn't got back to the United States, Doctor."
"You may be right but I am sure of nothing where that man is concerned. However, that fact has no bearing. He
may be operating from anywhere. His organization is still in the United States."

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A knock sounded at the door. In response to the doctor's command a messenger entered and presented a letter. Dr. Bird read it and dropped it in a waste basket.
"Tell them that I am otherwise engaged just now," he said curtly. The messenger withdrew. "It was just a
summons to another meeting of the council of scientists," he said to Carnes. "They'll have to get along without me.
All they'll do anyway will be to read a lot of dispatches and wrangle about data and the relative accuracy of their
observations. Herriott will lecture for hours on celestial mechanics and propound some fool theory about a hidden
body, which doesn't exist, and its possible influence, which would be nil, on the inclination of the earth's axis. After
wasting four hours without a single constructive idea being put forward, they will gravely conclude that the sun rose
fifty-three seconds earlier at the fortieth north parallel than it did yesterday and correspondingly later at the fortieth
south parallel. I know that without wasting time."
"Was it fifty-three seconds to-day, Doctor?"
"Yes. This is the twentieth of July. The sun should have risen at 4:52, sixteen minutes later than it rose on June
twentieth and fifty-three seconds later than it rose yesterday. Instead it rose at 4:20, sixteen minutes earlier than it
did on June twentieth and fifty-three seconds earlier than yesterday."
"I don't understand what is causing it, Doctor. I have tried to follow your published explanations, but they are a
little too deep for me."

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"As to the real underlying cause, I am in grave doubts, Carnes, although I can make a pretty shrewd guess. As
to the reason for the unnatural lengthening of the day, the explanation is simplicity itself. As you doubtless know,
the earth revolves daily on its axis. At the same time, it is moving in a great ellipse about the sun, an ellipse which it
takes it a year to cover. If the axis of rotation of the earth were at right angles to the plane of its orbit; in other words,
if the earth's equator lay in the plane of the earth's movement about the sun, each day would be of the same length
and there would be no seasons. Instead of this being the case, the axis of rotation of the earth is tipped so that the
angle between the equator and the elliptic is 23-1/2°."
"I seem to remember something of the sort from my school days."
"This angle of tilt may be assumed to be constant, for I won't bother with the precessions, nutations and other
minor movements considered in accurate computations. As the earth moves around the sun, this tilt gives rise to
what we call the sun's declination. You can readily see that at one time in the year, the north pole will be at its
nearest point to the sun, speaking in terms of tilt and not in miles, while at another point on the elliptic, it will be
farthest from the sun and the south pole nearest. There are two midway points when the two poles are practically
equidistant."

"Then the days and nights should be of equal length."
"They are. These are the periods of the equinoxes. The point at which the sun is nearest to the south pole we
call the winter solstice, and the opposite point, the summer solstice. The summer solstice is on June twenty-first. At
that time the declination of the sun is 23-1/2° north of the equatorial line. It starts to decrease until, six months later,
it reaches a minus declination of 23-1/2° and is that far south of the line. The longest day in the northern hemisphere
is naturally June twenty-first."
"And the shortest day when the sun has the greatest minus declination."

* * * * *

"Precisely, at the winter solstice. Now to explain what is happening. The year went normally until June twenty-
first. That day was of the correct length, about fourteen hours and fifty minutes long. The twenty-second should
have been shorter. Instead, it was longer than the twenty-first. Each day, instead of getting shorter as it should at this
time of year, is getting longer. We have already gained some thirty-two minutes of sunlight at this latitude. The
explanation is that the angle between the equator and the elliptic is no longer 23-1/2° as it has been from time
immemorial, but it is greater. If the continuing tilt keeps up long enough, the obliquity will be 90°. When that
happens, there will be perpetual midday at the north pole and perpetual night at the south pole. The whole northern
hemisphere will be bathed in a continuous flood of sunlight while the southern hemisphere will be a region of cold
and dark. The condition of the earth will resemble that of Mercury where the same face of the planet is continually
facing the sun."
"I understand that all right, but I am still in the dark as to what is causing this increase of tilt."

"No more than I am, old dear. Herriott keeps babbling about a hidden body which is drawing the earth from its normal axial rotation, but the fool ignores the fact that a body of a size sufficient to disturb the earth would throw every motion of the solar system into a state of chaos. Nothing of the sort has happened. Ergo, no external force is causing it. I am positive that the force which is doing the work is located on the earth itself. Furthermore, unless my calculations are badly off, this force is located on or very near the surface of the earth at approximately the sixty-fifth degree of north latitude."

"How can you tell that, Doctor?"

"It would take me too long to explain, Carnes. I will, however, qualify my statement a little. Either a variable force is being used or else a constant force located where I have said. The sixty-fifth parallel is a long line. The exact location and the nature of that force, we have to find. If it be man-made, and I'll bet my bottom dollar that it is, we will also have to destroy it. If we fail, we'll see this world plunged into such a riot of war and bloodshed as has never before been known. It will be literally a fight of mankind for a place in the sun. Due to its favorable location in the new position of the earth, it is more than probable that Russia would emerge as the dominant power."

"Undertaking to destroy a thing that you don't know the location of and of whose existence you aren't even sure is a pretty big contract."

"We've tackled bigger ones, old dear. We have the President behind us. I haven't made much headway selling my idea to that gang of old fossils who call themselves the council of scientists, but I did to his nibs. Just before that attempt at assassination, I had a chin-chin with him. The fastest battle cruiser in the Navy, the Denver, is to be placed at my service. It will carry a big amphibian plane, so be equipped to assemble and launch it. Bolton will relieve you from the Presidential guard to-day. We sail in the morning."

"Where for, Doctor?"

"I feel sure that the force is caused and controlled by men and I know of but one man who has the genius and the will to do such a thing. That man is Saranoff. Because he must be concealed and work free from interruption, I fancy he is working in his own country. Does that answer your question?"

"It does. We sail for Russia."

"Carnesy, old dear, at times you have flashes of such scintillating brilliance that I have hopes for the future of the secret service. In time they may even show human intelligence. Toddle along now and pay your fond farewells to the bright lights of Washington. Meet me at the Pennsy station at six. We'll sail from New York in the morning."

With the famous scientist and his assistant as passengers, the Denver steamed at her best speed across the Atlantic. As soon as New York harbor was cleared, Dr. Bird charted the course. Captain Evans raised his eyebrows when he saw the course laid out, but his orders had been positive. Had Dr. Bird ordered him to steam at full speed against the shore, he would have obeyed without question.

The Denver avoided the usual lanes of traffic and bore to the north of the summer lane. Not a vessel was sighted in the eight days which elapsed before the Faroe Islands came in sight on the starboard bow. The Denver bore still more to the north and skirted around North Cape five days later. At Cape Kanin she headed south into the White Sea. Surprisingly little ice was encountered. When Captain Evans mentioned this, Dr. Bird pointed out to him that it was August and that the days were still lengthening. Once in the White Sea, the Denver was made ready for instant action. A huge amphibian plane was hoisted in sections from the hold and mechanics started to assemble it. Dr. Bird spent most of his time working on some instruments he had assembled in the radio room.

"This is an ultra-short wave detector," he explained to Carnes. "It will receive vibrations to the lowest limit of waves that we have ever been able to measure. The X-ray is high on the scale and even the cosmic ray is far above its lower limit of detection. We are hunting for an electro-magnet, the largest and strangest electro-magnet that has ever been constructed. Perhaps it would be more accurate to say that we are seeking for a generator of magnetic force. It does not generate the ordinary magnetism which attracts iron and steel, nor the special type of magnetism which we call gravity, but something between the two. It attracts the sun enough to disturb the tilt of the earth's axis, but not enough to pull the earth out of its orbit. Such a device should give out a wave that can be detected, if we get a receiver delicate enough and operating on the right wave length."

He spent hours improving and refining the apparatus, but in the end he confessed himself beaten.

"It's no use, Carnes," he said the day after Cape Kanin faded from view to the north. "Either the apparatus we are seeking gives out no wave that we can detect or my apparatus is faulty. Luckily we have other things to guide us."

"What are they, Doctor?"
"The facts that Saranoff must have easy transportation and a source of power. The first precludes him from locating his station far from the sea-coast and the second indicates that it will be near a river or other source of power. The only Russian points on the sixty-fifth parallel that are open to water transport are the Gulf of Anadyr, north of Kamchatka, and the vicinity of Archangel. I passed up Kamchatka because it would mean too long a haul through unfriendly waters from Leningrad and because there is not much water power. Archangel is easy of access at this time of the year and it has the Dwina river for power. That will be our first line of search."

"We will explore by plane, of course?"

"Certainly. We wouldn't get far on foot, especially as neither of us speaks Russian. We'll head south for another day and then-- What's that?"

* * * * *

He paused and listened. From the distance came a dull drone of sound which brought him to his feet with a start. He raced out onto deck with Carnes at his heels. Far overhead in the blue, a tiny speck of black hovered.

"We're on the right trail, Carnes," he said grimly. The plane passed over them. In huge circles it sank toward the ground. Dr. Bird turned to Captain Evans. Orders flew from the bridge and a detail of marines rapidly stripped the covers from the two forward anti-aircraft rifles.

"I dislike to fire on that craft before it makes a hostile demonstration, Dr. Bird," demurred Captain Evans. "We are at peace with Russia. My action in firing might precipitate a war, or in any event, serious diplomatic misunderstandings."

"Allow me to correct you, Captain Evans, we are at war with Russia. The whole world is at war with the man who has pulled the earth out of her course. In any event, your orders are positive and the responsibility is mine. Wait until that plane gets within easy range and then shoot it down. Do not fail to get it; it must not get back to shore with word of our approach."

Captain Evans bowed gravely. Shells came up from the magazines and were piled by the guns. From the fire control stations came a monotonous calling of firing data. The guns slowly changed direction as the plane descended. Nearer and nearer it came, intent on positive identification of the war vessel below it. It passed over the Denver less than five thousand feet up. As it passed it swung off to one side and began to climb sharply. Dr. Bird glanced at the fighting top of the cruiser and swore softly. From the top the stars and stripes had been broken to the breeze.

"Fire at once!" he cried, "and then court-martial the fool who broke out that flag!"

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The two three-inch rifles barked their message of death into the sky. For agonizing seconds nothing happened. The staccato calls of the observers came from the control station and the guns roared again and again. Now above and now below the Russian plane appeared the white puffs that told of bursting shells, but the plane droned on, unharmed.

"It's away safely," groaned the doctor. "Now the fat is in the fire. Saranoff will know in an hour that we are coming. If we had a pursuit plane ready to take off, we might catch him, but we haven't. Oh, well, there's no use in crying over spilt milk. How soon will that amphibian be ready to take off?"

"In twenty minutes. Doctor," replied the Engineering Officer. "As soon as we finish filling the tanks and test the motor, she'll be ready to ramble."

"Hurry all you can. Hang a half dozen hundred-pound bombs and a few twenty-fives on the racks. Lower her over the side as soon as she's ready. Where's Lieutenant McCready?"

"Below, getting into his flying togs, Doctor."

"Good enough. Come on, Carnes, we'll go below and put on our fur-lined panties, too. We'll probably need them."

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In half an hour the amphibian rose from the water. Lieutenant McCready was at the controls, with Carnes and the doctor at the bomb racks. The plane rose in huge spirals until the altimeter read four thousand feet. The pilot straightened it out toward the south. The plane was alone in the sky. For two hours it flew south and then veered to the east, following the line of the Gulf of Archangel. The town came in sight at last.

"Better drop down a couple of thousand, Lieutenant," said Dr. Bird into the speaking tube. "We can't see much from this altitude."

The plane swung around in a wide circle, gradually losing altitude. Carnes and the doctor hung over the side watching the ground below them. As they watched a puff of smoke came from a low building a mile from the edge of the town. Dr. Bird grabbed the speaking tube.

"Bank, McCready!" he barked, "They're firing at us."
The plane lurched sharply to one side. From a point a few yards below them and almost directly along their former line of flight, a burst of flame appeared in the air. The plane lurched and reeled as the blast of the explosion reached it. From other points on the ground came other puffs.

"Get out of here," shouted Dr. Bird. "There must be a dozen guns firing at us. One of them will have the range directly."

From all around them came flashes and the roar of explosions. The plane lurched and yawed in a sickening fashion. Lieutenant McCready fought heroically with the controls, trying to prevent the sideslips which were costing him altitude. Gradually the plane came under control and started to climb. The shells burst nearer as the plane took a straighter course and strove to fly out of the danger zone. Dr. Bird looked at the air-speed meter.

"A hundred and eighty," he shouted to Carnes. "We'll be safely out of range in a minute."

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The bursts were mostly behind them now. Suddenly a blast of air struck them with terrific force. Half a dozen holes appeared in the fabric of the wings. A bit of high explosive shell plowed a way through the after compartment and wrecked the duplicate instrument board. In another moment they were out of range. Lieutenant McCready turned the nose of his plane toward the north.

"We came out of that well," cried Carnes. Dr. Bird dropped the speaking tube which he had held pressed to his ear and smiled grimly at the detective.

"I wish we had," he replied. "Our main gas tank is punctured."

An expression of alarm crossed the detective's face.

"Is it injured badly?" he asked.

"I don't know yet. McCready says that the gauge is dropping pretty rapidly. I'm going to go out and see what I can do."

"Can't I go, Doctor? I'm a good deal lighter than you are."

"You're not as strong or as agile, Carnes, and you haven't the mechanical ability to make the repair. Hand me that line."

He fastened one end of a coil of Manila rope which Carnes handed him to his waist, while the detective fastened the other end to one of the safety belt hooks. With a word of farewell, he climbed out of the cockpit and onto a wing. In the pocket of his flying suit he carried a tool kit and repair material. Carnes shuddered as the doctor's figure disappeared under the plane. He snubbed the rope about a seat bracket and held it taut. For ten minutes the strain continued. It slackened at last, and the figure of the doctor reappeared on the wing. Slowly he climbed into the cockpit.

"I've made a temporary repair, Lieutenant," he called into the speaking tube, "and the leakage has stopped. How much gas have we left?"

"Enough for about an hour of flying, including the emergency tank."

"Thunder! No chance to get back to the Denver. Better head inland and follow the course of the Dwina. If we can locate the place we are looking for we may be able to drop a few eggs on it before we are washed out. In any event, it will be better to come down on land than on water."

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McCready headed the plane south and followed the winding ribbon below him which marked the channel of the Dwina. He kept his altitude well over eight thousand feet. For a few minutes the plane roared along. Without warning the motor sputtered once or twice and died.

"Gas finished?" asked Dr. Bird into the speaking tube.

"No, there is plenty of gas for another forty-five minutes. It acted like a short in the wiring. Maybe another fragment got us that we didn't know about. I can glide to a safe landing, Doctor. Which direction shall I go?"

"It doesn't matter," replied Dr. Bird as he looked over the side. "Wait a minute, it does matter. See that long low building down there with the projection like a tower on top? I'll bet a month's pay that that is the very place we're looking for. Glide over it and let's have a look at it. If I am convinced of it, I'll drop a few eggs on it."

"Right!"

McCready glided on a long slope toward the suspected building. Dr. Bird kept his eye glued to the bomb sight.

"It's suspicious enough for me to act," he cried. "Drop one!"

Carnes pulled a lever and a hundred-pound high explosive bomb detached itself from the plane and fell toward the ground.

"Another!" cried the doctor.

A second messenger of death followed the first.

"Bank around and back over while we give them the rest."

"Right!"
The plane swung around in a wide circle.
"Volley!" cried the doctor. Carnes pulled the master lever and the rest of the bombs fell earthward.
"Now glide to the east, McCready, until you are forced down."

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McCready banked the plane and started on a long glide toward the east. Carnes and the doctor watched the falling bombs. The doctor's aim had been perfect. The first bomb released struck the building squarely while the other landed only a few feet away. Instead of the puffs of smoke which they had expected, the bombs had no effect. The volley which Carnes had discharged fell full on the building as harmlessly as had the two pilot shots.

"Were these bombs armed, Lieutenant?" demanded the doctor.
"Yes, sir. I inspected them myself before we took off and they were fused and armed. They had always fused and should have gone off, no matter in what position they landed."

"Well, they didn't. That building is our goal all right. Saranoff would naturally expect an air raid and he has perfected some device which renders a bomb impotent before it lands. How far from the building will you land?"

"A couple of miles, Doctor."
"Get as far as you can. If you can make that line of thicket ahead, we'll take to our heels and hope to hide in it."
"I don't think we'll have much luck, Doctor," said Carnes.
"Why not?"
"Look behind."

Dr. Bird looked back toward the building they had tried to bomb. Across the country, a truck loaded with armed men followed the course of the plane. The plane was gaining slightly on the truck but it was evident that the plane's occupants would have little chance of escaping on foot. Dr. Bird gave a grim laugh.

"We're cornered all right," he said. "If we did elude the men in that truck, we would have a plane after us in no time. You might as well turn back, McCready, and land fairly near the building. We are sure to be captured and our best chance is to have the plane near us. They'll probably patch it up and if we get a chance to escape later, it may be a lifesaver. At any rate, we've lost for the present."

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McCready turned the plane again to the west. The truck halted at their new maneuver. As the plane passed over, it turned and again followed them. The ground was approaching rapidly. With a final dip, McCready leveled off and made a landing. The machine rolled to a stop about a mile from the building. The truck was less than three hundred yards away. It came up rapidly and disgorged a dozen men armed with rifles who hurried forward. In the lead was a tall, slight figure who carried no gun. Dr. Bird stepped forward to meet them.

"Do you understand English?" he asked.

An incomprehensible jargon of Russian answered him. The men raised their rifles threateningly. Dr. Bird turned back to his companions.

"Resistance is hopeless," he said. "Surrender gracefully and we'll see what comes of it."

He faced the Russians and held one hand high above his head. The Russian leader stepped forward and confiscated the doctor's pistol. He repeated the process with Carnes and McCready, frisking them thoroughly for concealed weapons. At his command, six of the Russians stepped forward. The Americans took their place in the midst of the guard and were marched to the truck. The balance of the Russians moved over to the American's plane. The truck rolled forward and approached the low building. The projection which Dr. Bird had noticed from the air proved to be a metal tube projection from the roof, fully twenty feet in diameter and fifty feet long.

"A projection tube of some sort," said the doctor, pointing. An excited command came from the Russian in command. A rifle was leveled threateningly at the doctor. He took the hint and maintained silence while they climbed down from the truck and approached the door of the building.

It swung open as they approached. As they entered a strong garlic-like smell was evident. The hum of heavy machinery smote their ears.

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They were led down a corridor to a flight of steps. On the floor below they went along another corridor to a heavy iron-studded door. The guide unlocked it with a huge key and swung it open. With a shrug of his shoulders, Dr. Bird led the way into the cell. The door closed behind them and they were left alone. Dr. Bird turned to his companions.

"Be careful what you say," he whispered. "I am not at all convinced that there is no one here who knows English and we are probably spied upon. There is almost sure to be a dictaphone somewhere in this room. We don't want to give them any more information than we have to."

Carnes and McCready nodded. Dr. Bird spoke aloud of inconsequential matters while they explored the cell. It was a room some twenty feet square, fitted with three bunks on one side, built into the wall like the berths on
The room was lighted by a single electric light overhead. A door opened into a lavatory equipped with running water.

"We're comfortable here, at any rate," said the doctor cheerfully. "They evidently don't mean to make us suffer. I'd like to know why they took the trouble to capture us, anyway. It would seem to be more in line with their usual policy to have shot us on sight. It must be that they want some sort of information from us."

Neither of his companions had a better reason to offer and conversation languished. For an hour they sat almost without speech. A sound at the door brought them to their feet. It opened and a Russian girl pushed in a cart laden with food. She made no reply to the remarks which Dr. Bird addressed to her but quickly and silently put their food on the table. When she had completed her task, she left the room without having spoken a word.

"Beautiful, but dumb," Dr. Bird remarked. "Let's eat."

"Do you suppose that it's safe to eat this food, Doctor?" asked Carnes in a whisper.

"I don't know, and I don't care. If we've got to go out, we might as well be poisoned as shot. If we refuse food, they can poison us through our water. We couldn't refuse that for any length of time. I'm hungry and I'm going to make a good meal. What's this stuff, bortsch?"

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They soon received proof that they were under observation. Hardly had they pushed back their chairs at the completion of the meal than the door opened and the Russian girl who had brought their food removed the empty dishes. Silence settled down over the cell. For another hour they waited before the door opened again. A tall bearded Russian entered with a younger man at his heels. The bearded man dropped into a chair while his companion sat at the table and opened a notebook.

"Stand up!" barked the Russian sternly.
Carnes and McCready rose to their feet but Dr. Bird remained stretched out on a bed.
"What for?" he demanded languidly.

The Russian bristled with rage.
"When I speak to you, you shall obey," he said in curiously clipped English, "else it will be the worse for you. Would you rather be questioned while in the strelska than while standing?"

"Not by a long shot," replied Dr. Bird promptly as he rose to his feet. "Fire away, old fellow. I'll talk."

"What are your names?"

"I am Addison Sims of Seattle," replied Dr. Bird gravely, "and my friends are Mr. Earle Liedermann and Mr. Bernarr Macfadden. You may have read of us in the American magazines."

"Their names," said the Russian to his clerk, "are Dr. Bird, of the Bureau of Standards; Operative Carnes, of the United States Secret Service; and Lieutenant McCready, of the United States Navy. Dr. Bird, you will save yourself trouble if you will answer my future questions truthfully."

"Then ask questions to which I am not sure that you know the answer," replied the doctor dryly.

"What vessel brought you here?"

"The Denver."

"What is her armament?"

"Consult the Navy list. You will doubtless find a copy in your files. It may be purchased from the Superintendent of Public Documents at Washington."

* * * * *

"What is your errand here?"

"To consult with Ivan Saranoff and learn his future plans. If he means merely to bestow on the northern hemisphere additional sunshine and warmth, it is possible that the United States will not oppose him. We would benefit equally with Russia, you know. Possibly the northern countries could form some sort of an alliance against the southern hemisphere which is already threatening war."

"You chose a peculiar way of showing your peaceable intentions. You shot down our plane without warning and you dropped bombs on us at first sight."

"But they didn't explode."

"No, thanks to our ray operators. Dr. Bird, I have no time to waste. Either you will answer my questions fully and truthfully or I will resort to torture."

"You don't dare. You were merely bluffing when you mentioned the strelska. If you tortured us, you would have to answer to Ivan Saranoff on his return."

"How did you know that he is--?" The Russian paused and bit his lip. "Shall I tell him that you refuse to talk?"

"When he returns, you may tell him that I will be glad to talk frankly with him. I came to Russia for that purpose, but I will not talk with one of his underlings. In the meanwhile, we are having lovely weather for this time of year, aren't we?"
With a muttered curse the Russian rose and left the room. Carnes turned to Dr. Bird.

"How did you know that Saranoff was away?" he demanded.

"I didn't," replied Dr. Bird with a chuckle, "it was merely a shrewd guess. We have twisted his tail so often that I figured he could not resist the temptation to come here and gloat a few gloats over us if he were here. I know his ruthless methods in dealing with his subordinates and I knew that they would never dare to resort to torture in his absence. No, old dear, we are safe until he returns. I hope he stays away a long time."

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Four days passed monotonously. Three times a day the Russian girl appeared with ample meals. Despite their attempts to engage her in conversation, not a word would she reply or give any indication that she either heard or understood their remarks. The bearded Russian appeared daily and tried to question them, but Dr. Bird laughed at his threats and reaffirmed his intention of talking to no one but Saranoff.

"Your chance will soon come," replied the Russian with an evil leer on the fourth day. "He will be here the day after to-morrow. He will be able to make you talk."

"If he's telling the truth, the jig's about up," said Dr. Bird when the Russian had left. "I don't fancy that Saranoff will show us much mercy when he finds out what we've attempted to do."

"How would it be to overpower our waitress and make a break?" asked McCready in a guarded whisper.

"No good at all," replied the doctor decisively. "We wouldn't have a Chinaman's chance. Our best bet is to talk turkey to Saranoff. He may spare us if I can make him believe that I am willing to work for him. What a man he is! If we could turn his genius into the right channels, he would be a blessing to the world."

* * * * *

He paused as the door swung open and the Russian girl appeared with their food. She placed the cart against the wall and suddenly turned and faced them.

"Dr. Bird," she said in excellent English, "I am Feodrovna Androvitch."

"I'm glad to know you," said Dr. Bird with a bow.

"Do you recognize my name?"

"I'm very sorry, my dear, but it simply doesn't register."

"Do you remember Stefan Androvitch?"

A sudden light came into Dr. Bird's face.

"Yes," he exclaimed, "I do. He used to work for me in the Bureau some time ago. I had to let him go under peculiar circumstances. Is he related to you?"

"He was my twin brother. The peculiar circumstances you refer to were that you caught him stealing platinum. Instead of turning him over to the police, you asked him why he stole. He told you his wife was dying for lack of things that money would buy and he stole for her. You allowed him to quit his position honorably and you gave him money for his immediate needs. For that act of mercy, I am here to reward you."

"Bread cast upon the waters," murmured Carnes. The Russian girl turned on him like a wildcat.

"Unless you wish to deprive yourself and your companions of my help, you will not quote the Bible, that sop thrown by the church to their slaves, to me," she said venomously. "I am a woman of the proletariat!"

"Respect the lady's anti-religious prejudices, Carnesy, old dear," said the doctor with a smile. "How do you propose to aid us, Miss Androvitch?"

"I will give you exactly what you gave my brother, your freedom and money for your immediate needs."

"Thanks. But, er--haven't you considered what your position here will be if you aid us to escape? Saranoff doesn't deal kindly with traitors, I fancy."

The girl spat on the floor.

"That swine!" she hissed, "I would like to kill him. I would have done so long ago had not the hope of the people rested on his genius. When the people finally triumph, I will feed his heart to my cat."

"Nice, gentle, loving disposition," murmured the doctor. "All right, my dear, we're ready for anything. What's the first move?"

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The girl whisked the covers from the food cart and displayed three pistols and belts of ammunition.

"Put these on," she said, "and take this food with you. I will take you to a hiding place outside the walls where you may safely stay for a few days. I will bring you fresh supplies of food. As quickly as possible I will arrange for you to escape from Russia. When you have left Russia safely, my debt is paid and you are again my enemies."

"But, listen here," said Dr. Bird persuasively, "why don't you come with us? You know the object of our coming here. We aim to destroy this plant and let the earth take its normal tilt. You hate Saranoff, although I don't know why. If you'll help us to destroy him, we'll guarantee you a welcome in the United States and you can join your brother. I'll take him back into my laboratory."
"My brother is dead," she said bitterly. "After he left you, he fell into more evil times. His wife died and he swore revenge upon the society which had murdered her. An opportunity came to him to join Saranoff, and he did so. Saranoff hated him and distrusted him, although he was the soul of loyalty. As a reward for his genius and aid to Saranoff in constructing the black lamp, Saranoff abandoned him to you. It was your men who killed him when you blew into nothingness the helicopter he was piloting in your state of Maryland, near Washington."

"All the more reason why you should revenge yourself upon Saranoff," replied the doctor. "We will give you a chance to do so and aid you. We also give you an opportunity to be received in a free country with honor."

An expression of rage distorted the girl's features.

"I am a woman of the proletariat!" she cried. "I hate Ivan Saranoff for what he has done but I am loyal to him. He alone will force the bourgeoisie to their knees and establish the rule of the people. I hate your country and your government; yes, and I hate you. I aid you because I must pay my just debts. Come, the way is clear for your escape. Don't ask how I cleared it."

"Come on," said Dr. Bird with a shrug of his shoulders. "There is no arguing with convictions. She must act according to her lights, even as we must act according to ours. Grab your guns and let's go."

* * * * *

The three buckled on the weapons and belts of ammunition and followed the girl from the cell. Once outside she touched her lips for silence. A door barred their way but she opened it with a key which she withdrew from her dress. Outside the door, a guard slumbered noisily. At a motion from the girl, Carnes rolled him over on his face to quiet his snoring. He moved and stirred, but did not wake.

A few feet from the door the girl paused and faced the wall. She manipulated a hidden lever and a panel swung open in the wall. She led the way silently into the dark. As the panel closed behind her, a beam of light from an electric torch stabbed the darkness. Down a sloping tunnel they followed her for half a mile. The tunnel turned at right angles and led upward. At length they paused before another door. The girl opened it and they stepped out into the night. As they did so, a dull booming struck their ears. The girl paused.

"The ship!" she cried. "Your ship! It is attacking Fort Novadwinskija. The factory will be awake in a moment! Run for your lives!"

Even as she spoke a pair of twinkling lights appeared far down the tunnel through which they had come. She turned as if to return down the tunnel. Dr. Bird caught her about the waist and clapped his hand over her mouth.

"Quick, Carnes, your belt," he cried. "Tie her up. She meant to go down that tunnel and give her life to delay them while we escaped. We'll save her in spite of herself."

Carnes and McCready quickly bound the struggling girl with their belts. They laid her on the ground beside the door and watched the oncoming lights.

"You two hold them back for the present," said the doctor. "I'm going to take Feodrovna away a bit and argue gently with her. If I can make her see the light, we may accomplish our mission yet. If I can't, I'll come back and help you."

* * * * *

He picked up the girl in his arms and disappeared into the darkness. Pistol in hand, the two men watched the oncoming lights. The men behind the lights could not be seen, but from the sound of their footsteps it was evident that there were quite a few of them.

"Had we better let them emerge from the door and then get them?" whispered Carnes.

"No. These heavy guns will drive a bullet through three men at short range. Level your gun down the tunnel and fire when I give the word. Remember, every one is apt to shoot high in the dark."

The lights approached slowly. When they were twenty-five yards away, Lieutenant McCready spoke. The quiet was shattered by the roar of two Luger pistols. Again and again the guns barked. A volley of fire came from the tunnel, but Carnes and the lieutenant were standing well away from the opening and they escaped unharmed. Their deadly fire poured into the shambles until they were rewarded by the sound of retreating feet.

"So ends round one," said Carnes with a laugh. "I think we win on points."

"They won't try a direct attack again," replied the lieutenant. "Look out for a flank attack or from some new weapon. I don't like the way those bombs failed to explode the other day."

Dr. Bird appeared from the darkness.

"McCready," he said in a voice vibrant with excitement, "we're in luck. We have come out less than a hundred yards from the point where our plane came down. It is still there. If the Denver has approached within shooting range, we will have enough gas to make it. Try to get your motor going."

"If it isn't completely washed out I'll have it going in a few minutes, Doctor," cried the pilot. "I'm going down the tunnel and get those flash-lights those birds dropped when they pulled out. Where's the girl?"

"She's back by the plane," said the doctor with a chuckle. "She is a spit-fire, all right. I took her gag off and she
tried to bite me. I couldn't get a word of anything but abuse out of her. Go ahead and get the lights and I'll show you the plane."

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In a few minutes they stood before the ship. It was apparently uninjured, but the spark was dead. Carnes went back to the tunnel mouth to guard against surprise while Dr. Bird and McCready labored over the motor. Despite the best of both of them, no spark could be coaxed from the coil. As a last resort, Dr. Bird short-circuited the cells with a screwdriver blade. No answering spark came from the terminals.

"Dead as a mackerel," he remarked. "I guess that ends that hope. Let's get the machine guns out of her. Well have another attack soon and they'll be more effective than our pistols."

It was the work of a few minutes to dismount the two Brownings from the plane. Carrying the two guns, Dr. Bird joined Carnes while McCready staggered along laden down with belts of ammunition.

"Do you remember that rocky knoll we passed just before we landed?" asked the lieutenant. "If we can get this stuff there before we are attacked, we'll have a much better chance than we will in the open."

"Good idea, Lieutenant. Carnes, connect yourself to one of these guns. I'll fasten the other on my back and carry Feodrovna. We can't leave her here to Saranoff's tender mercies."

Through the night the little cavalcade made its way. The thunder of guns from Fort Novadwinskaja kept up and the sky to the north was lighted by their flashes. McCready's bump of direction proved to be a good one for the sought-for retreat was soon located. As they deposited their burdens and looked back, the lights of two trucks could be seen approaching across the plain from the factory. Hurriedly they mounted the machine gun. Dr. Bird straightened up and listened carefully.

"The guns are sounding less frequently," he said. "Possibly the Denver has had enough and is pulling out."

"If I know Captain Evans as well as I think I do, the Denver is not retreating," replied McCready grimly.

"I hope she's hammering the fort out of existence," said the doctor. "However, our main interest just now is on the land front. Gunners to the fore. Carnes, you aren't so good at this, better let McCready and me handle them."

The trucks approached slowly. Presently the American plane loomed up in the glare of their headlights. A powerful searchlight mounted on the leading truck swept the country. Discovery was a matter of moments. Lieutenant McCready trained his gun carefully and pressed the trigger. A rattle of fire came from the Browning. A crash was heard from the truck and the searchlight winked out.

"Bull's-eye!" cried Carnes exultantly.

"Down, you fool!" cried the doctor as he swept the detective from his feet and threw him down behind a rock. His action was none too soon. A burst of machine gun fire came from the trucks and a hail of bullets splattered on the rocks a few yards from them. McCready crawled back to his gun.

"Wait a minute, Lieutenant," counseled the doctor. "A burst of fire from here will give them our location and probably do them little damage. Wait until they try to rush us."

They did not have long to wait. A guttural shout came from a point a few yards away and the sound of running feet came to their ears. The rush was directed toward a point a few yards to the left of where they crouched. Dr. Bird swung his gun around. As the rush passed them, he released his trigger. A volley of screams and oaths from the plain answered the crackle of the Browning. McCready's gun joined in with a staccato burst of fire. The attack could not live before that rain of death. A few running feet were heard from the darkness and a few groans. Presently the roar of a motor came from the direction of the parked trucks. It retreated into the distance and all was quiet.

"Round two goes to us on a knock-down," said Carnes jubilantly. "What will they do next, Doctor?"

"Probably nothing until daylight, now that they know we have machine guns. I wish that we could make that thicket, but it's too far to try. It'll be daylight in an hour or so."

The night was normally short in Archangel at that season of the year and the unnatural lengthening of the day which Saranoff had accomplished made it shorter still. In an hour red streamers in the east announced the approach of daylight. Hardly had they appeared than a dull drone of truck motors came from the direction of the factory.

"Round three is about to commence," announced Carnes. "I wish that I could do something."

"You can as soon as our ammunition runs out, which won't be long," replied McCready. "It will be a matter of pistols at close quarters."

The trucks approached to within a half mile and stopped. The distance was too great to warrant wasting any of their scanty store of ammunition at such long range. In the dim light they would see the Russians working at the trucks. Presently a flash came from the plain. A whining sound filled the air. With a crash a three-inch shell broke behind them.

"No fun," remarked the doctor. "We'll have to get better cover than this."
A second shell whined through the air and burst over their heads. A third burst a few yards in front of them.
"They have us bracketed now," said McCready. "We'd better slide back a piece before they start rapid fire."

Dragging their prisoner with them, the three men made their way to the reverse side of the knoll. A short search revealed an overhanging ledge under which they crouched in comparative safety from anything but a direct hit above them.

"We're all right here except for the fact that they may rush us under cover of the fire," said the doctor. "One man will have to keep watch all the time and it will be a dangerous detail. I'll take the first hitch."

"You will not!" exclaimed Carnes emphatically. "I have done nothing so far and I am the least important member of the party. I'll do the watching."

"Let's draw straws," suggested McCready. "I'm willing to do that, but if it's a matter of volunteering, I refuse to yield to the civilian branches of the government. The Navy has traditions to uphold, you know."

"McCready's right," replied the doctor. "Get straws, Lieutenant, and we'll draw."

McCready picked up three bits of grass and held them out.

"The shortest goes on watch," he said. Carnes and the doctor drew, McCready exhibited the remaining bit of grass. It was the shortest of the three. He waited until the next shell burst above them and then stepped out from the shelter.

"I'll relieve you in fifteen minutes," said Carnes as he left.

"Right."

* * * * *

When the lieutenant had left, Dr. Bird removed the gag from Feodrovna's mouth and tried to argue with her, but the Russian girl only glared her hatred and refused to talk other than to abuse him. With a sigh, the doctor gave over his efforts and talked to Carnes. The time passed slowly with a constant rain of shells on the knoll.

"It's time for my relief," said Carnes at length. As he spoke the hail of shells on the knoll ceased.

"What the dickens?" cried the doctor.

He and Carnes jumped from their shelter and ran over the knoll. On the plain a few hundred yards from them, a straggling line of Russians were advancing with fixed bayonets. McCready was nowhere in sight.

"Where the devil is McCready?" cried the doctor. "He must have been killed. Hello, one of the guns is gone, too. There's only a belt and a half of ammunition left. I'll try to break that attack up."

He advanced to the gun and trained it carefully. When he pressed the trigger a dull click came from the gun.

"Misfire!" he cried. He drew back the bolt and inserted a fresh cartridge. Again the gun clicked harmlessly. Dr. Bird ejected the shell and examined it. A deep indentation appeared on the primer. Hurriedly he tried a half dozen more cartridges but they refused to explode. He turned a keen gaze toward the trucks. On the ground was set a tube-like projector pointing toward them. Dr. Bird swore softly and jerked his pistol from its holster. The hammer clicked futilely on a cartridge.

"Stymied!" he exclaimed. "They have that portable ray mechanism, with them, which disabled our bombs. It's hand to hand, Carnes, old dear. I wonder where McCready is."

* * * * *

The Russians approached slowly, keeping their lines straight. They were within two hundred yards of the knoll. Suddenly from a point a hundred yards to the left of the end of the land came a rattle of fire. The attacking line dropped in a pile of grotesque heaps.

"It's McCready!" shouted Carnes. A little ravine ran from the knoll toward the trucks. Sitting in the ravine was the lieutenant, playing a Browning machine gun on the line of attackers. When there were no more of them on their feet, he turned his gun on the trucks. Panic seized the Russians and they made a rush for their truck. Their leader leaped among them, yelling furiously. They paused and turned to the projector tube. Slowly they swung it around.

As the Russians rushed the now silent gun, Dr. Bird stepped to the gun on the knoll. He trained it and pressed the trigger. A rattle of fire came from it and two of the rushing figures fell. The attack paused for an instant. McCready had risen to his feet and was running up the ravine with his gun under his arm.

"Good head!" cried Dr. Bird, "Clever work! Watch the fun now."

He ceased firing his gun. The Russians wavered and then rushed the point from which McCready had fired. The lieutenant allowed them to get to within a short distance and then crumpled the attack with another burst of fire from the flank. With cries of alarm, the Russians turned and fled toward their trucks. McCready ran along the ravine until he was within fifty yards of the standing machines. As the Russians approached, one of them stepped to the truck crank. McCready's pistol spoke and he dropped. A second shared his fate. With cries of despair, the Russians climbed into the remaining truck whose motor was running. Rapidly it drove away across the plain. McCready rose from the ravine and ran toward the standing truck. He started the motor and headed for the knoll.
"He's got a truck," cried Carnes. "We can get away in it."
"Where to?" demanded Dr. Bird. "Archangel is between us and the Denver."
The truck came up.
"Come on, Doctor," cried McCready. "Hurry up. We'll take the battery out of this truck and get our plane going."
"Oh, clever!" cried Dr. Bird admiringly. "Load that gun while I get Feodrovna, Carnesy. We'll get away safely yet."

* * * * *

The truck rolled up to the plane and stopped. While Carnes transferred the prisoner and the guns to the plane, the lieutenant and Dr. Bird ripped up the floor boards of the truck and exposed the battery. It was a matter of moments to detach it and carry it to the plane. It would not fit in place but they anchored it in place with wire.
"You'd better hurry," cried Carnes. "Here come a couple more trucks over the plain."
"That'll do, Doctor," said McCready. "Get on the prop and we'll see if the old puddle jumper will take off."

Dr. Bird ran to the propeller.
"Ready!" he cried.
"Contact!" snapped McCready.

The plane motor roared into life. The ship moved slowly forward as Dr. Bird climbed on board. Toward the oncoming trucks they rushed across the plain. A crash seemed imminent. In the nick of time McCready pulled back on his joystick and the plane rose gracefully into the air, clearing the leading truck by inches. The truck halted and hastily mounted a machine gun.
"Too late!" laughed the lieutenant. "Now it's our turn for some fun."
He tapped the key of his radio transmitter. In a few seconds he received an answer.
"They have reduced Fort Novadwinskaja," he reported to the rear cockpit, "but they don't know what to fire at next. Their largest guns will reach the factory easily. Shall I start some fireworks?"
"You may fire when ready, Gridly," chuckled Dr. Bird.

Again the lieutenant depressed his key. From their altitude of four thousand feet, they could see the Denver. From its forward turret came a puff of smoke. There were a few moments of pause and then a cloud of black rose from the plain below them, half a mile from the factory. McCready reported the position of the burst to the ship. A second shell burst beyond the factory and the third just in front of it.
"It's a clear bracket," said McCready. "Now watch the gun. I'll give them a salvo."

* * * * *

From the side of the Denver came a cloud of black smoke as all of her turret guns fired in unison. The aim was perfect. For a few moments all was quiet and then the factory disappeared in a smother of bursting high explosive shells.

Hardly had the shells landed than a terrific sheet of lightning ripped across the sky. The thunderclap which seemed to come simultaneously, rocked the plane like a feather. Sheet after sheet of lightning illuminated the sky while the roar of thunder was continuous. Rain fell in solid sheets. Even as they watched, it began to turn into snow. The air grew bitterly cold.
"The solar magnet is wrecked," shouted the doctor, "and these storms are the efforts of nature to return to normal."
"If they get any worse, we're doomed."
"But in a good cause."

Through the storm the plane raced. Suddenly the motor died with sickening suddenness.
"Our haywire battery connections are gone," shouted McCready. "Say your prayers."

The wind tossed the plane about like a feather. Rapidly it lost altitude. A building loomed up before them. As a crash seemed imminent, a gust of wind caught the plane and tossed it up into the air again. For several minutes the ground could not be seen through the rain. Suddenly the plane hit an airpocket and dropped like a stone. With a splash it fell into the sea. A rift came for a moment in the curtain of rain.
"Look!" cried Carnes.

A hundred yards away, the Denver rode at anchor.
"I'm only sorry about one thing," said Carnes ten minutes later as they changed to dry clothes aboard the battle cruiser, "and that is that Saranoff wasn't in the factory when that salvo fell on it."

"I'm glad he was away," replied Dr. Bird. "With him absent, we succeeded in destroying it. If he had been there, our task would have been more difficult and perhaps impossible. I am an enemy of Saranoff's, but I don't underrate his colossal genius."
When the discovery was announced, it was Dr. Chauncey Patrick Coffin who announced it. He had, of course, arranged with uncanny skill to take most of the credit for himself. If it turned out to be greater than he had hoped, so much the better. His presentation was scheduled for the last night of the American College of Clinical Practitioners' annual meeting, and Coffin had fully intended it to be a bombshell.

It was. Its explosion exceeded even Dr. Coffin's wilder expectations, which took quite a bit of doing. In the end he had waded through more newspaper reporters than medical doctors as he left the hall that night. It was a heady evening for Chauncey Patrick Coffin, M.D.

Certain others were not so delighted with Coffin's bombshell.

"It's idiocy!" young Dr. Phillip Dawson wailed in the laboratory conference room the next morning. "Blind, screaming idiocy. You've gone out of your mind—that's all there is to it. Can't you see what you've done? Aside from selling your colleagues down the river, that is?" He clenched the reprint of Coffin's address in his hand and brandished it like a broadsword. "'Report on a Vaccine for the Treatment and Cure of the Common Cold,' by C. P. Coffin, et al. That's what it says—et al. My idea in the first place. Jake and I both pounding our heads on the wall for eight solid months—and now you sneak it into publication a full year before we have any business publishing a word about it."

"Really, Phillip!" Dr. Chauncey Coffin ran a pudgy hand through his snowy hair. "How ungrateful! I thought for sure you'd be delighted. An excellent presentation, I must say—terse, succinct, unequivocal—" he raised his hand—"but generously unequivocal, you understand. You should have heard the ovation—they nearly went wild! And the look on Underwood's face! Worth waiting twenty years for."

"And the reporters," snapped Phillip. "Don't forget the reporters." He whirled on the small dark man sitting quietly in the corner. "How about that, Jake? Did you see the morning papers? This thief not only steals our work, he splashes it all over the countryside in red ink."

Dr. Jacob Miles coughed apologetically. "What Phillip is so stormed up about is the prematurity of it all," he said to Coffin. "After all, we've hardly had an acceptable period of clinical trial."

"Nonsense," said Coffin, glaring at Phillip. "Underwood and his men were ready to publish their discovery within another six weeks. Where would we be then? How much clinical testing do you want? Phillip, you had the worst cold of your life when you took the vaccine. Have you had any since?"

"No, of course not," said Phillip peevishly.

"Jacob, how about you? Any sniffles?"

"Oh, no. No colds."

"Well, what about those six hundred students from the University? Did I misread the reports on them?"

"No—98 per cent cured of active symptoms within twenty-four hours. Not a single recurrence. The results were just short of miraculous." Jake hesitated. "Of course, it's only been a month...."

"Month, year, century! Look at them! Six hundred of the world's most luxuriant colds, and not even a sniffle." The chubby doctor sank down behind the desk, his ruddy face beaming. "Come, now, gentlemen, be reasonable. Think positively! There's work to be done, a great deal of work. They'll be wanting me in Washington, I imagine. Press conference in twenty minutes. Drug houses to consult with. How dare we stand in the path of Progress? We've won the greatest medical triumph of all times—the conquering of the Common Cold. We'll go down in history!"

And he was perfectly right on one point, at least.

They did go down in history.

* * * * *

The public response to the vaccine was little less than monumental. Of all the ailments that have tormented mankind through history none was ever more universal, more tenacious, more uniformly miserable than the common cold. It was a respecter of no barriers, boundaries, or classes; ambassadors and chambermaids sniffed and sneezed in drippy-nosed unanimity. The powers in the Kremlin sniffed and blew and wept genuine tears on drafty days, while senatorial debates on earth-shaking issues paused reverently upon the unplugging of a nose, the clearing of a rhinorrhoeic throat. Other illnesses brought disability, even death in their wake; the common cold merely brought torment to the millions as it implacably resisted the most superhuman of efforts to curb it.
Until that chill, rainy November day when the tidings broke to the world in four-inch banner heads:

COFFIN NAILS LID ON COMMON COLD
"No More Coughin'" States Co-Finder of Cure
SNIFFLES SNIPED: SINGLE SHOT TO SAVE SNEEZERS

In medical circles it was called the Coffin Multicentric Upper Respiratory Virus-Inhibiting Vaccine; but the papers could never stand for such high-sounding names, and called it, simply, "The Coffin Cure."

Below the banner heads, world-renowned feature writers expounded in reverent terms the story of the leviathan struggle of Dr. Chauncey Patrick Coffin (et al.) in solving this riddle of the ages: how, after years of failure, they ultimately succeeded in culturing the causative agent of the common cold, identifying it not as a single virus or group of viruses, but as a multicentric virus complex invading the soft mucous linings of the nose, throat and eyes, capable of altering its basic molecular structure at any time to resist efforts of the body from within, or the physician from without, to attack and dispel it; how the hypothesis was set forth by Dr. Phillip Dawson that the virus could be destroyed only by an antibody which could "freeze" the virus-complex in one form long enough for normal body defenses to dispose of the offending invader; the exhausting search for such a "crippling agent," and the final crowning success after injecting untold gallons of cold-virus material into the hides of a group of co-operative and forbearing dogs (a species which never suffered from colds, and hence endured the whole business with an air of affectionate boredom).

And finally, the testing. First, Coffin himself (who was suffering a particularly horrendous case of the affliction he sought to cure); then his assistants Phillip Dawson and Jacob Miles; then a multitude of students from the University--carefully chosen for the severity of their symptoms, the longevity of their colds, their tendency to acquire them on little or no provocation, and their utter inability to get rid of them with any known medical program.

They were a sorry spectacle, those students filing through the Coffin laboratory for three days in October: wheezing like steam shovels, snorting and sneezing and sniffling and blowing, coughing and squeaking, mute appeals glowing in their blood-shot eyes. The researchers dispensed the materials--a single shot in the right arm, a sensitivity control in the left.

With growing delight they then watched as the results came in. The sneezing stopped; the sniffling ceased. A great silence settled over the campus, in the classrooms, in the library, in classic halls. Dr. Coffin's voice returned (rather to the regret of his fellow workers) and he began bouncing about the laboratory like a small boy at a fair. Students by the dozen trooped in for checkups with noses dry and eyes bright.

In a matter of days there was no doubt left that the goal had been reached.

"But we have to be sure," Phillip Dawson had cried cautiously. "This was only a pilot test. We need mass testing now, on an entire community. We should go to the West Coast and run studies there--they have a different breed of cold out there, I hear. We'll have to see how long the immunity lasts, make sure there are no unexpected side effects...." And, muttering to himself, he fell to work with pad and pencil, calculating the program to be undertaken before publication.

But there were rumors. Underwood at Stanford, they said, had already completed his tests and was preparing a paper for publication in a matter of months. Surely with such dramatic results on the pilot tests something could be put into print. It would be tragic to lose the race for the sake of a little unnecessary caution....

Peter Dawson was adamant, but he was a voice crying in the wilderness. Chauncey Patrick Coffin was boss.

Within a week even Coffin was wondering if he had bitten off just a trifle too much. They had expected that demand for the vaccine would be great--but even the grisly memory of the early days of the Salk vaccine had not prepared them for the mobs of sneezing, wheezing red-eyed people bombarding them for the first fruits.

Clear-eyed young men from the Government Bureau pushed through crowds of local townspeople, lining the streets outside the Coffin laboratory, standing in pouring rain to raise insistent placards.

Seventeen pharmaceutical houses descended like vultures with production plans, cost-estimates, colorful graphs demonstrating proposed yield and distribution programs. Coffin was flown to Washington, where conferences labored far into the night as demands pounded their doors like a tidal wave.

One laboratory promised the vaccine in ten days; another said a week. The first actually appeared in three weeks and two days, to be soaked up in the space of three hours by the thirsty sponge of cold-weary humanity. Express planes were dispatched to Europe, to Asia, to Africa with the precious cargo, a million needles pierced a million hides, and with a huge, convulsive sneeze mankind stepped forth into a new era.

* * * * *

There were abstainers, of course. There always are.
"It doesn't bake eddy differets how much you talk," Ellie Dawson cried hoarsely, shaking her blonde curls. "I don't wadt eddy cold shots."

"You're being totally unreasonable," Phillip said, glowering at his wife in annoyance. She wasn't the sweet
young thing he had married, not this evening. Her eyes were puffy, her nose red and dripping. "You've had this cold for two solid months now, and there just isn't any sense to it. It's making you miserable. You can't eat, you can't breathe, you can't sleep."

"I don't want eddy cold shots," she repeated stubbornly.
"But why not? Just one little needle, you'd hardly feel it."
"But I don't like deedles!" she cried, bursting into tears. "Why don't you leave be alode? Go take your dasty old deedles ad stick theb id people that wadt theb."
"Aw, Ellie--"
"I don't care, I don't like deedles!" she wailed, burying her face in his shirt.

He held her close, making comforting little noises. It was no use, he reflected sadly. Science just wasn't Ellie's long suit; she didn't know a cold vaccine from a case of smallpox, and no appeal to logic or common sense could surmount her irrational fear of hypodermics. "All right, nobody's going to make you do anything you don't want to," he said.

"Ad eddyway, thik of the poor tissue badufacturers," she sniffled, wiping her nose with a pink facial tissue. "All their little childred starvig to death."

"Say, you have got a cold," said Phillip, sniffing. "You've got on enough perfume to fell an ox." He wiped away tears and grinned at her. "Come on now, fix your face. Dinner at the Driftwood? I hear they have marvelous lamb chops."

It was a mellow evening. The lamb chops were delectable--the tastiest lamb chops he had ever eaten, he thought, even being blessed with as good a cook as Ellie for a spouse. Ellie dripped and blew continuously, but refused to go home until they had taken in a movie, and stopped by to dance a while. "I hardly ever gedt to see you eddy bore," she said. "All because of that dasty bedicide you're givig people."

It was true, of course. The work at the lab was endless. They danced, but came home early nevertheless. Phillip needed all the sleep he could get.

He awoke once during the night to a parade of sneezes from his wife, and rolled over, frowning sleepily to himself. It was ignominious, in a way--his own wife refusing the fruit of all those months of work.

And cold or no cold, she surely was using a whale of a lot of perfume.

He awoke, suddenly, began to stretch, and sat bolt upright in bed, staring wildly about the room. Pale morning sunlight drifted in the window. Downstairs he heard Ellie stirring in the kitchen.

For a moment he thought he was suffocating. He leaped out of bed, stared at the vanity table across the room.

"Somebody's spilled the whole damned bottle--"

The heavy sick-sweet miasma hung like a cloud around him, drenching the room. With every breath it grew thicker. He searched the table top frantically, but there were no empty bottles. His head began to spin from the sickening effluvium.

He blinked in confusion, his hand trembling as he lit a cigarette. No need to panic, he thought. She probably knocked a bottle over when she was dressing. He took a deep puff, and burst into a paroxysm of coughing as acrid fumes burned down his throat to his lungs.

"Ellie!" He rushed into the hall, still coughing. The match smell had given way to the harsh, caustic stench of burning weeds. He stared at his cigarette in horror and threw it into the sink. The smell grew worse. He threw open the hall closet, expecting smoke to come billowing out. "Ellie! Somebody's burning down the house!"

"Whatevver are you talking about?" Ellie's voice came from the stair well. "It's just the toast I burned, silly."

He rushed down the stairs two at a time--and nearly gagged as he reached the bottom. The smell of hot, rancid grease struck him like a solid wall. It was intermingled with an oily smell of boiled and parboiled coffee, overpowering in its intensity. By the time he reached the kitchen he was holding his nose, tears pouring from his eyes. "Ellie, what are you doing in here?"

She stared at him. "I'b baking breakfast."
"But don't you smell it?"
"Sbell whad?" said Ellie.

On the stove the automatic percolator was making small, promising noises. In the frying pan four sunnyside eggs were sizzling; half a dozen strips of bacon drained on a paper towel on the sideboard. It couldn't have looked more innocent.

Cautiously, Phillip released his nose, sniffed. The stench nearly choked him. "You mean you don't smell anything strange?"
"I did't sbell eddything, period," said Ellie defensively.
"The coffee, the bacon--come here a minute."
She reeked—of bacon, of coffee, of burned toast, but mostly of perfume. "Did you put on any fresh perfume this morning?"
"Before breakfast? Don't be ridiculous."
"Not even a drop?" Phillip was turning very white.
"Dot a drop."
He shook his head. "Now, wait a minute. This must be all in my mind. I'm--just imagining things, that's all. Working too hard, hysterical reaction. In a minute it'll all go away." He poured a cup of coffee, added cream and sugar.

But he couldn't get it close enough to taste it. It smelled as if it had been boiling three weeks in a rancid pot. It was the smell of coffee, all right, but a smell that was fiendishly distorted, overpoweringly, nauseatingly magnified. It pervaded the room and burned his throat and brought tears gushing to his eyes.

Slowly, realization began to dawn. He spilled the coffee as he set the cup down. The perfume. The coffee. The cigarette....
"My hat," he choked. "Get me my hat. I've got to get to the laboratory."
* * * * *
It got worse all the way downtown. He fought down waves of nausea as the smell of damp, rotting earth rose from his front yard in a gray cloud. The neighbor's dog dashed out to greet him, exuding the great-grandfather of all doggy odors. As Phillip waited for the bus, every passing car fouled the air with noxious fumes, gagging him, doubling him up with coughing as he dabbed at his streaming eyes.

Nobody else seemed to notice anything wrong at all.
The bus ride was a nightmare. It was a damp, rainy day; the inside of the bus smelled like the men's locker room after a big game. A bleary-eyed man with three-days' stubble on his chin flopped down in the seat next to him, and Phillip reeled back with a jolt to the job he had held in his student days, cleaning vats in the brewery.

"It'sh a great morning," Bleary-eyes breathed at him, "huh, Doc?" Phillip blanched. To top it, the man had had a breakfast of salami. In the seat ahead, a fat man held a dead cigar clamped in his mouth like a rank growth. Phillip's stomach began rolling; he sank his face into his hand, trying unobtrusively to clamp his nostrils. With a groan of deliverance he lurched off the bus at the laboratory gate.

He met Jake Miles coming up the steps. Jake looked pale, too pale.
"Morning," Phillip said weakly. "Nice day. Looks like the sun might come through."
"Yeah," said Jake. "Nice day. You--uh--feel all right this morning?"
"Fine, fine." Phillip tossed his hat in the closet, opened the incubator on his culture tubes, trying to look busy.

He slammed the door after one whiff and gripped the edge of the work table with whitening knuckles. "Why?"
"Oh, nothing. Thought you looked a little peaked, was all."
They stared at each other in silence. Then, as though by signal, their eyes turned to the office at the end of the lab.
"Coffin come in yet?"
Jake nodded. "He's in there. He's got the door locked."
"I think he's going to have to open it," said Phillip.

A gray-faced Dr. Coffin unlocked the door, backed quickly toward the wall. The room reeked of kitchen deodorant. "Stay right where you are," Coffin squeaked. "Don't come a step closer. I can't see you now. I'm--I'm busy, I've got work that has to be done--"
"You're telling me," growled Phillip. He motioned Jake into the office and locked the door carefully. Then he turned to Coffin. "When did it start for you?"
Coffin was trembling. "Right after supper last night. I thought I was going to suffocate. Got up and walked the streets all night. My God, what a stench!"
"Jake?"
Dr. Miles shook his head. "Sometime this morning, I don't know when. I woke up with it."
"That's when it hit me," said Phillip.
"But I don't understand," Coffin howled. "Nobody else seems to notice anything--"
"Yet," said Phillip, "we were the first three to take the Coffin Cure, remember? You, and me and Jake. Two months ago."

Coffin's forehead was beaded with sweat. He stared at the two men in growing horror. "But what about the others?" he whispered.
"I think," said Phillip, "that we'd better find something spectacular to do in a mighty big hurry. That's what I think."
* * * * *
Jake Miles said, "The most important thing right now is secrecy. We mustn't let a word get out, not until we're absolutely certain."

"But what's happened?" Coffin cried. "These foul smells, everywhere. You, Phillip, you had a cigarette this morning. I can smell it clear over here, and it's bringing tears to my eyes. And if I didn't know better I'd swear neither of you had had a bath in a week. Every odor in town has suddenly turned foul--"

"Magnified, you mean," said Jake. "Perfume still smells sweet--there's just too much of it. The same with cinnamon; I tried it. Cried for half an hour, but it still smelled like cinnamon. No, I don't think the smells have changed any."

"But what, then?"

"Our noses have changed, obviously." Jake paced the floor in excitement. "Look at our dogs! They've never had colds--and they practically live by their noses. Other animals--all dependent on their senses of smell for survival--and none of them ever have anything even vaguely reminiscent of a common cold. The multicentric virus hits primates only--and it reaches its fullest parasitic powers in man alone!"

Coffin shook his head miserably. "But why this horrible stench all of a sudden? I haven't had a cold in weeks--"

"Of course not! That's just what I'm trying to say," Jake cried. "Look, why do we have any sense of smell at all? Because we have tiny olfactory nerve endings buried in the mucous membrane of our noses and throats. But we have always had the virus living there, too, colds or no colds, throughout our entire lifetime. It's always been there, anchored in the same cells, parasitizing the same sensitive tissues that carry our olfactory nerve endings, numbing them and crippling them, making them practically useless as sensory organs. No wonder we never smelled anything before! Those poor little nerve endings never had a chance!"

"Until we came along in our shining armor and destroyed the virus," said Phillip.

"Oh, we didn't destroy it. We merely stripped it of a very slippery protective mechanism against normal body defences." Jake perched on the edge of the desk, his dark face intense. "These two months since we had our shots have witnessed a battle to the death between our bodies and the virus. With the help of the vaccine, our bodies have won, that's all--stripped away the last vestiges of an invader that has been almost a part of our normal physiology since the beginning of time. And now for the first time those crippled little nerve endings are just beginning to function."

"God help us," Coffin groaned. "You think it'll get worse?"

"And worse. And still worse," said Jake.

"I wonder," said Phillip slowly, "what the anthropologists will say."

"What do you mean?"

"Maybe it was just a single mutation somewhere back there. Just a tiny change of cell structure or metabolism that left one line of primates vulnerable to an invader no other would harbor. Why else should man have begun to flower and blossom intellectually--grow to depend so much on his brains instead of his brawn that he could rise above all others? What better reason than because somewhere along the line in the world of fang and claw he suddenly lost his sense of smell?"

They stared at each other. "Well, he's got it back again now," Coffin wailed, "and he's not going to like it a bit."

"No, he surely isn't," Jake agreed. "He's going to start looking very quickly for someone to blame, I think."

They both looked at Coffin.

"Now don't be ridiculous, boys," said Coffin, turning white. "We're in this together. Phillip, it was your idea in the first place--you said so yourself! You can't leave me now--"

The telephone jangled. They heard the frightened voice of the secretary clear across the room. "Dr. Coffin? There was a student on the line just a moment ago. He--he said he was coming up to see you. Now, he said, not later."

"I'm busy," Coffin sputtered. "I can't see anyone. And I can't take any calls."

"But he's already on his way up," the girl burst out. "He was saying something about tearing you apart with his bare hands."

Coffin slammed down the receiver. His face was the color of lead. "They'll crucify me!" he sobbed. "Jake--Phillip--you've got to help me."

Phillip sighed and unlocked the door. "Send a girl down to the freezer and have her bring up all the live cold virus she can find. Get us some inoculated monkeys and a few dozen dogs." He turned to Coffin. "And stop sniveling. You're the big publicity man around here; you're going to handle the screaming masses, whether you like it or not."

"But what are you going to do?"

"I haven't the faintest idea," said Phillip, "but whatever I do is going to cost you your shirt. We're going to find out how to catch cold again if we have to die."
It was an admirable struggle, and a futile one. They sprayed their noses and throats with enough pure culture of virulent live virus to have condemned an ordinary man to a lifetime of sneezing, watery-eyed misery. They didn't develop a sniffle among them. They mixed six different strains of virus and gargled the extract, spraying themselves and every inoculated monkey they could get their hands on with the vile-smelling stuff. Not a sneeze. They injected it hypodermically, intradermally, subcutaneously, intramuscularly, and intravenously. They drank it. They bathed in the stuff.

But they didn't catch a cold.

"Maybe it's the wrong approach," Jake said one morning. "Our body defenses are keyed up to top performance right now. Maybe if we break them down we can get somewhere."

They plunged down that alley with grim abandon. They starved themselves. They forced themselves to stay awake for days on end, until exhaustion forced their eyes closed in spite of all they could do. They carefully devised vitamin-free, protein-free, mineral-free diets that tasted like library paste and smelled worse. They wore wet clothes and sopping shoes to work, turned off the heat and threw windows open to the raw winter air. Then they resprayed themselves with the live cold virus and waited reverently for the sneezing to begin.

It didn't. They stared at each other in gathering gloom. They'd never felt better in their lives.

Except for the smells, of course. They'd hoped that they might, presently, get used to them. They didn't. Every day it grew a little worse. They began smelling smells they never dreamed existed--noxious smells, cloying smells, smells that drove them gagging to the sinks. Their nose-plugs were rapidly losing their effectiveness. Mealtimes were nightmarish ordeals; they lost weight with alarming speed.

But they didn't catch cold.

"I think you should all be locked up," Ellie Dawson said severely as she dragged her husband, blue-faced and shivering, out of an icy shower one bitter morning. "You've lost your wits. You need to be protected against yourselves, that's what you need."

"You don't understand," Phillip moaned. "We've got to catch cold."

"Why?" Ellie snapped angrily. "Suppose you don't--what's going to happen?"

"We had three hundred students march on the laboratory today," Phillip said patiently. "The smells were driving them crazy, they said. They couldn't even bear to be close to their best friends. They wanted something done about it, or else they wanted blood. Tomorrow we'll have them back and three hundred more. And they were just the pilot study! What's going to happen when fifteen million people find their noses going bad on them?" He shuddered. "Have you seen the papers? People are already going around sniffing like bloodhounds. And now we're finding out what a thorough job we did. We can't crack it, Ellie. We can't even get a toe hold. Those antibodies are just doing too good a job."

"Well, maybe you can find some unclebodies to take care of them," Ellie offered vaguely.

"Look, don't make bad jokes--"

"I'm not making jokes! All I want is a husband back who doesn't complain about how everything smells, and eats the dinners I cook, and doesn't stand around in cold showers at six in the morning."

"I know it's miserable," he said helplessly. "But I don't know how to stop it."

He found Jake and Coffin in tight-lipped conference when he reached the lab. "I can't do it any more," Coffin was saying. "I've begged them for time. I've threatened them. I've promised them everything but my upper plate. I can't face them again, I just can't."

"We only have a few days left," Jake said grimly. "If we don't come up with something, we're goners."

Phillip's jaw suddenly sagged as he stared at them. "You know what I think?" he said suddenly. "I think we've been prize idiots. We've gotten so rattled we haven't used our heads. And all the time it's been sitting there blinking at us!"

"What are you talking about?" snapped Jake.

"Unclebodies," said Phillip.

"Oh, great God!"

"No, I'm serious." Phillip's eyes were very bright. "How many of those students do you think you can corral to help us?"

Coffin gulped. "Six hundred. They're out there in the street right now, howling for a lynching."

"All right, I want them in here. And I want some monkeys. Monkeys with colds, the worse colds the better."

"Do you have any idea what you're doing?" asked Jake.

"None in the least," said Phillip happily, "except that it's never been done before. But maybe it's time we tried following our noses for a while."
The tidal wave began to break two days later ... only a few people here, a dozen there, but enough to confirm the direst newspaper predictions. The boomerang was completing its circle.

At the laboratory the doors were kept barred, the telephones disconnected. Within, there was a bustle of feverish—if odorous—activity. For the three researchers, the olfactory acuity had reached agonizing proportions. Even the small gas masks Phillip had devised could no longer shield them from the constant barrage of violent odors.

But the work went on in spite of the smell. Truckloads of monkeys arrived at the lab—cold-ridden monkeys, sneezing, coughing, weeping, wheezing monkeys by the dozen. Culture trays bulged with tubes, overflowed the incubators and work tables. Each day six hundred angry students paraded through the lab, arms exposed, mouths open, grumbling but co-operating.

At the end of the first week, half the monkeys were cured of their colds and were quite unable to catch them back; the other half had new colds and couldn't get rid of them. Phillip observed this fact with grim satisfaction, and went about the laboratory mumbling to himself.

Two days later he burst forth jubilantly, lugging a sad-looking puppy under his arm. It was like no other puppy in the world. This puppy was sneezing and snuffling with a perfect howler of a cold.

The day came when they injected a tiny droplet of milky fluid beneath the skin of Phillip's arm, and then got the virus spray and gave his nose and throat a liberal application. Then they sat back and waited.

They were still waiting three days later.

"It was a great idea," Jake said gloomily, flipping a bulging notebook closed with finality. "It just didn't work, was all."

Phillip nodded. Both men had grown thin, with pouches under their eyes. Jake's right eye had begun to twitch uncontrollably whenever anyone came within three yards of him. "We can't go on like this, you know. The people are going wild."

"Where's Coffin?"

"He collapsed three days ago. Nervous prostration. He kept having dreams about hangings."

Phillip sighed. "Well, I suppose we'd better just face it. Nice knowing you, Jake. Pity it had to be this way."

"It was a great try, old man. A great try."

"Ah, yes. Nothing like going down in a blaze of—"

Phillip stopped dead, his eyes widening. His nose began to twitch. He took a gasp, a larger gasp, as a long-dead reflex came sleepily to life, shook its head, reared back ...

Phillip sneezed.

He sneezed for ten minutes without a pause, until he lay on the floor blue-faced and gasping for air. He caught hold of Jake, wringing his hand as tears gushed from his eyes. He gave his nose an enormous blow, and headed shakily for the telephone.

* * * * *

"It was a sipple edough pridciple," he said later to Ellie as she spread mustard on his chest and poured more warm water into his foot bath. "The Cure itself depeded upod it--the adtiged-adtibody reactiod. We had the adtibody agaidst the virus, all ridght; what we had to find was sobe kide of adtibody agaidst the adtibody." He sneezed violently, and poured in nose drops with a happy grin.

"Will they be able to make it fast enough?"

"Just aboudt fast edough for people to get good ad eager to catch cold agaid," said Phillip. "There's odly wud little hitch...."

Ellie Dawson took the steaks from the grill and set them, still sizzling, on the dinner table. "Hitch?"

Phillip nodded as he chewed the steak with a pretence of enthusiasm. It tasted like slightly damp K-ration.

"This stuff we've bade does a real good job. Just a little too good." He wiped his nose and reached for a fresh tissue.

"I bay be wrog, but I thik I've got this cold for keeps," he said sadly. "Udless I cad fide ad adtibody agaidst the adtibody agaidst the adtibody--"
It was almost dark when he awoke, and lay on the bed, motionless and trembling, his heart sinking in the knowledge that he should never have slept. For almost half a minute, eyes wide with fear, he lay in the silence of the gloomy room, straining to hear some sound, some indication of their presence.

But the only sound was the barely audible hum of his wrist watch and the dismal splatter of raindrops on the cobbled street outside. There was no sound to feed his fear, yet he knew then, without a flicker of doubt, that they were going to kill him.

He shook his head, trying to clear the sleep from his brain as he turned the idea over and over in his mind. He wondered why he hadn't realized it before, long before, back when they had first started this horrible, nerve-wracking cat-and-mouse game. The idea just hadn't occurred to him. But he knew the game-playing was over. They wanted to kill him now. And he knew that ultimately they would kill him. There was no way for him to escape.

He sat up on the edge of the bed, painfully, perspiration standing out on his bare back, and he waited, listening. How could he have slept, exposing himself so helplessly? Every ounce of his energy, all the skill and wit and shrewdness at his command were necessary in this cruel hunt; yet he had taken the incredibly terrible chance of sleeping, of losing consciousness, leaving himself wide open and helpless against the attack which he knew was inevitable.

How much had he lost? How close had they come while he slept?

Fearfully, he walked to the window, peered out, and felt his muscles relax a little. The gray, foggy streets were still light. He still had a little time before the terrible night began.

He stumbled across the small, old-fashioned room, sensing that action of some sort was desperately needed. The bathroom was tiny; he stared in the battered, stained reflector unit, shocked at the red-eyed stubble-faced apparition that stared back at him.

This is Harry Scott, he thought, thirty-two years old, and in the prime of life, but not the same Harry Scott who started out on a ridiculous quest so many months ago. This Harry Scott was being hunted like an animal, driven by fear, helpless, and sure to die, unless he could find an escape, somehow. But there were too many of them for him to escape, and they were too clever, and they knew he knew too much.

He stepped into the shower-shave unit, trying to relax, to collect his racing thoughts. Above all, he tried to stay the fear that burned through his mind, driving him to panic and desperation. The memory of the last hellish night was too stark to allow relaxation—the growing fear, the silent, desperate hunt through the night; the realization that their numbers were increasing; his frantic search for a hiding place in the New City; and finally his panic-stricken, pell-mell flight down into the alleys and cobbled streets and crumbling frame buildings of the Old City.... Even more horrible, the friends who had turned on him, who turned out to be like them.

Back in the bedroom, he lay down again, his body still tense. There were sounds in the building, footsteps moving around on the floor overhead, a door banging somewhere. With every sound, every breath of noise, his muscles tightened still further, freezing him in fear. His own breath was shallow and rapid in his ears as he lay, listening, waiting.

If only something would happen! He wanted to scream, to bang his head against the wall, to run about the room smashing his fist into doors, breaking every piece of furniture. It was the waiting, the eternal waiting, and running, waiting some more, feeling the net drawing tighter and tighter as he waited, feeling the measured, unhurried tread behind him, always following, coming closer and closer, as though he were a mouse on a string, twisting and jerking helplessly.

If only they would move, do something he could counter.

But he wasn't even sure any more that he could detect them. And they were so careful never to move into the open.

He jumped up feverishly, moved to the window, and peered between the slats of the dusty, old-fashioned blind at the street below.

An empty street at first, wet, gloomy. He saw no one. Then he caught the flicker of light in an entry several doors down and across the street, as a dark figure sparked a cigarette to life. Harry felt the chill run down his back again. Still there, then, still waiting, a hidden figure, always present, always waiting....

Harry’s eyes scanned the rest of the street rapidly. Two three-wheelers rumbled by, their rubber hissing on the wet pavement. One of them carried the blue-and-white of the Old City police, but the car didn't slow up or hesitate as it passed the dark figure in the doorway. They would never help me anyway, Harry thought bitterly. He had tried that before, and met with ridicule and threats. There would be no help from the police in the Old City.

Another figure came around a corner. There was something vaguely familiar about the tall body and broad shoulders as the man walked across the wet street, something Harry faintly recognized from somewhere during the spinning madness of the past few weeks.
The man's eyes turned up toward the window for the briefest instant, then returned steadfastly to the street. Oh, they were sly! You could never spot them looking at you, never for sure, but they were always there, always nearby. And there was no one he could trust any longer, no one to whom he could turn.

Not even George Webber.

Swiftly his mind reconsidered that possibility as he watched the figure move down the street. True, Dr. Webber had started him out on this search in the first place. But even Webber would never believe what he had found. Webber was a scientist, a researcher.

What could he do--go to Webber and tell him that there were men alive in the world who were not men, who were somehow men and something more?

Could he walk into Dr. Webber's office in the Hoffman Medical Center, walk through the gleaming bright corridors, past the shining metallic doors, and tell Dr. Webber that he had found people alive in the world who could actually see in four dimensions, live in four dimensions, think in four dimensions?

Could he explain to Dr. Webber that he knew this simply because in some way he had sensed them, and traced them, and discovered them; that he had not one iota of proof, except that he was being followed by them, hunted by them, even now, in a room in the Old City, waiting for them to strike him down?

He shook his head, almost sobbing. That was what was so horrible. He couldn't tell Webber, because Webber would be certain that he had gone mad, just like the rest. He couldn't tell anyone, he couldn't do anything. He could just wait, and run, and wait--

It was almost dark now and the creaking of the old board house intensified the fear that tore at Harry Scott's mind. Tonight was the night; he was sure of it. Maybe he had been foolish in coming here to the slum area, where the buildings were relatively unguarded, where anybody could come and go as he pleased. But the New City had hardly been safer, even in the swankiest private chamber in the highest building. They had had agents there, too, hunting him, driving home the bitter lesson of fear they had to teach him. Now he was afraid enough; now they were ready to kill him.

Down below he heard a door bang, and he froze, his back against the wall. There were footsteps, quiet voices, barely audible. His whole body shook and his eyes slid around to the window. The figure in the doorway still waited--but the other figure was not visible. He heard the steps on the stair, ascending slowly, steadily, a tread that paced itself with the powerful throbbing of his own pulse.

Then the telephone screamed out--

Harry gasped. The footsteps were on the floor below, moving steadily upward. The telephone rang again and again; the shrill jangling filled the room insistently. He waited until he couldn't wait any longer. His hand fumbled in a pocket and leveled a tiny, dull-gray metal object at the door. With the other hand, he took the receiver from the hook.

"Harry! Is that you?"

His throat was like sandpaper and the words came out in a rasp. "What is it?"

"Harry, this is George--George Webber."

His eyes were glued to the door. "All right. What do you want?"

"You've got to come talk to us, Harry. We've been waiting for weeks now. You promised us. We've got to talk to you."

Harry still watched the door, but his breath came easier. The footsteps moved with ridiculous slowness up the stairs, down the hall toward the room.

"What do you want me to do? They've come to kill me."

There was a long pause. "Harry, are you sure?"

"Dead sure."

"Can you make a break for it?"

Harry blinked. "I could try. But it won't do any good."

"Well, at least try, Harry. Get here to the Hoffman Center. We'll help you all we can."

"I'll try." Harry's words were hardly audible as he set the receiver down with a trembling hand.

The room was silent. The footsteps had stopped. A wave of panic passed up Harry's spine; he crossed the room, threw open the door, stared up and down the hall, unbelieving.

The hall was empty. He started down toward the stairs at a dead run, and then, too late, saw the faint golden glow of a Parkinson Field across the dingy corridor. He gasped in fear, and screamed out once as he struck it.

And then, for seconds stretching into hours, he heard his scream echoing and re-echoing down long, bitter miles of hollow corridor.

George Webber leaned back in the soft chair, turning a quizzical glance toward the younger man across the
room. He lit a long black cigar.

"Well?" His heavy voice boomed out in the small room. "Now that we've got him here, what do you think?"

The younger man glanced uncomfortably through the glass wall panel into the small dark room beyond. In the dimness, he could barely make out the still form on the bed, grotesque with the electrode-vernier apparatus already in place at its temples. Dr. Manelli looked away sharply, and leafed through the thick sheaf of chart papers in his hand.

"I don't know," he said dully. "I just don't know what to think."

The other man's laugh seemed to rise from the depths of his huge chest. His heavy face creased into a thousand wrinkles. Dr. Webber was a large man, his broad shoulders carrying a suggestion of immense power that matched the intensity of his dark, wide-set eyes. He watched Dr. Manelli's discomfort grow, saw the younger doctor's ears grow red, and the almost cruel lines in his face were masked as he laughed still louder.

"Trouble with you, Frank, you just don't have the courage of your convictions."

"Well, I don't see anything so funny about it!" Manelli's eyes were angry. "The man has a suspicious syndrome-so you've followed him, and spied on him for weeks on end, which isn't exactly highest ethical practice in collecting a history. I still can't see how you're justified."

Dr. Webber snorted, tossing his cigar down on the desk with disgust. "The man is insane. That's my justification. He's out of touch with reality. He's wandered into a wild, impossible, fantastic dream world. And we've got to get him out of it, because what he knows, what he's trying to hide from us, is so incredibly dangerous that we don't dare let him go."

The big man stared at Manelli, his dark eyes flashing. "Can't you see that? Or would you rather sit back and let Harry Scott go the way that Paulus and Wineberg and the others went?"

"But to use the Parkinson Field on him--" Dr. Manelli shook his head hopelessly. "He'd offered to come over, George. We didn't need to use it."

"Sure, he offered to come--fine, fine. But supposing he changed his mind on the way? For all we know, he had us figured into his paranoia, too, and never would have come near the Hoffman Center."

Dr. Webber shook his head. "We're not playing a game any more, Frank. Get that straight. I thought it was a game a couple of years ago, when we first started. But it ceased to be a game when men like Paulus and Wineberg walked in sane, healthy men, and came out blubbering idiots. That's no game any more. We're onto something big. And, if Harry Scott can lead us to the core of it, then I can't care too much what happens to Harry Scott."

Dr. Manelli stood up sharply, walked to the window, and looked down over the bright, clean buildings of the Hoffman Medical Center. Out across the terraced park that surrounded the glassed towers and shining metal of the Center rose the New City, tier upon tier of smooth, functional architecture, a city of dreams built up painfully out of the rubble of the older, ruined city.

"You could kill him," the young man said finally. "The psycho-integrator isn't any standard interrogative technique; it's dangerous and treacherous. You never know for sure just what you're doing when you dig down into a man's brain tissue with those little electrode probes."

"But we can learn the truth about Harry Scott," Dr. Webber broke in. "Six months ago, Harry Scott was working with us, a quiet, affable, pleasant young fellow, extremely intelligent, intensely co-operative. He was just the man we needed to work with us, an engineer who could take our data and case histories, study them, and subject them to a completely nonmedical analysis. Oh, we had to have it done--the problem's been with us for a hundred years now, growing ever since the 1950s and 60s--insanity in the population, growing, spreading without rhyme or reason, insinuating itself into every nook and cranny of our civilized life."

The big man blinked at Manelli. "Harry Scott was the new approach. We were too close to the problem. We needed a nonmedical outsider to take a look, to tell us what we were missing. So Harry Scott walked into the problem, and then abruptly lost contact with us. We finally track him down and find him gone, out of touch with reality, on the same wretched road that all the others went. With Harry, it's paranoia. He's being persecuted; he has the whole world against him, but most important--the factor we don't dare overlook--he's no longer working on the problem."

Manelli shifted uneasily. "I suppose that's right."

"Of course it's right!" Dr. Webber's eyes flashed. "Harry found something in those statistics. Something about the data, or the case histories; or something Harry Scott himself dug up opened a door for him to go through, a door that none of us ever dreamed existed. We don't know what he found on the other side of that door. Oh, we know what he thinks he found, all this garbage about people that look normal but walk through walls when nobody's looking, who think around corners instead of in straight-line logic. But what he really found there, we don't have any way of telling. We just know that whatever he really found is something new, something unsuspected; something so dangerous it can drive an intelligent man into the wildest delusions of paranoid persecution."
A new light appeared in Dr. Manelli's eyes as he faced the other doctor. "Wait a minute," he said softly. "The integrator is an experimental instrument, too."

Dr. Webber smiled slyly. "Now you're beginning to think," he said. "But you'll see only what Scott himself believes. And he thinks his story is true."
"Then we'll have to break his story."
"Break it?"
"Certainly. For some reason, this delusion of persecution is far safer for Harry Scott than facing what he really found out. What we've got to do is to make this delusion less safe than the truth."

The room was silent for a long moment. Manelli looked up, his fingers trembling. "Let's hear it."
"It's very simple. Up to now, Harry Scott has had delusions of persecution. But now we're really going to persecute Harry Scott, as he's never been persecuted before."

3

At first he thought he was at the bottom of a deep well and he lay quite still, his eyes clamped shut, wondering where he was and how he could possibly have gotten there. He could feel the dampness and chill of the stone floor under him, and nearby he heard the damp, insistent drip of water splashing against stone. He felt his muscles tighten as the dripping sound forced itself against his senses. Then he opened his eyes.

His first impulse was to scream out wildly in unreasoning, suffocating fear. He fought it down, struggling to sit up in the blackness, his whole mind turned in bitter, hopeless hatred at the ones who had hunted him for so long, and now had trapped him.

Why?

Why did they torture him? Why not kill him outright, have done with it? He shuddered, and struggled to his feet, staring about him in horror.

It was not a well, but a small room, circular, with little rivulets of stale water running down the granite walls. The ceiling closed low over his head, and the only source of light came from the single doorway opening into a long, low stone passageway.

Wave after wave of panic rose in Harry's throat. Each time he fought down the urge to scream, to lie down on the ground and cover his face with his hands and scream in helpless fear. How could they have known the horror that lay in his own mind, the horror of darkness, of damp slimy walls and scurrying rodents, of the clinging, stale humidity of dungeon passageways? He himself had seldom recalled it, except in his most hideous dreams, yet he had known such fear as a boy, so many years ago, and now it was all around him. They had known somehow and used it against him.

Why?

Why?

He sank down on the floor, his head in his hands, trying to think straight, to find some clue in the turmoil bubbling through his mind that would tell him what had happened.

He had started down the hallway from his room, to find Dr. Webber and tell him about the other people--

He stopped short, looked up wide-eyed. Had he been going to Dr. Webber? Had he actually decided to go? Perhaps--yes, perhaps he had, though Webber would only laugh at such a ridiculous story. But the not-men who had hunted him would not laugh; to them, it would not be funny. They knew that it was true. And they knew he knew it was true.

But why not kill him? Why this torture? Why this horrible persecution that dug into the depths of his own nightmares to haunt him?

His breath came fast and a chilly sweat broke out on his forehead. Where was he? Was this some long forgotten vault in the depths of the Old City? Or was this another place, another world, perhaps, that the not-men, with their impossible powers, had created to torture him?

His eyes sought the end of the hall, saw the turn at the end, saw the light which seemed to come from the end; and then in an instant he was running down the damp passageway, his pulse pounding at his temples, until he could hardly gasp enough breath as he ran. Finally he reached the turn in the corridor where the light was brighter, and he swung around to stare at the source of the light, a huge, burning, smoky torch which hung from the wall.

Even as he looked at it, the torch went out, shutting him into inky blackness. The only sound at first was the desperation of his own breath; then he heard little scurrying sounds around his feet, and screamed involuntarily as something sleek and four-footed jumped at his chest with snapping jaws.

Shuddering, he fought the thing off, his fingers closing on wiry fur as he caught and squeezed. The thing went limp, and suddenly melted in his hands. He heard it splash as it struck the damp ground at his feet.

What were they doing to his mind?

He screamed out in horror, and followed the echoes of his own scream as he ran down the stone corridor, blindly, slipping on the wet stone floor, falling on his knees into inches of brackish water, scraping back to his feet
with an uncontrollable convulsion of fear and loathing, only to run more--

The corridor suddenly broke into two and he stopped short. He didn't know how far, or how long, he had run, but it suddenly occurred to him that he was still alive, still safe. Only his mind was under attack, only his mind was afraid, teetering on the edge of control. And this maze of dungeon tunnels--where could such a thing exist, so perfectly outfitted to horrify him, so neatly fitting into his own pattern of childhood fears and terrors; from where could such a very individual attack on his sanity have sprung? From nowhere except....

Except from his own mind!

For an instant, he saw a flicker of light, thought he grasped the edge of a concept previously obscure to him. He stared around him, at the mist swirling down the damp, dark corridor, and thought of the rat that had melted in his hand. Suddenly, his mind was afire, searching through his experience with the strange not-men he had learned to detect, trying to remember everything he had learned and deduced about them before they began their brutal persecution.

They were men, and they looked like men, but they were different. They had other properties of mind, other capabilities that men did not have.

They were not-men. They could exist, and co-exist, two people in one frame, one person known, realized by all who saw, the other one concealed except from those who learned how to look. They could use their minds; they could rationalize correctly; they could use their curious four-dimensional knowledge to bring them to answers no three-dimensional man could reach.

But they couldn't project into men's minds!

Carefully, Harry peered down the misty tunnels. They were clever, these creatures, and powerful. Since they had discovered that he knew them, they had done their work of fear and terror on his mind skillfully. But they were limited, too; they couldn't make things happen that were not true--fantasies, illusions....

Yes, this dungeon was an illusion. It had to be.

He cursed and started down the right-hand corridor, his heart sinking. There was no such place and he knew it. He was walking in a dream, a fantasy that had no substance, that could do no more than frighten him, drive him insane; yet he must already have lost his mind to be accepting such an illusion.

Why had he delayed? Why hadn't he gone to the Hoffman Center, laid the whole story before Dr. Webber and Dr. Manelli at the very first, told them what he had found? True, they might have thought him insane, but they wouldn't have put him to torture. They might even have believed him enough to investigate what he told them, and then the cat would have been out of the bag. The tale would have been incredible, but at least his mind would have been safe.

He turned down another corridor and walked suddenly into waist-deep water, so cold it numbed his legs. He stopped again to force back the tendrils of unreasoning horror that brushed his mind. Nothing could really harm him. He would merely wait until his mind finally reached a balance again. There might be no end; it might be a ghastly trap, but he would wait.

Strangely, the mist was becoming greenish in color as it swirled toward him in the damp vaulted passageway. His eyes began watering a little and the lining of his nose started to burn. He stopped short, newly alarmed, and stared at the walls, rubbing the tears away to clear his vision. The greenish-yellow haze grew thicker, catching his eyes and burning like a thousand furies, ripping into his throat until he was choking and coughing, as though great knives sliced through his lungs.

He tried to scream, and started running, blindly. Each gasping breath was an agony as the blistering gas dug deeper and deeper into his lungs. Reason departed from him; he was screaming incoherently as he stumbled up a stony ramp, crashed into a wall, spun around and smashed blindly into another. Then something caught at his shirt.

He felt the heavy planks and pounded iron scrollwork of a huge door, and threw himself upon it, wrenching at the old latch until the door swung open with a screech of rusty hinges. He fell forward on his face, and the door swung shut behind him.

He lay face down, panting and sobbing in the stillness.

Coarse hands grasped his collar, jerking him rudely to his feet, and he opened his eyes. Across the dim, vaulted room he could see the shadowy form of a man, a big man, with a broad chest and powerful shoulders, a man whose rich voice Harry almost recognized, but whose face was deep in shadow. As Harry wiped the tears from his tortured eyes, he heard the man's voice rumble out at him:

"Perhaps you've had enough now to change your mind about telling us the truth."

Harry stared, not quite comprehending. "The--the truth?"

The man's voice was harsh, cutting across the room impatiently. "The truth, I said. The problem, you fool, what you saw, what you learned; you know perfectly well what I'm referring to. But we'll swallow no more of this silly four-dimensional superman tale, so don't bother to start it."
"I--I don't understand you. It's--it's true--" Again he tried to peer across the room. "Why are you hunting me like this? What are you trying to do to me?"

"We want the truth. We want to know what you saw."

"But--but you're what I saw. You know what I found out. I mean--" He stopped, his face going white. His hand went to his mouth, and he stared still harder. "Who are you? he whispered.

"The truth!" the man roared. "You'd better be quick, or you'll be back in the corridor."

"Webber!"

"Your last chance, Harry."

Without warning, Harry was across the room, flying across the desk, crashing into the big man's chest. With a scream of fury he fought, driving his fists into the powerful chest, wrenching at the thick, flailing arms of the startled man.

"It's you!" he screamed. "It's you that's been torturing me. It's you that's been hunting me down all this time, not the other people, you and your crowd of ghouls have been at my throat!"

He threw the big man off balance, dropped heavily on him as he fell back to the ground, glared down into the other's angry brown eyes.

And then, as though he had never been there at all, the big man vanished, and Harry sat back on the floor, his whole body shaking with frustrated sobs as his mind twisted in anguish.

He had been wrong, completely wrong, ever since he had discovered the not-men. Because he had thought they had been the ones who hunted and tortured him for so long. And now he knew how far he had been wrong. For the face of the shadowy man, the man behind the nightmare he was living, was the face of Dr. George Webber.

* * * * *

"You're a fool," said Dr. Manelli sharply, as he turned away from the sleeping figure on the bed to face the older man. "Of all the ridiculous things, to let him connect you with this!" The young doctor turned abruptly and sank down in a chair, glowering at Dr. Webber. "You haven't gotten to first base yet, but you've just given Scott enough evidence to free himself from integrator control altogether, if he gives it any thought. But I suppose you realize that."

"Nonsense," Dr. Webber retorted. "He had enough information to do that when we first started. I'm no more worried now than I was then. I'm sure he doesn't know enough about the psycho-integrator to be able voluntarily to control the patient-operator relationship to any degree. Oh, no, he's safe enough. But you've missed the whole point of that little interview." Dr. Webber grinned at Manelli.

"I'm afraid I have. It looked to me like useless bravado."

"The persecution, man, the persecution! He's shifted his sights! Before that interview, the not-men were torturing him, remember? Because they were afraid he would report his findings to me, of course. But now it's I that's against him." The grin widened. "You see where that leads?"

"You're talking almost as though you believed this story about a different sort of people among us."

Dr. Webber shrugged. "Perhaps I do."

"Oh, come now, George."

Dr. Webber's eyebrows went up and the grin disappeared from his face.

"Harry Scott believes it, Frank. We mustn't forget that, or miss its significance. Before Harry started this investigation of his, he wouldn't have paid any attention to such nonsense. But he believes it now."

"But Harry Scott is insane. You said it yourself."

"Ah, yes," said Dr. Webber. "Insane. Just like the others who started to get somewhere along those lines of investigation. Try to analyze the growing incidence of insanity in the population and you yourself go insane. You've got to be crazy to be a psychiatrist. It's an old joke, but it isn't very funny any more. And it's too much for coincidence."

"And then consider the nature of the insanity--a full-blown paranoia--oh, it's amazing. A cunning organization of men who are not-men, a regular fairy story, all straight from Harry Scott's agile young mind. But now it's we who are persecuting him, and he still believes his fairy tale."

"So?"

Dr. Webber's eyes flashed angrily. "It's too neat, Frank. It's clever, and it's powerful, whatever we've run up against. But I think we've got an ace in the hole. We have Harry Scott."

"And you really think he'll lead us somewhere?"

Dr. Webber laughed. "That door I spoke of that Harry peeked through, I think he'll go back to it again. I think he's started to open that door already. And this time I'm going to follow him through."

4

It seemed incredible, yet Harry Scott knew he had not been mistaken. It had been Dr. Webber's face he had
seen, a face no one could forget, an unmistakable face. And that meant that it had been Dr. Webber who had been persecuting him.

But why? He had been going to report to Webber when he had run into that golden field in the rooming-house hallway. And suddenly things had changed.

Harry felt a chill reaching to his fingers and toes. Yes, something had changed, all right. The attack on him had suddenly become butcheroius, cruel, sneaking into his mind somehow to use his most dreaded nightmares against him. There was no telling what new horrors might be waiting for him. But he knew that he would lose his mind unless he could find an escape.

He was on his feet, his heart pounding. He had to get out of here, wherever he was. He had to get back to town, back to the city, back to where people were. If he could find a place to hide, a place where he could rest, he could try to think his way out of this ridiculous maze, or at least try to understand it.

He wrenched at the door to the passageway, started through, and smashed face-up against a solid brick wall.

He cried out and jumped back from the wall. Blood trickled from his nose. The door was walled up, the mortar dry and hard.

Frantically, he glanced around the room. There were no other doors, only the row of tiny windows around the ceiling of the room, pale, ghostly squares of light.

He pulled the chair over to the windows, peered out through the cobwebbed openings to the corridor beyond.

It was not the same hallway as before, but an old, dirty building corridor, incredibly aged, with bricks sagging away from the walls. At the end he could see stairs, and even the faintest hint of sunlight coming from above.

Wildly, he tore at the masonry of the window, chipping away at the soggy mortar with his fingers until he could squeeze through the opening. He fell to the floor of the corridor outside.

It was much colder and the silence was no longer so intense. He seemed to feel, rather than hear, the surging power, the rumble of many machines, the little, almost palpable vibrations from far above him.

He started in a dead run down the musty corridor to the stairs and began to climb them, almost stumbling over himself in his eagerness.

After several flights, the brick walls gave way to cleaner plastic, and suddenly a brightly lighted corridor stretched before him.

Panting from the climb, Harry ran down the corridor to the end, wrenched open a door, and looked out anxiously.

He was almost stunned by the bright light. At first he couldn't orient himself as he stared down at the metal ramp, the moving strips of glowing metal carrying the throngs of people, sliding along the thoroughfare before him, unaware of him watching, unaware of any change from the usual. The towering buildings before him rose to unbelievable heights, bathed in ever-changing rainbow colors, and he felt his pulse thumping in his temples as he gaped.

He was in the New City, of that there was no doubt. This was the part of the great metropolis which had been built again since the devastating war that had nearly wiped the city from the Earth a decade before. These were the moving streets, the beautiful residential apartments, following the modern neo-functional patterns and participational design which had completely altered the pattern of city living. The Old City still remained, of course--the slums, the tenements, the skid-rows of the metropolis--but this was the teeming heart of the city, a new home for men to live in.

And this was the stronghold where the not-men could be found, too. The thought cut through Harry's mind, sending a tremor up his spine. He had found them here; he had uncovered his first clues here, and discovered them; and even now his mind was filled with the horrible, paralyzing fear he had felt that first night when he had made the discovery. Yet he knew now that he dared not go back where he had come from.

At least he could understand why the not-men might have feared and persecuted him, but he could not understand the horrible assault that Dr. Webber had unleashed. And somehow he found Dr. Webber's attack infinitely more frightening.

He seemed to be safe here, though, at least for the moment.

Quickly he moved down onto the nearest moving sidewalk heading toward the living section of the New City. He knew where he could go there, where he could lock himself in, a place where he could think, possibly find a way to fight off Dr. Webber's attack of nightmares.

He settled back on a bench on the moving sidewalk, watching the city slide past him for several minutes before he noticed the curious shadow-form which seemed to whisk out of his field of vision every time he looked.

They were following him again! He looked around wildly as the sidewalk moved swiftly through the cool evening air. Far above, he could see the shimmering, iridescent screen that still stood to protect the New City from the devastating virus attacks which might again strike down from the skies without warning. Far ahead he could see the magnificent "bridge" formed by the sidewalk crossing over to the apartment area, where the thousands who
worked in the New City were returning to their homes.

Someone was still following him.

Presently he heard the sound, so close to his ear he jumped, yet so small he could hardly identify it as a human voice. "What was it you found, Harry? What did you discover? Better tell, better tell."

He saw the rift in the moving sidewalk coming, far ahead, a great, gaping rent in the metal fabric of the swiftly moving escalator, as if a huge blade were slicing it down the middle. Harry's hand went to his mouth, choking back a scream as the hole moved with incredible rapidity down the center of the strip, swallowing up whole rows of the seats, moving straight toward his own.

He glanced in fright over the side just as the sidewalk moved out onto the "bridge," and he gasped as he saw the towering canyons of buildings fall far below, saw the seats tumble end over end, heard the sounds of screaming blend into the roar of air by his ears.

Then the rift screamed by him with a demoniac whine and he sank back onto his bench, gasping as the two cloven halves of the strip clanged back together again.

He stared at the people around him on the strip and they stared back at him, mildly, unperturbed, and returned to their evening papers as the strip passed through the first local station on the other side of the "bridge."

Harry Scott sprang to his feet, moving swiftly across the slower strips for the exit channels. He noted the station stop vaguely, but his only thought now was speed, desperate speed, fear-driven speed to put into action the plan that had suddenly burst in his mind.

He knew that he had reached his limit. He had come to a point beyond which he couldn't fight alone.

Somehow, Webber had burrowed into his brain, laid his mind open to attacks of nightmare and madness that he could never hope to fight. Facing this alone, he would lose his mind. His only hope was to go for help to the ones he feared only slightly less, the ones who had minds capable of fighting back for him.

He crossed under the moveable sidewalks and boarded the one going back into the heart of the city. Somewhere there, he hoped, he would find the help he needed. Somewhere back in that city were men he had discovered who were men and something more.

* * * * *

Frank Manelli carefully took the blood pressure of the sleeping figure on the bed; then turned to the other man. "He'll be dead soon," he snapped. "Another few minutes now is all it'll take. Just a few more."

"Absurd. There's nothing in these stimuli that can kill him." George Webber sat tense, his eyes fixed on the pale fluctuating screen near the head of the bed.

"His own mind can kill him! He's on the run now; you've broken him loose from his nice safe paranoia. His mind is retreating, running back to some other delusions. It's escaping to the safety his fantasy people can afford him, these not-men he thinks about."

"Yes, yes," agreed Dr. Webber, his eyes eager. "Oh, he's on the run now."

"But what will he do when he finds there aren't any 'not-men' to save him? What will he do then?"

Webber looked up, frowning and grim. "Then we'll know what he found behind the dark door that he opened, that's what."

"No, you're wrong! He'll die. He'll find nothing and the shock will kill him. My God, Webber, you can't tamper with a man's mind like this and hope to save his life! You're obsessed; you've always been obsessed by this impossible search for something in our society, some undiscovered factor to account for the mental illness, the divergent minds, but you can't kill a man to trace it down!"

"It's too neat," said Webber. "He comes back to tell us the truth, and we call him insane. We say he's paranoid, throw him in restraint, place him in an asylum; and we never know what he found. The truth is too incredible; when we hear it, it must be insanity we're hearing."

The big doctor laughed, jabbing his thumb at the screen. "This isn't insanity we're seeing. Oh, no, this is the answer we're following. I won't stop now. I've waited too long for this show."

"Well, I say stop it while he's still alive."

Dr. Webber's eyes were deadly. "Get out, Frank," he said softly. "I'm not stopping now."

His eyes returned to the screen, to the bobbing figure that the psycho-integrator traced on the fluorescent background. Twenty years of search had led him here, and now he knew the end was at hand.

It was a wild, nightmarish journey. At every step, Harry's senses betrayed him: his wrist watch turned into a brilliant blue-green snake that snapped at his wrist; the air was full of snarling creatures that threatened him at every step. But he fought them off, knowing that they would harm him far less than panic would. He had no idea where to hunt, nor whom to try to reach, but he knew they were there in the New City, and somehow he knew they would help him, if only he could find them.
He got off the moving strip as soon as the lights of the center of the city were clear below, and stepped into the self-operated lift that sped down to ground level. From the elevator, he moved on to one of the long, honeycombed concourses, filled with passing shoppers who stared at the colorful, enticing three-dimensional displays.

At one of the intersections ahead, he spotted a visiphone station, and dropped onto the little seat before the screen. There had been a number, if only he could recall it. But as he started to dial, the silvery screen shattered into a thousand sparkling glass chips, showering the floor with crystal and sparks.

Harry cursed, grabbed the hand instrument, and jangled frantically for the operator. Before she could answer, the instrument grew warm in his hand, then hot and soft, like wax. Slowly, it melted and ran down his arm.

He bolted out into the stream of people, trying desperately to draw some comfort from the crowd around him. He felt utterly alone; he had to contact the not-men who were in the city, warn them, before they spotted him, of the attack he carried with him. If he were leading his pursuer, he could expect no mercy from the ones whose help he sought. He knew the lengths to which they would go to remain undetected in the society around them. Yet he had to find them.

In the distance, he saw a figure waiting, back against one of the show windows. Harry stopped short, ducked into a doorway, and peered out fearfully. Their eyes locked for an instant; then the figure moved on. Harry felt a jolt of horror surge through him. Dr. Webber hunting him in person!

He ducked out of the doorway, turned and ran madly in the opposite direction, searching for an up escalator he could catch. Behind him he heard shots, heard the angry whine of bullets past his ear.

He breathed in great, gasping sobs as he found an almost empty escalator, and bounded up it four steps at a time. Below, he could see Webber coming too, his broad shoulders forcing their way relentlessly through the mill of people.

Panting, Harry reached the top, checked his location against a wall map, and started down the long ramp which led toward the building he had tried to call.

Another shot broke out behind him. The wall alongside powderized away, leaving a gaping hole. On impulse, he leaped into the hole, running through to the rear of the building as the weakened wall swayed and crumbled into a heap of rubble just as Webber reached the place Harry had entered.

Harry breathed a sigh of relief and raced up the stairs of the building to reach a ramp on another level. He turned his eyes toward the tall building at the end of the concourse. There he could hide and relax and try, somehow, to make a contact.

Someone fell into step beside him and took his arm gently but firmly. Harry jerked away, turning terrified eyes to the one who had joined him.

"Quiet," said the man, steering him over toward the edge of the concourse. "Not a sound. You'll be all right."

Harry felt a tremor pass through his mind, the barest touching of mental fingertips, a recognition that sent a surge of eager blood through his heart.

He stopped short, facing the man. "I'm being followed," he gasped. "You can't take me anywhere you don't want Webber to follow, or you'll be in terrible danger."

The stranger shrugged and smiled briefly. "You're not here. You're in a psycho-integrator. It can hurt you, if you let it. But it can't hurt me." He stepped up his pace slightly, and in a moment they turned abruptly into a darkened cul-de-sac.

Suddenly, they were moving through the wall of the building into the brilliantly lit lobby of the tall building. Harry gasped, but the stranger led him without a sound toward the elevator, stepped aboard with him, and sped upward, the silence broken only by the whish-whish-whish of the passing floors. Finally they stepped out into a quiet corridor and down through a small office door.

A man sat behind the desk in the office, his face quiet, his eyes very wide and dark. He hardly glanced at Harry, but turned his eyes to the other man.

"Set?" he asked.

"Couldn't miss now."

The man nodded and looked at last at Harry. "You're upset," he murmured. "What's bothering you?"

"Webber," said Harry hoarsely. "He's following me here. He'll spot you. I tried to warn you before I came, but I couldn't."

The man at the desk smiled. "Webber again, eh? Our old friend Webber. That's all right. Webber's at the end of his tether. There's nothing he can do to stop us. He's trying to attack with force, and he fails to realize that time and thought are on our side. The time when force would have succeeded against us is long past. But now there are many of us, almost as many as not."

Harry stared shrewdly at the man behind the desk. "Then why are you so afraid of Webber?" he asked.

"Afraid?"
"You know you are. Long ago you threatened me, if I reported to him. You watched me, played with me. Why are you afraid of him?"

The man sighed. "Webber is premature. We are stalling for time, that's all. We wait. We have grown from so very few, back in the 1940s and 50s, but the time for quiet usurpation of power has not quite arrived. But men like Webber force our hand, discover us, try to expose us."

Harry Scott's face was white, his hands shaking. "And what do you do to them?"

"We--deal with them."

"And those like me?"

The man smiled lopsidedly. "Those like Paulus and Wineberg and the rest--they're happy, really, like little children. But one like you is so much more useful." He pointed almost apologetically to the small screen on his desk.

Harry looked at it, realization dawning. He watched the huge, broad-shouldered figure moving down the hallway toward the door.

"Webber was dangerous to you?"

"Unbelievably dangerous. So dangerous we would use any means to trap him."

Suddenly the door burst open and there stood Webber, a triumphant Webber, face flushed, eyes wide, as he stared at the man behind the desk.

The man smiled back and said, "Come on in, George. We've been waiting for you."

Webber stepped through the door. "Manelli, you fool!"

There was a blinding flash as he crossed the threshold. A faint crackle of sound reached Harry's ears; then the world blacked out....

* * * * *

It might have been minutes, or hours, or days. The man who had been behind the desk was leaning over Harry, smiling down at him, gently bandaging the trephine wounds at his temples.

"Gently," he said, as Harry tried to sit up. "Don't try to move. You've been through a rough time."

Harry peered up at him. "You're--not Dr. Webber."

"No. I'm Dr. Manelli. Dr. Webber's been called away--an accident. He'll be some time recovering. I'll be taking care of you."

Vaguely, Harry was aware that something was peculiar, something not quite as it should be. The answer slowly dawned on him.

"The statistical analysis!" he exclaimed. "I was supposed to get some data from Dr. Webber about an analysis, something about rising insanity rates."

Dr. Manelli looked blank. "Insanity rates? You must be mistaken. You were brought here for an immunity examination, nothing more. But you can check with Dr. Webber, when he gets back."

6

George Webber sat in the little room, trembling, listening, his eyes wide in the thick, misty darkness. He knew it would be a matter of time now. He couldn't run much farther. He hadn't seen them, true. Oh, they had been very clever, but they thought they were dealing with a fool, and they weren't. He knew they'd been following him; he'd known it for a long time now.

It was just as he had been telling the man downstairs the night before: they were everywhere--your neighbor upstairs, the butcher on the corner, your own son or daughter, maybe even the man you were talking to--everywhere!

And of course he had to warn as many people as he possibly could before they caught him, throttled him off, as they had threatened to if he talked to anyone.

If only the people would listen to him when he told them how cleverly it was all planned, how it would only be a matter of months, maybe only weeks or days before the change would happen, and the world would be quietly, silently taken over by the other people, the different people who could walk through walls and think in impossibly complex channels. And no one would know the difference, because business would go on as usual.

He shivered, sinking down lower on the bed. If only people would listen to him--

It wouldn't be long now. He had heard the stealthy footsteps on the landing below his room some time ago. This was the night they had chosen to make good their threats, to choke off his dangerous voice once and for all. There were footsteps on the stairs now, growing louder.

Wildly he glanced around the room as the steps moved down the hall toward his door. He rushed to the window, threw up the sash and screamed hoarsely to the silent street below: "Look out! They're here, all around us! They're planning to take over! Look out! Look out!"

The door burst open and there were two men moving toward him, grim-faced, dressed in white; tall, strong men with sad faces and strong arms.

One was saying, "Better come quietly, mister. No need to wake up the whole town."
The sun warmed Mark Howell's back pleasantly. Underfoot, the mosslike stuff was soft and yielding, and there was a fragrance in the air unlike anything he had ever smelled. He was going to like this planet; he knew it. The question was, how would it, and its people, like him? He watched the little figures advancing across the fields from the mound, with the village out of sight on the other end of it and the combat-car circling lazily on contragravity above.

Major Luis Gofredo, the Marine officer, spoke without lowering his binoculars:
"They have a tubular thing about twelve feet long; six of them are carrying it on poles, three to a side, and a couple more are walking behind it. Mark, do you think it could be a cannon?"

So far, he didn't know enough to have an opinion, and said so, adding:
"What I saw of the village in the screen from the car, it looked pretty primitive. Of course, gunpowder's one of those things a primitive people could discover by accident, if the ingredients were available."

"We won't take any chances, then."
"You think they're hostile? I was hoping they were coming out to parley with us."

That was Paul Meillard. He had a right to be anxious; his whole future in the Colonial Office would be made or ruined by what was going to happen here.

The joint Space Navy-Colonial Office expedition was looking for new planets suitable for colonization; they had been out, now, for four years, which was close to maximum for an exploring expedition. They had entered eleven systems, and made landings on eight planets. Three had been reasonably close to Terra-type. There had been Fafnir; conditions there would correspond to Terra during the Cretaceous Period, but any Cretaceous dinosaur would have been cute and cuddly to the things on Fafnir. Then there had been Imhotep; in twenty or thirty thousand years, it would be a fine planet, but at present it was undergoing an extensive glaciation. And Irminsul, covered with forests of gigantic trees; it would have been fine except for the fauna, which was nasty, especially a race of subsapient near-humanoids who had just gotten as far as clubs and coup-de-poing axes. Contact with them had entailed heavy ammunition expenditure, with two men and a woman killed and a dozen injured. He'd had a limp, himself, for a while as a result.

As for the other five, one had been an all-out hell-planet, and the rest had been the sort that get colonized by irreconcilable minority-groups who want to get away from everybody else. The Colonial Office wouldn't even consider any of them.

Then they had found this one, third of a GO-star, eighty million miles from primary, less axial inclination than Terra, which would mean a more uniform year-round temperature, and about half land surface. On the evidence of a couple of sneak landings for specimens, the biochemistry was identical with Terra's and the organic matter was edible. It was the sort of planet every explorer dreams of finding, except for one thing.

It was inhabited by a sapient humanoid race, and some of them were civilized enough to put it in Class V, and Colonial Office doctrine on Class V planets was rigid. Friendly relations with the natives had to be established, and permission to settle had to be guaranteed in a treaty of some sort with somebody more or less authorized to make one.

If Paul Meillard could accomplish that, he had it made. He would stay on with forty or fifty of the ship's company to make preparations. In a year a couple of ships would come out from Terra, with a thousand colonists, and a battalion or so of Federation troops, to protect them from the natives and vice versa. Meillard would automatically be appointed governor-general.

But if he failed, he was through. Not out--just through. When he got back to Terra, he would be promoted to some home office position at slightly higher base pay but without the three hundred per cent extraterrestrial bonus, and he would vegetate there till he retired. Every time his name came up, somebody would say, "Oh, yes; he flubbed the contact on Whatzit."

It wouldn't do the rest of them any good, either. There would always be the suspicion that they had contributed to the failure.

* * * * *
Bwaaa-waaa-waaahn!

The wavering sound hung for an instant in the air. A few seconds later, it was repeated, then repeated again.

"Our cannon's a horn," Gofredo said. "I can't see how they're blowing it, though."

There was a stir to right and left, among the Marines deployed in a crescent line on either side of the contact team; a metallic clatter as weapons were checked. A shadow fell in front of them as a combat-car moved into position above.

"What do you suppose it means?" Meillard wondered.

"Terrans, go home." He drew a frown from Meillard with the suggestion. "Maybe it's supposed to intimidate us."

"They're probably doing it to encourage themselves," Anna de Jong, the psychologist, said. "I'll bet they're really scared stiff."

"I see how they're blowing it," Gofredo said. "The man who's walking behind it has a hand-bellows." He raised his voice. "Fix bayonets! These people don't know anything about rifles, but they know what spears are. They have some of their own."

So they had. The six who walked in the lead were unarmed, unless the thing one of them carried was a spear. So, it seemed, were the horn-bearers. Behind them, however, in an open-order skirmish-line, came fifty-odd with weapons. Most of them had spears, the points glinting redly. Bronze, with a high copper content. A few had bows. They came slowly; details became more plainly visible.

The leader wore a long yellow robe; the thing in his hand was a bronze-headed staff. Three of his companions also wore robes; the other two were bare-legged in short tunics. The horn-bearers wore either robes or tunics; the spearmen and bowmen behind either wore tunics or were naked except for breechclouts. All wore sandals. They were red-brown in color, completely hairless; they had long necks, almost chinless lower jaws, and fleshy, beaklike noses that gave them an avian appearance which was heightened by red crests, like roosters' combs, on the tops of their heads.

"Well, aren't they something to see?" Lillian Ransby, the linguist asked.

"I wonder how we look to them," Paul Meillard said.

That was something to wonder about, too. The differences between one and another of the Terrans must puzzle them. Paul Meillard, as close to being a pure Negro as anybody in the Seventh Century of the Atomic Era was to being pure anything. Lillian Ransby, almost ash-blond. Major Gofredo, barely over the minimum Service height requirement; his name was Old Terran Spanish, but his ancestry must have been Polynesian, Amerind and Mongolian. Karl Dorver, the sociographer, six feet six, with red hair. Bennet Fayon, the biologist and physiologist, plump, pink-faced and balding. Willi Schallenmacher, with a bushy black beard....

They didn't have any ears, he noticed, and then he was taking stock of the things they wore and carried. Belts, with pouches, and knives with flat bronze blades and riveted handles. Three of the delegation had small flutes hung by cords around their necks, and a fourth had a reed Pan-pipe. No shields, and no swords; that was good. Swords and shields mean organized warfare, possibly a warrior-caste. This crowd weren't warriors. The spearmen and bowmen weren't arrayed for battle, but for a drive-hunt, with the bows behind the spears to stop anything that broke through the line.

"All right; let's go meet them." The querulous, uncertain note was gone from Meillard's voice; he knew what to do and how to do it.

Gofredo called to the Marines to stand fast. Then they were advancing to meet the natives, and when they were twenty feet apart, both groups halted. The horn stopped blowing. The one in the yellow robe lifted his staff and said something that sounded like, "Tweedle-eedle-oodly-eenk."

The horn, he saw, was made of strips of leather, wound spirally and coated with some kind of varnish.

Everything these people had was carefully and finely made. An old culture, but a static one. Probably tradition-bound as all get-out.

Meillard was raising his hands; solemnly he addressed the natives:

"'Twas brillig and the slithy toves were whooping it up in the Malemute Saloon, and the kid that handled the music box did gyre and gimble in the wabe, and back of the bar in a solo game all mimsy were the borogoves, and the mome raths outgab the lady that's known as Lou."

That was supposed to show them that we, too, have a spoken language, to prove that their language and ours were mutually incomprehensible, and to demonstrate the need for devising a means of communication. At least that was what the book said. It demonstrated nothing of the sort to this crowd. It scared them. The dignitary with the staff twittered excitedly. One of his companions agreed with him at length. Another started to reach for his knife, then remembered his manners. The bellowsman pumped a few blasts on the horn.
"What do you think of the language?" he asked Lillian.
"They all sound that bad, when you first hear them. Give them a few seconds, and then we'll have Phase Two."
When the gibbering and skreeking began to fall off, she stepped forward. Lillian was, herself, a good test of how human aliens were; this gang weren't human enough to whistle at her. She touched herself on the breast. "Me," she said.

The natives seemed shocked. She repeated the gesture and the word, then turned and addressed Paul Meillard. "You."
"Me," Meillard said, pointing to himself. Then he said, "You," to Luis Gofredo. It went around the contact team; when it came to him, he returned it to point of origin.
"I don't think they get it at all," he added in a whisper.
"They ought to," Lillian said. "Every language has a word for self and a word for person-addressed."
"Well, look at them," Karl Dorver invited. "Six different opinions about what we mean, and now the band's starting an argument of their own."
"Phase Two-A," Lillian said firmly, stepping forward. She pointed to herself. "Me--Lillian Ransby. Lillian Ransby--me name. You--name?"

"Bwoooo!" the spokesman screamed in horror, clutching his staff as though to shield it from profanation. The others howled like a hound-pack at a full moon, except one of the short-tunic boys, who was slapping himself on the head with both hands and yodeling. The horn-crew hastily swung their piece around at the Terrans, pumping frantically.
"What do you suppose I said?" Lillian asked.
"Oh, something like, 'Curse your gods, death to your king, and spit in your mother's face,' I suppose."
"Let me try it," Gofredo said.

The little Marine major went through the same routine. At his first word, the uproar stopped; before he was through, the natives' faces were sagging and crumbling into expressions of utter and heartbroken grief.
"It's not as bad as all that, is it?" he said. "You try it, Mark."
"Me ... Mark ... Howell...." They looked bewildered.
"Let's try objects, and play-acting," Lillian suggested. "They're farmers; they ought to have a word for water."

They spent almost an hour at it. They poured out two gallons of water, pretended to be thirsty, gave each other drinks. The natives simply couldn't agree on the word, in their own language, for water. That or else they missed the point of the whole act. They tried fire, next. The efficiency of a steel hatchet was impressive, and so was the sudden flame of a pocket-lighter, but no word for fire emerged, either.
"Ah, to Nifflheim with it!" Luis Gofredo cried in exasperation. "We're getting nowhere at five times light speed. Give them their presents and send them home, Paul."

"Sheath-knives; they'll have to be shown how sharp they are," he suggested. "Red bandannas. And costume jewelry."

"How about something to eat, Bennet?" Meillard asked Fayon.
"Extee Three, and C-H trade candy," Fayon said. Field Ration, Extraterrestrial Service, Type Three, could be eaten by anything with a carbon-hydrogen metabolism, and so could the trade candy. "Nothing else, though, till we have some idea what goes on inside them."

Dorver thought the six members of the delegation would be persons of special consequence, and should have something extra. That was probably so. Dorver was as quick to pick up clues to an alien social order as he was, himself, to deduce a culture pattern from a few artifacts. He and Lillian went back to the landing craft to collect the presents.

Everybody, horn-detail, armed guard and all, got one ten-inch bowie knife and sheath, a red bandanna neckcloth, and a piece of flashy junk jewelry. The (town council? prominent citizens? or what?) also received a colored table-spread apiece; these were draped over their shoulders and fastened with two-inch plastic pins advertising the candidacy of somebody for President of the Federation Member Republic of Venus a couple of elections ago. They all looked woebegone about it; that would be their expression of joy. Different type nerves and different facial musculature, Fayon thought. As soon as they sampled the Extee Three and candy, they looked crushed under all the sorrows of the galaxy.

By pantomime and pointing to the sun, Meillard managed to inform them that the next day, when the sun was in the same position, the Terrans would visit their village, bringing more gifts. The natives were quite agreeable, but Meillard was disgruntled that he had to use sign-talk. The natives started off toward the village on the mound, munching Extee Three and trying out their new knives. This time tomorrow, half of them would have bandaged thumbs.
The Marine riflemen and submachine-gunners were coming in, slinging their weapons and lighting cigarettes. A couple of Navy technicians were getting a snooper—a thing shaped like a short-tailed tadpole, six feet long by three at the widest, fitted with visible-light and infra-red screen pickups and crammed with detection instruments—ready to relieve the combat car over the village. The contact team crowded into the Number One landing craft, which had been fitted out as a temporary headquarters. Prefab-hut elements were already being unloaded from the other craft.

Everybody felt that a drink was in order, even if it was two hours short of cocktail time. They carried bottles and glasses and ice to the front of the landing craft and sat down in front of the battery of view and communication screens. The central screen was a two-way, tuned to one in the officers' lounge aboard the Hubert Penrose, two hundred miles above. In it, also provided with drinks, were Captain Guy Vindinho and two other Navy officers, and a Marine captain in shipboard blues. Like Gofredo, Vindinho must have gotten into the Service on tiptoe; he had a bald dome and a red beard, and he always looked as though he were gloating because nobody knew that his name was really Rumplestiltskin. He had been watching the contact by screen. He lifted his glass toward Meillard.

"Over the hump, Paul?"

Meillard raised his drink to Vindinho. "Over the first one. There's a whole string of them ahead. At least, we sent them away happy. I hope."

"You're going to make permanent camp where you are now?" one of the other officers asked. Lieutenant-Commander Dave Questell; ground engineering and construction officer. "What do you need?"

There were two viewscreens from pickups aboard the 2500-foot battle cruiser. One, at ten-power magnification, gave a maplike view of the broad valley and the uplands and mountain foothills to the south. It was only by tracing the course of the main river and its tributaries that they could find the tiny spot of the native village, and they couldn't see the landing craft at all. The other, at a hundred power, showed the oblong mound, with the village on its flat top, little dots around a circular central plaza. They could see the two turtle-shaped landing-craft, and the combat car, that had been circling over the mound, landing beside them, and, sometimes, a glint of sunlight from the snooper that had taken its place.

The snooper was also transmitting in, to another screen, from two hundred feet above the village. From the sound outlet came an incessant gibber of native voices. There were over a hundred houses, all small and square, with pyramidal roofs. On the end of the mound toward the Terran camp, animals of at least four different species were crowded, cattle that had been herded up from the meadows at the first alarm. The open circle in the middle of the village was crowded, and more natives lined the low palisade along the edge of the mound.

"Well, we're going to stay here till we learn the language," Meillard was saying. "This is the best place for it. It's completely isolated, forests on both sides, and seventy miles to the nearest other village. If we're careful, we can stay here as long as we want to and nobody'll find out about us. Then, after we can talk with these people, we'll go to the big town."

The big town was two hundred and fifty miles down the valley, at the forks of the main river, a veritable metropolis of almost three thousand people. That was where the treaty would have to be negotiated.

[Illustration: "... But no two of them speak the same language!"]

"You'll want more huts. You'll want a water tank, and a pipeline to that stream below you, and a pump," Questell said. "You think a month?"

Meillard looked at Lillian Ransby. "What do you think?"

"Poodly-doodly-odoody-foodle," she said. "You saw how far we didn't get this afternoon. All we found out was that none of the standard procedures work at all. She made a tossing gesture over her shoulder. "There goes the book; we have to do it off the cuff from here."

"Suppose we make another landing, back in the mountains, say two or three hundred miles south of you," Vindinho said. "It's not right to keep the rest aboard two hundred miles off planet, and you won't be wanting liberty parties coming down where you are."

"The country over there looks uninhabited," Meillard said. "No villages, anyhow. That wouldn't hurt, at all."

"Well, it'll suit me," Charley Loughran, the xeno-naturalist, said. "I want a chance to study the life-forms in a state of nature."

Vindinho nodded. "Luis, do you anticipate any trouble with this crowd here?" he asked.

"How about it, Mark? What do they look like to you? Warlike?"

"No. He stated the opinion he had formed. "I had a close look at their weapons when they came in for their presents. Hunting arms. Most of the spears have cross-guards, usually wooden, lashed on, to prevent a wounded animal from running up the spear-shaft at the hunter. They made boar-spears like that on Terra a thousand years ago."

Maybe they have to fight raiding parties from the hills once in a while, but not often enough for them to develop special fighting weapons or techniques."

"Their village is fortified," Meillard mentioned.

"I question that," Gofredo differed. "There won't be more than a total of five hundred there; call that a fighting strength of two hundred, to defend a twenty-five-hundred-meter perimeter, with woodchoppers' axes and bows and spears. If you notice, there's no wall around the village itself. That palisade is just a fence."

"Why would they mound the village up?" Questell, in the screen wondered. "You don't think the river gets up that high, do you? Because if it does--"

Schallennacher shook his head. "There just isn't enough watershed, and there's too much valley. I'll be very much surprised if that stream, there"--he nodded at the hundred-power screen--"ever gets more than six inches over the bank."

"I don't know what those houses are built of. This is all alluvial country; building stone would be almost unobtainable. I don't see anything like a brick kiln. I don't see any evidence of irrigation, either, so there must be plenty of rainfall. If they use adobe, or sun-dried brick, houses would start to crumble in a few years, and they would be pulled down and the rubble shoved aside to make room for a new house. The village has been rising on its own ruins, probably shifting back and forth from one end of that mound to the other."

"If that's it, they've been there a long time," Karl Dorver said. "And how far have they advanced?"

"Early bronze; I'll bet they still use a lot of stone implements. Pre-dynastic Egypt, or very early Tigris-Euphrates, in Terran terms. I can't see any evidence that they have the wheel. They have draft animals; when we were coming down, I saw a few of them pulling pole travoises. I'd say they've been farming for a long time. They have quite a diversity of crops, and I suspect that they have some idea of crop-rotation. I'm amazed at their musical instruments; they seem to have put more skill into making them than anything else. I'm going to take a jeep, while they're all in the village, and have a look around the fields, now."

Charley Loughran went along for specimens, and, for the ride, Lillian Ransby. Most of his guesses, he found, had been correct. He found a number of pole travoises, from which the animals had been unhitched in the first panic when the landing craft had been coming down. Some of them had big baskets permanently attached. There were drag-marks everywhere in the soft ground, but not a single wheel track. He found one plow, cunningly put together with wooden pegs and rawhide lashings; the point was stone, and it would only score a narrow groove, not a proper furrow. It was, however, fitted with a big bronze ring to which a draft animal could be hitched. Most of the cultivation seemed to have been done with spades and hoes. He found a couple of each, bronze, cast flat in an open-top mold. They hadn't learned to make composite molds.

There was an even wider variety of crops than he had expected: two cereals, a number of different root-plants, and a lot of different legumes, and things like tomatoes and pumpkins.

"Bet these people had a pretty good life, here--before the Terrans came," Charley observed.

"Don't say that in front of Paul," Lillian warned. "He has enough to worry about now, without starting him on whether we'll do these people more harm than good."

Two more landing craft had come down from the Hubert Penrose; they found Dave Questell superintending the unloading of more prefab-huts, and two were already up that had been brought down with the first landing.

A name for the planet had also arrived.

"Svantovit," Karl Dorver told him. "Principal god of the Baltic Slavs, about three thousand years ago. Guy Vindinho dug it out of the 'Encyclopedia of Mythology.' Svantovit was represented as holding a bow in one hand and a horn in the other."

"Well, that fits. What will we call the natives; Svantovitians, or Svantovese?"

"Well, Paul wanted to call them Svantovese, but Luis persuaded him to call them Svants. He said everybody'd call them that, anyhow, so we might as well make it official from the start."

"We can call the language Svantovese," Lillian decided. "After dinner, I am going to start playing back recordings and running off audiovisuals. I will be so happy to know that I have a name for what I'm studying. Probably be all I will know."

* * * * *

After dinner, he and Karl and Paul went into a huddle on what sort of gifts to give the natives, and the advisability of trading with them, and for what. Nothing too far in advance of their present culture level. Wheels; they could be made in the fabricating shop aboard the ship.

"You know, it's odd," Karl Dorver said. "These people here have never seen a wheel, and, except in documentary or historical-drama films, neither have a lot of Terrans."

That was true. As a means of transportation, the wheel had been completely obsolete since the development of contragravity, six centuries ago. Well, a lot of Terrans in the Year Zero had never seen a suit of armor, or an
harquebus, or even a tinder box or a spinning wheel.

Wheelbarrows; now there was something they'd find useful. He screened Max Milzer, in charge of the fabricating and repair shops on the ship. Max had never even heard of a wheelbarrow.

"I can make them up, Mark; better send me some drawings, though. Did you just invent it?"

"As far as I know, a man named Leonardo da Vinci invented it, in the Sixth Century Pre-Atomic. How soon can you get me half a dozen of them?"

"Well, let's see. Welded sheet metal, and pipe for the frame and handles. I'll have some of them for you by noon tomorrow. Now, about hoes; how tall are these people, and how long are their arms, and how far can they stoop over?"

They were all up late, that night. So were the Svants; there was a fire burning in the middle of the village, and watch-fires along the edge of the mound. Luis Gofredo was just as distrustful of them as they were of the Terrans; he kept the camp lighted, a strong guard on the alert, and the area of darkness beyond infra red lighted and covered by photoelectric sentries on the ground and snipers in the air. Like Paul Meillard, Luis Gofredo was a worrier and a pessimist. Everything happened for the worst in this worst of all possible galaxies, and if anything could conceivably go wrong, it infallibly would. That was probably why he was still alive and had never had a command massacred.

The wheelbarrows, four of them, came down from the ship by midmorning. With them came a grindstone, a couple of crosscut saws, and a lot of picks and shovels and axes, and cases of sheath knives and mess gear and miscellaneous trade goods, including a lot of the empty wine and whisky bottles that had been hoarded for the past four years.

At lunch, the talk was almost exclusively about the language problem. Lillian Ransby, who had not gotten to sleep before sunrise and had just gotten up, was discouraged.

"I don't know what we're going to do next," she admitted. "Glenn Orent and Anna and I were on it all night, and we're nowhere. We have about a hundred wordlike sounds isolated, and twenty or so are used repeatedly, and we can't assign a meaning to any of them. And none of the Svants ever reacted the same way twice to anything we said to them. There's just no one-to-one relationship anywhere."

"I'm beginning to doubt they have a language," the Navy intelligence officer said. "Sure, they make a lot of vocal noise. So do chipmunks."

"They have to have a language," Anna de Jong declared. "No sapient thought is possible without verbalization."

"Well, no society like that is possible without some means of communication," Karl Dorver supported her from the other flank. He seemed to have made that point before. "You know," he added, "I'm beginning to wonder if it mightn't be telepathy."

He evidently hadn't suggested that before. The others looked at him in surprise. Anna started to say, "Oh, I doubt if--" and then stopped.

"I know, the race of telepaths is an old gimmick that's been used in new-planet adventure stories for centuries, but maybe we've finally found one."

"I don't like it, Karl," Loughran said. "If they're telepaths, why don't they understand us? And if they're telepaths, why do they talk at all? And you can't convince me that this boodly-oodly-doodle of theirs isn't talking."

"Well, our neural structure and theirs won't be nearly alike," Fayon said. "I know, this analogy between telepathy and radio is full of holes, but it's good enough for this. Our wave length can't be picked up with their sets."

"The deuce it can," Gofredo contradicted. "I've been bothered about that from the beginning. These people act as though they got meaning from us. Not the meaning we intend, but some meaning. When Paul made the gobbledygook speech, they all reacted in the same way--frightened, and then defensive. The you-me routine simply bewildered them, as we'd be at a set of semantically lucid but self-contradictory statements. When Lillian tried to introduce herself, they were shocked and horrified...."

"It looked to me like actual physical disgust," Anna interpolated.

"When I tried it, they acted like a lot of puppies being petted, and when Mark tried it, they were simply baffled. I watched Mark explaining that steel knives were dangerously sharp; they got the demonstration, but when he tried to tie words onto it, it threw them completely."

"ALL RIGHT. Pass that," Loughran conceded. "But if they have telepathy, why do they use spoken words?"

"Oh, I can answer that," Anna said. "Say they communicated by speech originally, and developed their telepathic faculty slowly and without realizing it. They'd go on using speech, and since the message would be received telepathically ahead of the spoken message, nobody would pay any attention to the words as such. Everybody would have a spoken language of his own; it would be sort of the instrumental accompaniment to the song."
"Some of them don't bother speaking," Karl nodded. "They just toot."

"I'll buy that, right away," Loughran agreed. "In mating, or in group-danger situations, telepathy would be a race-survival characteristic. It would be selected for genetically, and the non-gifted strains would tend to die out."

It wouldn't do. It wouldn't do at all. He said so.

"Look at their technology. We either have a young race, just emerged from savagery, or an old, stagnant race. All indications seem to favor the latter. A young race would not have time to develop telepathy as Anna suggests. An old race would have gone much farther than these people have. Progress is a matter of communication and pooling ideas and discoveries. Make a trend-graph of technological progress on Terra; every big jump comes after an improvement in communications. The printing press; railways and steamships; the telegraph; radio. Then think how telepathy would speed up progress."

The sun was barely past noon meridian before the Svants, who had ventured down into the fields at sunrise, were returning to the mound-village. In the snooper-screen, they could be seen coming up in tunics and breechclouts, entering houses, and emerging in long robes. There seemed to be no bows or spears in evidence, but the big horn sounded occasionally. Paul Meillard was pleased. Even if it had been by sign-talk, which he rated with worm-fishing for trout or shooting sitting rabbits, he had gotten something across to them.

When they went to the village, at 1500, they had trouble getting their lorry down. A couple of Marines in a jeep had to go in first to get the crowd out of the way. Several of the locals, including the one with the staff, joined with them; this quick co-operation delighted Meillard. When they had the lorry down and were all out of it, the dignitary with the staff, his scarlet tablecloth over his yellow robe, began an oration, apparently with every confidence that he was being understood. In spite of his objections at lunch, the telepathy theory was beginning to seem more persuasive.

"Give them the Shooting of Dan McJabberwock again," he told Meillard. "This is where we came in yesterday."

Something Meillard had noticed was exciting him. "Wait a moment. They're going to do something."

They were indeed. The one with the staff and three of his henchmen advanced. The staff bearer touched himself on the brow. "Fwoonk," he said. Then he pointed to Meillard. "Hoonkle," he said.

"They got it!" Lillian was hugging herself joyfully. "I knew they ought to!"

Meillard indicated himself and said, "Fwoonk."

That wasn't right. The village elder immediately corrected him. The word, it seemed, was, "Fwoonk."

His three companions agreed that that was the word for self, but that was as far as the agreement went. They rendered it, respectively, as "Pwink," "Tweelt" and "Kroosh."

Gofredo gave a barking laugh. He was right; anything that could go wrong would go wrong. Lillian used a word; it was not a ladylike word at all. The Svants looked at them as though wondering what could possibly be the matter. Then they went into a huddle, arguing vehemently. The argument spread, like a ripple in a pool; soon everybody was twittering vocally or blowing on flutes and Panpipes. Then the big horn started blaring. Immediately, Gofredo snatched the hand-phone of his belt radio and began speaking urgently into it.

"What are you doing, Luis?" Meillard asked anxiously.

"Calling the reserve in. I'm not taking chances on this." He spoke again into the phone, then called over his shoulder: "Rienet; three one-second bursts, in the air!"

A Marine pointed a submachine gun skyward and ripped off a string of shots, then another, and another. There was silence after the first burst. Then a frightful howling arose.

"Luis, you imbecile!" Meillard was shouting.

Gofredo jumped onto the top of an airjeep, where they could all see him; drawing his pistol, he fired twice into the air.

"Be quiet, all of you!" he shouted, as though that would do any good.

It did. Silence fell, bounced noisily, and then settled over the crowd. Gofredo went on talking to them: "Take it easy, now; easy." He might have been speaking to a frightened dog or a fractious horse. "Nobody's going to hurt you. This is nothing but the great noise-magic of the Terrans...."

"Get the presents unloaded," Meillard was saying. "Make a big show of it. The table first."

The horn, which had started, stopped blowing. As they were getting off the long table and piling it with trade goods, another lorry came in, disgorging twenty Marine riflemen. They had their bayonets fixed; the natives looked apprehensively at the bare steel, but went on listening to Gofredo. Meillard pulled the (Lord Mayor? Archbishop? Lord of the Manor?) aside, and began making sign-talk to him.

When quiet was restored, Howell put a pick and shovel into a wheelbarrow and pushed them out into the space that had been cleared in front of the table. He swung the pick for a while, then shoveled the barrow full of ground.
After pushing it around for a while, he dumped it back in the hole and leveled it off. Two Marines brought out an eight-inch log and chopped a couple of billets off it with an ax, then cut off another with one of the saws, split them up, and filled the wheelbarrow with the firewood.

[Illustration: We can't use the computer till we can tell it what the data is data about!]

The knives, jewelry and other small items would be no problem; they had enough of them to go around. The other stuff would be harder to distribute, and Paul Meillard and Karl Dorver were arguing about how to handle it. If they weren't careful, a lot of new bowie knives would get bloodied.

"Have them form a queue," Anna suggested. "That will give them the idea of equal sharing, and we'll be able to learn something about their status levels and social hierarchy and agonistic relations."

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The one with the staff took it as a matter of course that he would go first; his associates began falling in behind him, and the rest of the villagers behind them. Whether they'd gotten one the day before or not, everybody was given a knife and a bandanna and one piece of flashy junk-jewelry, also a stainless steel cup and mess plate, a bucket, and an empty bottle with a cork. The women didn't carry sheath knives, so they got Boy Scout knives on lanyards. They were all lavishly supplied with Extee Three and candy. Any of the children who looked big enough to be trusted with them got knives too, and plenty of candy.

Anna and Karl were standing where the queue was forming, watching how they fell into line; so was Lillian, with an audiovisual camera. Having seen that the Marine enlisted men were getting the presents handed out properly, Howell strolled over to them. Just as he came up, a couple approached hesitantly, a man in a breechclout under a leather apron, and a woman, much smaller, in a ragged and soiled tunic. As soon as they fell into line, another Svant, in a blue robe, pushed them aside and took their place.

"Here, you can't do that!" Lillian cried. "Karl, make him step back."

Karl was saying something about social status and precedence. The couple tried to get into line behind the man who had pushed them aside. Another villager tried to shove them out of his way. Howell advanced, his right fist closing. Then he remembered that he didn't know what he'd be punching; he might break the fellow's neck, or his own knuckles. He grabbed the blue-robed Svant by the wrist with both hands, kicked a foot out from under him, and jerked, sending him flying for six feet and then sliding in the dust for another couple of yards. He pushed the others back, and put the couple into place in the line.

"Mark, you shouldn't have done that," Dorver was expostulating. "We don't know...."

The Svant sat up, shaking his head groggily. Then he realized what had been done to him. With a snarl of rage, he was on his feet, his knife in his hand. It was a Terran bowie knife. Without conscious volition, Howell's pistol was out and he was thumbing the safety off.

The Svant stopped short, then dropped the knife, ducked his head, and threw his arms over it to shield his comb. He backed away a few steps, then turned and bolted into the nearest house. The others, including the woman in the ragged tunic, were twittering in alarm. Only the man in the leather apron was calm; he was saying, tonelessly, "Ghrooogh-ghrooogh."

Luis Gofredo was coming up on the double, followed by three of his riflemen.

"What happened, Mark? Trouble?"

"All over now." He told Gofredo what had happened. Dorver was still objecting:

"... Social precedence; the Svant may have been right, according to local customs."

"Local customs be damned!" Gofredo became angry. "This is a Terran Federation handout; we make the rules, and one of them is, no pushing people out of line. Teach the buggers that now and we won't have to work so hard at it later." He called back over his shoulder, "Situation under control; get the show going again."

The natives were all grimacing heartbrokenly with pleasure. Maybe the one who got thrown on his ear--no, he didn't have any--was not one of the more popular characters in the village.

"You just pulled your gun, and he dropped the knife and ran?" Gofredo asked. "And the others were scared, too?"

"That's right. They all saw you fire yours; the noise scared them."

Gofredo nodded. "We'll avoid promiscuous shooting, then. No use letting them find out the noise won't hurt them any sooner than we have to."

Paul Meillard had worked out a way to distribute the picks and shovels and axes. Considering each house as representing a family unit, which might or might not be the case, there were picks and shovels enough to go around, and an ax for every third house. They took them around in an airjeep and left them at the doors. The houses, he found, weren't adobe at all. They were built of logs, plastered with adobe on the outside. That demolished his theory that the houses were torn down periodically, and left the mound itself unexplained.

The wheelbarrows and the grindstone and the two crosscut saws were another matter. Nobody was quite sure
that the (nobility? capitalist-class? politicians? prominent citizens?) wouldn't simply appropriate them for themselves. Paul Meillard was worried about that; everybody else was willing to let matters take their course. Before they were off the ground in their vehicles, a violent dispute had begun, with a bedlam of jabbering and shrieking. By the time they were landing at the camp, the big laminated leather horn had begun to bellow.

* * * * *

One of the huts had been fitted as contact-team headquarters, with all the view and communication screens installed, and one end partitioned off and soundproofed for Lillian to study recordings in. It was cocktail time when they returned; conversationally, it was a continuation from lunch. Karl Dorver was even more convinced than ever of his telepathic hypothesis, and he had completely converted Anna de Jong to it.

"Look at that." He pointed at the snooper screen, which gave a view of the plaza from directly above. "They're reaching an agreement already."

So they seemed to be, though upon what was less apparent. The horn had stopped, and the noise was diminishing. The odd thing was that peace was being restored, or was restoring itself, as the uproar had begun--outwardly from the center of the plaza to the periphery of the crowd. The same thing had happened when Gofredo had ordered the submachine gun fired, and, now that he recalled, when he had dealt with the line-crasher.

"Suppose a few of them, in the middle, are agreed," Anna said. "They are all thinking in unison, combining their telepathic powers. They dominate those nearest to them, who join and amplify their telepathic signal, and it spreads out through the whole group. A mental chain-reaction."

"That would explain the mechanism of community leadership, and I'd been wondering about that," Dorver said, becoming more excited. "It's a mental aristocracy; an especially gifted group of telepaths, in agreement and using their powers in concert, implanting their opinions in the minds of all the others. I'll bet the purpose of the horn is to distract the thoughts of the others, so that they can be more easily dominated. And the noise of the shots shocked them out of communication with each other; no wonder they were frightened."

Bennet Fayon was far from convinced. "So far, this telepathy theory is only an assumption. I find it a lot easier to assume some fundamental difference between the way they translate sound into sense-data and the way we do. We think those combs on top of their heads are their external hearing organs, but we have no idea what's back of them, or what kind of a neural hookup is connected to them. I wish I knew how these people dispose of their dead. I need a couple of fresh cadavers. Too bad they aren't warlike. Nothing like a good bloody battle to advance the science of anatomy, and what we don't know about Svant anatomy is practically the entire subject."

"I should imagine the animals hear in the same way," Meillard said. "When the wagon wheels and the hoes and the blacksmith tools come down from the ship, we'll trade for cattle."

"When they make the second landing in the mountains, I'm going to do a lot of hunting," Loughran added. "I'll get wild animals for you."

"Well, I'm going to assume that the vocal noises they make are meaningful speech," Lillian Ransby said. "So far, I've just been trying to analyze them for phonetic values. Now I'm going to analyze them for sound-wave patterns. No matter what goes on inside their private nervous systems, the sounds exist as waves in the public atmosphere. I'm going to assume that the Lord Mayor and his stooges were all trying to say the same thing when they were pointing to themselves, and I'm going to see if all four of those sounds have any common characteristic."

By the time dinner was over, they were all talking in circles, none of them hopefully. They all made recordings of the speech about the slithy toves in the Malemute Saloon; Lillian wanted to find out what was different about them. Luis Gofredo saw to it that the camp itself would be visible-lighted, and beyond the lights he set up more photoelectric robot sentries and put a couple of snoopers to circling on contragravity, with infra-red lights and receptors. He also insisted that all his own men and all Dave Questell's Navy construction engineers keep their weapons ready to hand. The natives in the village were equally distrustful. They didn't herd the cattle up from the meadows where they had been pastured, but they lighted watch-fires along the edge of the mound as soon as it became dark.

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It was three hours after nightfall when something on the indicator-board for the robot sentries went off like a startled rattlesnake. Everybody, talking idly or concentrating on writing up the day's observations, stiffened. Luis Gofredo, dozing in a chair, was on his feet instantly and crossing the hut to the instruments. His second-in-command, who had been playing chess with Willi Schallenmacher, rose and snatched his belt from the back of his chair, putting it on.

"Take it easy," Gofredo said. "Probably just a cow or a horse--local equivalent--that's strayed over from the other side."

He sat down in front of one of the snooper screens and twisted knobs on the remote controls. The monochrome view, transformed from infra red, rotated as the snooper circled and changed course. The other screen showed the
camp receding and the area around it widening as its snooper gained altitude.

"It's not a big party," Gofredo was saying. "I can't see--Oh, yes I can. Only two of them."

The humanoid figures, one larger than the other, were moving cautiously across the fields, crouching low. The snooper went down toward them, and then he recognized them. The man and woman whom the blue-robed villager had tried to shove out of the queue, that afternoon. Gofredo recognized them, too.

"Your friends, Mark. Harry," he told his subordinate, "go out and pass the word around. Only two, and we think they're friendly. Keep everybody out of sight; we don't want to scare them away."

The snooper followed closely behind them. The man was no longer wearing his apron; the woman's tunic was even more tattered and soiled. She was leading him by the hand. Now and then, she would stop and turn her head to the rear. The snooper over the mound showed nothing but half a dozen fire-watchers dozing by their fires. Then the pair were at the edge of the camp lights. As they advanced, they seemed to realize that they had passed a point-of-no-return. They straightened and came forward steadily, the woman seeming to be guiding her companion.

"What's happening, Mark?"

It was Lillian; she must have just come out of the soundproof speech-lab.

"You know them; the pair in the queue, this afternoon. I think we've annexed a couple of friendly natives."

They all went outside. The two natives, having come into the camp, had stopped. For a moment, the man in the breechclout seemed undecided whether he was more afraid to turn and run than advance. The woman, holding his hand, led him forward. They were both bruised, and both had minor cuts, and neither of them had any of the things that had been given to them that afternoon.

"Rest of the gang beat them up and robbed them," Gofredo began angrily.

"See what you did?" Dorver began. "According to their own customs, they had no right to be ahead of those others, and now you've gotten them punished for it."

"I'd have done more to that fellow then Mark did, if I'd been there when it happened." The Marine officer turned to Meillard. "Look, this is your show, Paul; how you run it is your job. But in your place, I'd take that pair back to the village and have them point out who beat them up, and teach the whole gang of them a lesson. If you're going to colonize this planet, you're going to have to establish Federation law, and Federation law says you mustn't gang up on people and beat and rob them. We don't have to speak Svantese to make them understand what we'll put up with and what we won't."

"Later, Luis. After we've gotten a treaty with somebody." Meillard broke off. "Watch this!"

The woman was making sign-talk. She pointed to the village on the mound. Then, with her hands, she shaped a bucket like the ones that had been given to them, and made a snatching gesture away from herself. She indicated the neckcloths, and the sheath knife and the other things, and snatched them away too. She made beating motions, and touched her bruises and the man's. All the time, she was talking excitedly, in a high, shrill voice. The man made the same ghroogh-ghroogh noises that he had that afternoon.

"No; we can't take any punitive action. Not now," Meillard said. "But we'll have to do something for them."

Vengeance, it seemed, wasn't what they wanted. The woman made vehement gestures of rejection toward the village, then bowed, placing her hands on her brow. The man imitated her obeisance, then they both straightened. The woman pointed to herself and to the man, and around the circle of huts and landing craft. She began scuttling about, picking up imaginary litter and sweeping with an imaginary broom. The man started pounding with an imaginary hammer, then chopping with an imaginary ax.

Lillian was clapping her hands softly. "Good; got it the first time. 'You let us stay; we work for you.' How about it, Paul?"

Meillard nodded. "Punitive action's unadvisable, but we will show our attitude by taking them in. You tell them, Luis; these people seem to like your voice."

Gofredo put a hand on each of their shoulders. "You ... stay ... with us." He pointed around the camp. "You ... stay ... this ... place."

Their faces broke into that funny just-before-tears expression that meant happiness with them. The man confined his vocal expressions to his odd ghroogh-ghroogh-ing; the woman twittered joyfully. Gofredo put a hand on the woman's shoulder, pointed to the man and from him back to her. "Unh?" he inquired.

The woman put a hand on the man's head, then brought it down to within a foot of the ground. She picked up the imaginary infant and rocked it in her arms, then set it down and grew it up until she had her hand on the top of the man's head again.

"That was good, Mom," Gofredo told her. "Now, you and Sonny come along; we'll issue you equipment and find you billets." He added, "What in blazes are we going to feed them; Extee Three?"

* * * * *

They gave them replacements for all the things that had been taken away from them. They gave the man a one-
piece suit of Marine combat coveralls; Lillian gave the woman a lavender bathrobe, and Anna contributed a red
scarf. They found them quarters in one end of a store shed, after making sure that there was nothing they could get at
that would hurt them or that they could damage. They gave each of them a pair of blankets and a pneumatic
mattress, which delighted them, although the cots puzzled them at first.

"What do you think about feeding them, Bennet?" Meillard asked, when the two Svants had gone to bed and
they were back in the headquarters hut. "You said the food on this planet is safe for Terrans."

"So I did, and it is, but the rule's not reversible. Things we eat might kill them," Fayon said. "Meats will be
especially dangerous. And no caffein, and no alcohol."

"Alcohol won't hurt them," Schallenmacher said. "I saw big jars full of fermenting fruit-mash back of some of
those houses; in about a year, it ought to be fairly good wine. C(2)H(5)OH is the same on any planet."

"Well, we'll get native foodstuffs tomorrow," Meillard said. "We'll have to do that by signs, too," he regretted.
"Get Mom to help you; she's pretty sharp," Lillian advised. "But I think Sonny's the village half-wit."

Anna de Jong agreed. "Even if we don't understand Svant psychology, that's evident; he's definitely subnormal.
The way he clings to his mother for guidance is absolutely pathetic. He's a mature adult, but mentally he's still a little
child."

"That may explain it!" Dorver cried. "A mental defective, in a community of telepaths, constantly invading
the minds of others with irrational and disgusting thoughts; no wonder he is rejected and persecuted. And in a
community on this culture level, the mother of an abnormal child is often regarded with superstitious detestation--"

[Illustration]

"Yes, of course!" Anna de Jong instantly agreed, and began to go into the villagers' hostility to both mother and
son; both of them were now taking the telepathy hypothesis for granted.

Well, maybe so. He turned to Lillian.

"What did you find out?"

"Well, there is a common characteristic in all four sounds. A little patch on the screen at seventeen-twenty
cycles. The odd thing is that when I try to repeat the sound, it isn't there."

Odd indeed. If a Svant said something, he made sound waves; if she imitated the sound, she ought to imitate the
wave pattern. He said so, and she agreed.

"But come back here and look at this," she invited.

She had been using a visibilizing analyzer; in it, a sound was broken by a set of filters into frequency-groups,
translated into light from dull red to violet paling into pure white. It photographed the light-pattern on high-speed
film, automatically developed it, and then made a print-copy and projected the film in slow motion on a screen. When
she pressed a button, a recorded voice said, "Fwoonk." An instant later, a pattern of vertical lines in various
colors and lengths was projected on the screen.

"Those green lines," she said. "That's it. Now, watch this."

She pressed another button, got the photoprint out of a slot, and propped it beside the screen. Then she picked
up a hand-phone and said, "Fwoonk," into it. It sounded like the first one, but the pattern that danced onto the screen
was quite different. Where the green had been, there was a patch of pale-blue lines. She ran the other three Svants'
voices, each saying, presumably, "Me." Some were mainly up in blue, others had a good deal of yellow and orange,
but they all had the little patch of green lines.

"Well, that seems to be the information," he said. "The rest is just noise."

"Maybe one of them is saying, 'John Doe, me, son of Joe Blow,' and another is saying, 'Tough guy, me; lick
anybody in town.'"

"All in one syllable?" Then he shrugged. How did he know what these people could pack into one syllable? He
picked up the hand-phone and said, "Fwoonk," into it. The pattern, a little deeper in color and with longer lines, was
recognizably like hers, and unlike any of the Svants'.

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The others came in, singly and in pairs and threes. They watched the colors dance on the screen to picture the
four Svant words which might or might not all mean me. They tried to duplicate them. Luis Gofredo and Willi
Schallenmacher came closest of anybody. Bennet Fayon was still insisting that the Svants had a perfectly
comprehensible language--to other Svants. Anna de Jong had started to veer a little away from the Dorver
Hypothesis. There was a difference between event-level sound, which was a series of waves of alternately crowded
and rarefied molecules of air, and object-level sound, which was an auditory sensation inside the nervous system,
she admitted. That, Fayon crowed, was what he'd been saying all along; their auditory system was probably such
that fwoonk and pwink and tweelt and kroosh had become swear words among the joint Space Navy-
Colonial Office contact team.
"Well, if I hear the two sounds alike, why doesn't the analyzer hear them alike?" Karl Dorver demanded.

"It has better ears than you do, Karl. Look how many different frequencies there are in that word, all crowding up behind each other," Lillian said. "But it isn't sensitive or selective enough. I'm going to see what Ayesha Keithley can do about building me a better one."

Ayesha was signals and detection officer on the Hubert Penrose. Dave Questell mentioned that she'd had a hard day, and was probably making sack-time, and she wouldn't welcome being called at 0130. Nobody seemed to have realized that it had gotten that late.

"Well, I'll call the ship and have a recording made for her for when she gets up. But till we get something that'll sort this mess out and make sense of it, I'm stopped."

"You're stopped, period, Lillian," Dorver told her. "What these people gibber at us doesn't even make as much sense as the Shooting of Dan McJabberwock. The real information is conveyed by telepathy."

* * * * *

Lieutenant j.g. Ayesha Keithley was on the screen the next morning while they were eating breakfast. She was a blonde, like Lillian.

"I got your message; you seem to have problems, don't you?"

"Speaking conservatively, yes. You see what we're up against?"

"You don't know what their vocal organs are like, do you?" the girl in naval uniform in the screen asked. Lillian shook her head. "Bennet Fayon's hoping for a war, or an epidemic, or something to break out, so that he can get a few cadavers to dissect."

"Well, he'll find that they're pretty complex," Ayesha Keithley said. "I identified stick-and-slip sounds and percussion sounds, and plucked-string sounds, along with the ordinary hiss-and-buzz speech-sounds. Making a vocoder to reproduce that speech is going to be fun. Just what are you using, in the way of equipment?"

Lillian was still talking about how they were going to sort things out when the two landing craft from the ship were sighted, coming down. Charley Loughran and Willi Schallenmacher, who were returning to the Hubert Penrose to join the other landing party, began assembling their luggage.

Mom and Sonny were watching the two craft grow larger and closer above, keeping close to a group of spacemen; Sonny was looking around excitedly, while Mom clung to his arm, like a hen with an oversized chick. The reasoning was clear--these people knew all about big things that came down out of the sky and weren't afraid of them; stick close to them, and it would be perfectly safe. Sonny saw the contact team emerging from their hut and grabbed his mother's arm, pointing. They both beamed happily; that expression didn't look sad, at all, now that you knew what it meant. Sonny began ghroogh-ghrooghing hideously; Mom hushed him with a hand over his mouth, and they both made eating gestures, rubbed their abdomens comfortably, and pointed toward the mess hut. Bennet Fayon was frightened. He turned and started on the double toward the cook, who was standing in the doorway of the hut, calling out to him.

The cook spoke inaudibly. Fayon stopped short. "Unholy Saint Beelzebub, no!" he cried. The cook said something in reply, shrugging. Fayon came back, talking to himself.

"Terran carniculture pork," he said, when he returned. "Zarathustra pool-ball fruit. Potato-flour hotcakes, with Baldur honey and Odin flameberry jam. And two big cups of coffee apiece. It's a miracle they aren't dead now. If they're alive for lunch, we won't need to worry about feeding them anything we eat, but I'm glad somebody else has the moral responsibility for this."

Lillian Ransby came out of the headquarters hut. "Ayesha's coming down this afternoon, with a lot of equipment," she said. "We're not exactly going to count air molecules in the sound waves, but we'll do everything short of that. We'll need more lab space, soundproofed."

"Tell Dave Questell what you want," Meillard said. "Do you really think you can get anything?"

She shrugged. "If there's anything there to get. How long it'll take is another question."

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The two sixty-foot collapsium-armored turtles settled to the ground and went off contragravity. The ports opened, and things began being floated off on lifter-skids: framework for the water tower, and curved titanium sheets for the tank. Anna de Jong said something about hot showers, and not having to take any more sponge-baths. Howell was watching the stuff come off the other landing craft. A dozen pairs of four-foot wagon wheels, with axles. Hoes, in bundles. Scythe blades. A hand forge, with a crank-driven fan blower, and a hundred and fifty pound anvil, and sledges and cutters and swages and tongs.

Everybody was busy, and Mom and Sonny were fidgeting, gesturing toward the work with their own empty hands. Hey, boss; whatta we gonna do? He patted them on the shoulders.

"Take it easy." He hoped his tone would convey nonurgency. "We'll find something for you to do."

He wasn't particularly happy about most of what was coming off. Giving these Svants tools was fine, but it was
more important to give them technologies. The people on the ship hadn't thought of that. These wheels, now; machined steel hubs, steel rims, tubular steel spokes, drop-forged and machined axles. The Svants wouldn't be able to copy them in a thousand years. Well, in a hundred, if somebody showed them where and how to mine iron and how to smelt and work it. And how to build a steam engine.

He went over and pulled a hoe out of one of the bundles. Blades stamped out with a power press, welded to tubular steel handles. Well, wood for hoe handles was hard to come by on a spaceship, even a battle cruiser almost half a mile in diameter; he had to admit that. And they were about two thousand per cent more efficient than the bronze scrapers the Svants used. That wasn't the idea, though. Even supposing that the first wave of colonists came out in a year and a half, it would be close to twenty years before Terran-operated factories would be in mass production for the native trade. The idea was to teach these people to make better things for themselves; give them a leg up, so that the next generation would be ready for contragravity and nuclear and electric power.

Mom didn't know what to make of any of it. Sonny did, though; he was excited, grabbing Howell's arm, pointing, saying, "Ghoogh! Ghoogh!" He pointed at the wheels, and then made a stooping, lifting and pushing gesture. Like wheelbarrow?

"That's right." He nodded, wondering if Sonny recognized that as an affirmative sign. "Like big wheelbarrow."

One thing puzzled Sonny, though. Wheelbarrow wheels were small--his hands indicated the size--and single.

"Let me show you this, Sonny."

He squatted, took a pad and pencil from his pocket, and drew two pairs of wheels, and then put a wagon on them, and drew a quadruped hitched to it, and a Svant with a stick walking beside it. Sonny looked at the picture--Svants seemed to have pictoral sense, for which make us thankful!--and then caught his mother's sleeve and showed it to her. Mom didn't get it. Sonny took the pencil and drew another animal, with a pole travois. He made gestures. A travois dragged; it went slow. A wagon had wheels that went around; it went fast.

So Lillian and Anna thought he was the village half-wit. Village genius, more likely; the other peasants didn't understand him, and resented his superiority. They went over for a closer look at the wheels, and pushed them. Sonny was almost beside himself. Mom was puzzled, but she thought they were pretty wonderful.

Then they looked at blacksmith tools. Tongs; Sonny had never seen anything like them. Howell wondered what the Svants used to handle hot metal; probably big tweezers made by tying two green sticks together. There was an old Arabian legend that Allah had made the first tongs and given them to the first smith, because nobody could make tongs without having a pair already.

Sonny didn't understand the fan-blower until it was taken apart. Then he made a great discovery. The wheels, and the fan, and the pivoted tongs, all embodied the same principle, one his people had evidently never discovered. A whole new world seemed to open before him; from then on, he was constantly finding things pierced and rotating on pivots.

By this time, Mom was fidgeting again. She ought to be doing something to justify her presence in the camp. He was wondering what sort of work he could invent for her when Karl Dorver called to him from the door of the headquarters hut.

"Mark, can you spare Mom for a while?" he asked. "We want her to look at pictures and show us which of the animals are meat-cattle, and which of the crops are ripe."

"Think you can get anything out of her?"

"Sign-talk, yes. We may get a few words from her, too."

At first, Mom was unwilling to leave Sonny. She finally decided that it would be safe, and trotted over to Dorver, entering the hut.

Dave Questell's construction crew began at once on the water tank, using a power shovel to dig the foundation. They had to haul water in a tank from the river a quarter-mile away to mix the concrete. Sonny watched that interestingly. So did a number of the villagers, who gathered safely out of bowshot. They noticed Sonny among the Terrans and pointed at him. Sonny noticed that. He unobtrusively picked up a double-bitted ax and kept it to hand.

He and Mom had lunch with the contact team. As they showed no ill effects from breakfast, Fayon decided that it was safe to let them have anything the Terrans ate or drank. They liked wine; they knew what it was, all right, but this seemed to have a delightfully different flavor. They each tried a cigarette, choked over the first few puffs, and decided that they didn't like smoking.

"Mom gave us a lot of information, as far as she could, on the crops and animals. The big things, the size of rhinoceroses, are draft animals and nothing else; they're not eaten," Dorver said. "I don't know whether the meat isn't good, or is taboo, or they are too valuable to eat. They eat all the other three species, and milk two of them. I have an idea they grind their grain in big stone mortars as needed."
That was right; he'd seen things like that.

"Willi, when you're over in the mountains, see if you can find something we can make millstones out of. We can shape them with sono-cutters; after they get the idea, they can do it themselves by hand. One of those big animals could be used to turn the mill. Did you get any words from her?"

Paul Meillard shook his head gloomily. "Nothing we can be sure of. It was the same thing as in the village, yesterday. She'd say something, I'd repeat it, and she'd tell us it was wrong and say the same thing over again. Lillian took recordings; she got the same results as last night. Ask her about it later."

"She has the same effect on Mom as on the others?"

"Yes. Mom was very polite and tried not to show it, but--"

Lillian took him aside, out of earshot of the two Svants, after lunch. She was almost distracted.

"Mark, I don't know what I'm going to do. She's like the others. Every time I open my mouth in front of her, she's simply horrified. It's as though my voice does something loathsome to her. And I'm the one who's supposed to learn to talk to them."

"Well, those who can do, and those who can't teach," he told her. "You can study recordings, and tell us what the words are and teach us how to recognize and pronounce them. You're the only linguist we have."

That seemed to comfort her a little. He hoped it would work out that way. If they could communicate with these people and did leave a party here to prepare for the first colonization, he'd stay on, to teach the natives Terran technologies and study theirs. He'd been expecting that Lillian would stay, too. She was the linguist; she'd have to stay. But now, if it turned out that she would be no help but a liability, she'd go back with the Hubert Penrose. Paul wouldn't keep a linguist who offended the natives' every sensibility with every word she spoke. He didn't want that to happen. Lillian and he had come to mean a little too much to each other to be parted now.

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Paul Meillard and Karl Dorver had considerable difficulty with Mom, that afternoon. They wanted her to go with them and help trade for cattle. Mom didn't want to; she was afraid. They had to do a lot of play-acting, with half a dozen Marines pretending to guard her with fixed bayonets from some of Dave Questell's Navy construction men who had red bandannas on their heads to simulate combs before she got the idea. Then she was afraid to get into the contragravity lorry that was to carry the hoes and the wagon wheels. Sonny managed to reassure her, and insisted on going along, and he insisted on taking his ax with him. That meant doubling the guard, to make sure Sonny didn't lose his self-control when he saw his former persecutors within chopping distance.

It went off much better than either Paul Meillard or Luis Gofredo expected. After the first shock of being airborne had worn off, Mom found that she liked contragravity-riding; Sonny was wildly delighted with it from the start. The natives showed neither of them any hostility. Mom's lavender bathrobe and Sonny's green coveralls and big ax seemed to be symbols of a new and exalted status; even the Lord Mayor was extremely polite to them.

The Lord Mayor and half a dozen others got a contragravity ride, too, to the meadows to pick out cattle. A dozen animals, including a pair of the two-ton draft beasts, were driven to the Terran camp. A couple of lorry-loads of assorted vegetables were brought in, too. Everybody seemed very happy about the deal, especially Bennet Fayon. He wanted to slaughter one of the sheep-sized meat-and-milk animals at once and get to work on it. Gofredo advised him to put it off till the next morning. He wanted a large native audience to see the animal being shot with a rifle.

The water tower was finished, and the big spherical tank hoisted on top of it and made fast. A pump, and a filter-system were installed. There was no water for hot showers that evening, though. They would have to run a pipeline to the river, and that would entail a ditch that would cut through several cultivated fields, which, in turn, would provoke an uproar. Paul Meillard didn't want that happening until he'd concluded the cattle-trade.

Charley Loughran and Willi Schallenmacher had gone up to the ship on one of the landing craft; they accompanied the landing party that went down into the mountains. Ayesha Keithley arrived late in the afternoon on another landing craft, with five or six tons of instruments and parts and equipment, and a male Navy warrant-officer helper.

They looked around the lab Lillian had been using at one end of the headquarters hut.

"This won't do," the girl Navy officer said. "We can't get a quarter of the apparatus we're going to need in here. We'll have to build something."

Dave Questell was drawn into the discussion. Yes, he could put up something big enough for everything the girls would need to install, and soundproof it. Concrete, he decided; they'd have to wait till he got the water line down and the pump going, though.

There was a crowd of natives in the fields, gaping at the Terran camp, the next morning, and Gofredo decided to kill the animal—until they learned the native name, they were calling it Domesticated Type C. It was herded out where everyone could watch, and a Marine stepped forward unsling his rifle took a kneeling position, and aimed at it. It was a hundred and fifty yards away. Mom had come out to see what was going on; Sonny and Howell, who had
been consulting by signs over the construction of a wagon, were standing side by side. The Marine squeezed his trigger. The rifle banged, and the Domesticated-C bounded into the air, dropped, and kicked a few times and was still. The natives, however, missed that part of it; they were howling piteously and rubbing their heads. All but Sonny. He was just mildly surprised at what had happened to the Dom.-C.

Sonny, it would appear, was stone deaf.

As anticipated, there was another uproar later in the morning when the ditching machine started north across the meadow. A mob of Svants, seeing its relentless progress toward a field of something like turnips, gathered in front of it, twittering and brandishing implements of agriculture, many of them Terran-made.

Paul Meillard was ready for this. Two lorries went out; one loaded with Marines, who jumped off with their rifles ready. By this time, all the Svants knew what rifles would do beside make a noise. Meillard, Dorver, Gofredo and a few others got out of the other vehicle, and unloaded presents. Gofredo did all the talking. The Svants couldn't understand him, but they liked it. They also liked the presents, which included a dozen empty half-gallon rum demijohns, tarpaulins, and a lot of assorted knickknacks. The pipeline went through.

He and Sonny got the forge set up. There was no fuel for it. A party of Marines had gone out to the woods to the east to cut wood; when they got back, they'd burn some charcoal in the pit that had been dug beside the camp. Until then, he and Sonny were drawing plans for a wooden wheel with a metal tire when Lillian came out of the headquarters hut with a clipboard under her arm. She motioned to him.

"Come on over," he told her. "You can talk in front of Sonny; he won't mind. He can't hear."

"Can't hear?" she echoed. "You mean--?"

"That's right. Sonny's stone deaf. He didn't even hear that rifle going off. The only one of this gang that has brains enough to pour sand out of a boot with directions on the bottom of the heel, and he's a total linguistic loss."

"So he isn't a half-wit, after all."

"He's got an IQ close to genius level. Look at this; he never saw a wheel before yesterday; now he's designing one."

Lillian's eyes widened. "So that's why Mom's so sharp about sign-talk. She's been doing it all his life." Then she remembered what she had come out to show him, and held out the clipboard. "You know how that analyzer of mine works? Well, here's what Ayesha's going to do. After breaking a sound into frequency bands instead of being photographed and projected, each band goes to an analyzer of its own, and is projected on its own screen. There'll be forty of them, each for a band of a hundred cycles, from zero to four thousand. That seems to be the Svant vocal range."

The diagram passed from hand to hand during cocktail time, before dinner. Bennet Fayon had been working all day dissecting the animal they were all calling a domsee, a name which would stick even if and when they learned the native name. He glanced disinterestedly at the drawing, then looked again, more closely. Then he set down the drink he was holding in his other hand and studied it intently.

"You know what you have here?" he asked. "This is a very close analogy to the hearing organs of that animal I was working on. The comb, as we've assumed, is the external organ. It's covered with small flaps and fissures. Back of each fissure is a long, narrow membrane; they're paired, one on each side of the comb, and from them nerves lead to clusters of small round membranes. Nerves lead from them to a complex nerve-cable at the bottom of the comb and into the brain at the base of the skull. I couldn't understand how the system functioned, but now I see it. Each of the larger membranes on the outside responds to a sound-frequency band, and the small ones on the inside break the bands down to individual frequencies."

"How many of the little ones are there?" Ayesha asked.

"Thousands of them; the inner comb is simply packed with them. Wait; I'll show you."

He rose and went away, returning with a sheaf of photo-enlargements and a number of blocks of lucite in which specimens were mounted. Everybody examined them. Anna de Jong, as a practicing psychologist, had an M.D. and to get that she'd had to know a modicum of anatomy; she was puzzled.

"I can't understand how they hear with those things. I'll grant that the membranes will respond to sound, but I can't see how they transmit it."

"But they do hear," Meillard said. "Their musical instruments, their reactions to our voices, the way they are affected by sounds like gunfire--"

"They hear, but they don't hear in the same way we do," Fayon replied. "If you can't be convinced by anything else, look at these things, and compare them with the structure of the human ear, or the ear of any member of any other sapient race we're ever contacted. That's what I've been saying from the beginning."

"They have sound-perception to an extent that makes ours look almost like deafness," Ayesha Keithley said. "I
wish I could design a sound-detector one-tenth as good as this must be."

Yes. The way the Lord Mayor said fwoonk and the way Paul Meillard said it sounded entirely different to
them. Of course, fwoonk and pwink and tweelt and kroosh sounded alike to them, but let's don't be too picky about
things.

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There were no hot showers that evening; Dave Questell's gang had trouble with the pump and needed some
new parts made up aboard the ship. They were still working on it the next morning. He had meant to start teaching
Sonny blacksmithing, but during the evening Lillian and Anna had decided to try teaching Mom a nonphonetic,
ideographic, alphabet, and in the morning they co-opted Sonny to help. Deprived of his disciple, he strolled over to
watch the work on the pump. About twenty Svants had come in from the fields and were also watching, from the
meadow.

After a while, the job was finished. The petty officer in charge of the work pushed in the switch, and the pump
started, sucking dry with a harsh racket. The natives twittered in surprise. Then the water came, and the pump settled
down to a steady thugg-thugg, thugg-thugg.

The Svants seemed to like the new sound; they grimaced in pleasure and moved closer; within forty or fifty
feet, they all squatted on the ground and sat entranced. Others came in from the fields, drawn by the sound. They,
too, came up and squatted, until there was a semicircle of them. The tank took a long time to fill; until it did, they all
sat immobile and fascinated. Even after it stopped, many remained, hoping that it would start again. Paul Meillard
began wondering, a trifle uneasily, if that would happen every time the pump went on.

"They get a positive pleasure from it. It affects them the same way Luis' voice does."

"Mean I have a voice like a pump?" Gofredo demanded.

"Well, I'm going to find out," Ayesha Keithley said. "The next time that starts, I'm going to make a recording,
and compare it with your voice-recording. I'll give five to one there'll be a similarity."

Questell got the foundation for the sonics lab dug, and began pouring concrete. That took water, and the pump
ran continuously that afternoon. Concrete-mixing took more water the next day, and by noon the whole village
population, down to the smallest child, was massed at the pumphouse, enthralled. Mom was snared by the sound like
any of the rest; only Sonny was unaffected. Lillian and Ayesha compared recordings of the voices of the team with
the pump-sound; in Gofredo's they found an identical frequency-pattern.

"We'll need the new apparatus to be positive about it, but it's there, all right," Ayesha said. "That's why Luis'
voice pleases them."

"That tags me; Old Pump-Mouth," Gofredo said. "It'll get all through the Corps, and they'll be calling me that
when I'm a four-star general, if I live that long."

Meillard was really worried, now. So was Bennet Fayon. He said so that afternoon at cocktail time.

"It's an addiction," he declared. "Once they hear it, they have no will to resist; they just squat and listen. I don't
know what it's doing to them, but I'm scared of it."

"I know one thing it's doing," Meillard said. "It's keeping them from their work in the fields. For all we know, it
may cause them to lose a crop they need badly for subsistence."

* * * * *

The native they had come to call the Lord Mayor evidently thought so, too. He was with the others, the next
morning, squatting with his staff across his knees, as bemused as any of them, but when the pump stopped he rose
and approached a group of Terrans, launching into what could only be an impassioned tirade. He pointed with his
staff to the pump house, and to the semicircle of still motionless villagers. He pointed to the fields, and back to the
people, and to the pump house again, gesturing vehemently with his other hand.

You make the noise. My people will not work while they hear it. The fields lie untended. Stop the noise, and let
my people work.

"Shut down the pump, Dave!" Meillard called out. "Cut the power off."

The thugg-thugg-ing stopped. The Lord Mayor rose, made an odd salaamlike bow toward the Terrans, and then
turned on the people, striking with his staff and shrieking at them. A few got to their feet and joined him, screaming,
pushing, tugging. Others joined. In a little while, they were all on their feet, straggling away across the fields.

Dave Questell wanted to know what it meant; Meillard explained.

"Well, what are we going to do for water?" the Navy engineer asked.

"Soundproof the pump house. You can do that, can't you?"
"Sure. Mound it over with earth. We'll have that done in a few hours."

That started Gofredo worrying. "This happens every time we colonize an inhabited planet. We give the natives something new. Then we find out it's bad for them, and we try to take it away from them. And then the knives come out, and the shooting starts."

Luis Gofredo was also a specialist, speaking on his subject.

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While they were at lunch, Charley Loughran screened in from the other camp and wanted to talk to Bennet Fayon.

"A funny thing, Bennet. I took a shot at a bird ... no, a flying mammal ... and dropped it. It was dead when it hit the ground, but there isn't a mark on it. I want you to do an autopsy, and find out how I can kill things by missing them."

"How far away was it?"

"Call it forty feet; no more."

"What were you using, Charley?" Ayesha Keithley called from the table.

"Eight-point-five Mars-Consolidated pistol," Loughran said. "I'd laid my shotgun down and walked away from it--"

"Twelve hundred foot-seconds," Ayesha said. "Bow-wave as well as muzzle-blast."

"You think the report was what did it?" Fayon asked.

"You want to bet it didn't?" she countered.

Nobody did.

* * * * *

Mom was sulky. She didn't like what Dave Questell's men were doing to the nice-noise-place. Ayesha and Lillian consoled her by taking her into the soundproofed room and playing the recording of the pump-noise for her. Sonny couldn't care less, one way or another; he spent the afternoon teaching Mark Howell what the marks on paper meant. It took a lot of signs and play-acting. He had learned about thirty ideographs; by combining them and drawing little pictures, he could express a number of simple ideas. There was, of course, a limit to how many of those things anybody could learn and remember--look how long it took an Old Terran Chinese scribe to learn his profession--but it was the beginning of a method of communication.

Questell got the pump house mounded over. Ayesha came out and tried a sound-meter, and also Mom, on it while the pump was running. Neither reacted.

A good many Svants were watching the work. They began to demonstrate angrily. A couple tried to interfere and were knocked down with rifle butts. The Lord Mayor and his Board of Aldermen came out with the big horn and harangued them at length, and finally got them to go back to the fields. As nearly as anybody could tell, he was friendly to and co-operative with the Terrans. The snooper over the village reported excitement in the plaza.

Bennet Fayon had taken an airjeep to the other camp immediately after lunch. He was back by 1500, accompanied by Loughran. They carried a cloth-wrapped package into Fayon's dissecting-room. At cocktail time, Paul Meillard had to go and get them.

"Sorry," Fayon said, joining the group. "Didn't notice how late it was getting. We're still doing a post on this svant-bat; that's what Charley's calling it, till we get the native name."

"The immediate cause of death was spasmodic contraction of every muscle in the thing's body; some of them were partly relaxed before we could get to work on it, but not completely. Every bone that isn't broken is dislocated; a good many both. There is not the slightest trace of external injury. Everything was done by its own muscles." He looked around. "I hope nobody covered Ayesha's bet, after I left. If they did, she collects. The large outer membranes in the comb seem to be unaffected, but there is considerable compression of the small round ones inside, in just one area, and more on the left side than on the right. Charley says it was flying across in front of him from left to right."

"The receptor-area responding to the frequencies of the report," Ayesha said.

Anna de Jong made a passing gesture toward Fayon. "The baby's yours, Bennet," she said. "This isn't psychosomatic fracture."

"Don't be too premature about it, Anna. I think that's more or less what you have, here."

Everybody looked at him, surprised. His subject was comparative technology. The bio and psycho-sciences were completely outside his field.

"A lot of things have been bothering me, ever since the first contact. I'm beginning to think I'm on the edge of understanding them, now. Bennet, the higher life-forms here--the people, and that domsee, and Charley's svant-bat--are structurally identical with us. I don't mean gross structure, like ears and combs. I mean molecular and cellular and tissue structure. Is that right?"
Fayon nodded. "Biology on this planet is exactly Terra type. Yes. With adequate safeguards, I'd even say you could make a viable tissue-graft from a Svant to a Terran, or vice versa."

"Ayesha, would the sound waves from that pistol-shot in any conceivable way have the sort of physical effect we're considering?"

"Absolutely not," she said, and Luis Gofredo said: "I've been shot at and missed with pistols at closer range than that."

"Then it was the effect on the animal's nervous system."

Anna shrugged. "It's still Bennet's baby. I'm a psychologist, not a neurologist."

"What I've been saying, all along," Fayon reiterated complacently. "Their hearing is different from ours. This proves it.

"It proves that they don't hear at all."

He had expected an explosion; he wasn't disappointed. They all contradicted him, many derisively. Signal reactions. Only Paul Meillard made the semantically appropriate response:

"What do you mean, Mark?"

"They don't hear sound; they feel it. You all saw what they have inside their combs. Those things don't transmit sound like the ears of any sound-sensitive life-form we've ever seen. They transform sound waves into tactile sensations."

Fayon cursed, slowly and luridly. Anna de Jong looked at him wide-eyed. He finished his cocktail and poured another. In the snooper screen, what looked like an indignation meeting was making uproar in the village plaza. Gofredo cut the volume of the speaker even lower.

"That would explain a lot of things," Meillard said slowly. "How hard it was for them to realize that we didn't understand when they talked to us. A punch in the nose feels the same to anybody. They thought they were giving us bodily feelings. They didn't know we were insensitive to them."

"But they do ... they do have a language," Lillian faltered. "They talk."

"Not the way we understand it. If they want to say, 'Me,' it's tickle-pinch-rub, even if it sounds like fwoonk to us, when it doesn't sound like pwink or tweelt or kroosh. The tactile sensations, to a Svant, feel no more different than a massage by four different hands. Analogous to a word pronounced by four different voices, to us. They'll have a code for expressing meanings in tactile sensation, just as we have a code for expressing meanings in audible sound."

"Except that when a Svant tells another, 'I am happy,' or 'I have a stomach-ache,' he makes the other one feel that way too," Anna said. "That would carry an awful lot more conviction. I don't imagine symptom-swapping is popular among Svants. Karl! You were nearly right, at that. This isn't telepathy, but it's a lot like it."

"So it is," Dorver, who had been mourning his departed telepathy theory, said brightly. "And look how it explains their society. Peaceful, everybody in quick agreement--" He looked at the screen and gulped. The Lord Mayor and his party had formed one clump, and the opposition was grouped at the other side of the plaza; they were screaming in unison at each other. "They make their decisions by endurance; the party that can resist the feelings of the other longest converts their opponents."

"Pure democracy," Gofredo declared. "Rule by the party that can make the most noise."

"And I'll bet that when they're sick, they go around chanting, 'I am well; I feel just fine!'" Anna said. "Autosuggestion would really work, here. Think of the feedback, too. One Svant has a feeling. He verbalizes it, and the sound of his own voice re-enforces it in him. It is induced in his hearers, and they verbalize it, re-enforcing it in themselves and in him. This could go on and on."

"Yes. It has. Look at their technology." He felt more comfortable, now he was on home ground again. "A friend of mine, speaking about a mutual acquaintance, once said, 'When they installed her circuits, they put in such big feeling circuits that there was no room left for any thinking circuits.' I think that's a perfect description of what I estimate Svant mentality to be. Take these bronze knives, and the musical instruments. Wonderful; the work of individuals trying to express feeling in metal or wood. But get an idea like the wheel, or even a pair of tongs? Poo! How would you state the First Law of Motion, or the Second Law of Thermodynamics, in tickle-pinch-rub terms? Sonny could grasp an idea like that. Sonny's handicap, if you call it that, cuts him off from feel-thinking; he can think logically instead of sensually."

He sipped his cocktail and continued: "I can understand why the village is mounded up, too. I realized that while I was watching Dave's gang bury the pump house. I'd been bothered by that, and by the absence of granaries for all the grain they raise, and by the number of people for so few and such small houses. I think the village is mostly underground, and the houses are just entrances, soundproofed, to shelter them from uncomfortable natural noises--thunderstorms, for instance."

The horn was braying in the snooper-screen speaker; somebody wondered what it was for. Gofredo laughed.
"I thought, at first, that it was a war-horn. It isn't. It's a peace-horn," he said. "Public tranquilizer. The first day, they brought it out and blew it at us to make us peaceable."

"Now I see why Sonny is rejected and persecuted," Anna was saying. "He must make all sorts of horrible noises that he can't hear ... that's not the word; we have none for it ... and nobody but his mother can stand being near him."

"Like me," Lillian said. "Now I understand. Just think of the most revolting thing that could be done to you physically; that's what I do to them every time I speak. And I always thought I had a nice voice," she added, pathetically.

"You have, for Terrans," Ayesha said. "For Svants, you'll just have to change it."

"But how--?"

"Use an analyzer; train it. That was why I took up sonics, in the first place. I had a voice like a crow with a sore throat, but by practicing with an analyzer, an hour a day, I gave myself an entirely different voice in a couple of months. Just try to get some pump-sound frequencies into it, like Luis'."

"But why? I'm no use here. I'm a linguist, and these people haven't any language that I could ever learn, and they couldn't even learn ours. They couldn't learn to make sounds, as sounds."

"You've been doing very good work with Mom on those ideographs," Meillard said. "Keep it up till you've taught her the Lingua Terra Basic vocabulary, and with her help we can train a few more. They can be our interpreters; we can write what we want them to say to the others. It'll be clumsy, but it will work, and it's about the only thing I can think of that will."

"And it will improve in time," Ayesha added. "And we can make vocoders and visibilizers. Paul, you have authority to requisition personnel from the ship's company. Draft me; I'll stay here and work on it."

The rumpus in the village plaza was getting worse. The Lord Mayor and his adherents were being out-shouted by the opposition.

"Better do something about that in a hurry, Paul, if you don't want a lot of Svants shot," Gofredo said. "Give that another half hour and we'll have visitors, with bows and spears."

"Ayesha, you have a recording of the pump," Meillard said. "Load a record-player onto a jeep and fly over the village and play it for them. Do it right away. Anna, get Mom in here. We want to get her to tell that gang that from now on, at noon and for a couple of hours after sunset, when the work's done, there will be free public pump-concerts, over the village plaza."

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Ayesha and her warrant-officer helper and a Marine lieutenant went out hastily. Everybody else faced the screen to watch. In fifteen minutes, an airjeep was coming in on the village. As it circled low, a new sound, the steady thugg-thugg, thugg-thugg of the pump, began.

The yelling and twittering and the blaring of the peace-horn died out almost at once. As the jeep circled down to housetop level, the two contending faction-clumps broke apart; their component individuals moved into the center of the plaza and squatted, staring up, letting the delicious waves of sound caress them.

"Do we have to send a detail in a jeep to do that twice a day?" Gofredo asked. "We keep a snooper over the village; fit it with a loud-speaker and a timer; it can give them their thugg-thugg, on schedule, automatically."

"We might give the Lord Mayor a recording and a player and let him decide when the people ought to listen--if that's the word--to it," Dorver said. "Then it would be something of their own."

"No!" He spoke so vehemently that the others started. "You know what would happen? Nobody would be able to turn it off; they'd all be hypnotized, or doped, or whatever it is. They'd just sit in a circle around it till they starved to death, and when the power-unit gave out, the record-player would be surrounded by a ring of skeletons. We'll just have to keep on playing it for them ourselves. Terrans' Burden."

"That'll give us a sanction over them," Gofredo observed. "Extra thugg-thugg if they're very good; shut it off on them if they act nasty. And find out what Lillian has in her voice that the rest of us don't have, and make a good loud recording of that, and stash it away along with the rest of the heavy-weapons ammunition. You know, you're not going to have any trouble at all, when we go down-country to talk to the king or whatever. This is better than fire-water ever was."

"We must never misuse our advantage, Luis," Meillard said seriously. "We must use it only for their good."

He really meant it. Only--You had to know some general history to study technological history, and it seemed to him that that pious assertion had been made a few times before. Some of the others who had made it had really meant it, too, but that had made little difference in the long run.

Fayon and Anna were talking enthusiastically about the work ahead of them.

"I don't know where your subject ends and mine begins," Anna was saying. "We'll just have to handle it between us. What are we going to call it? We certainly can't call it hearing."
"Nonauditory sonic sense is the only thing I can think of," Fayon said. "And that's such a clumsy term."
"Mark; you thought of it first," Anna said. "What do you think?"
"Nonauditory sonic sense. It isn't any worse than Domesticated Type C, and that got cut down to size. Naudsonce."

To translate writings, you need a key to the code--and if the last writer of Martian died forty thousand years before the first writer of Earth was born ... how could the Martian be translated...?

Martha Dane paused, looking up at the purple-tinged copper sky. The wind had shifted since noon, while she had been inside, and the dust storm that was sweeping the high deserts to the east was now blowing out over Syrtis. The sun, magnified by the haze, was a gorgeous magenta ball, as large as the sun of Terra, at which she could look directly. Tonight, some of that dust would come sifting down from the upper atmosphere to add another film to what had been burying the city for the last fifty thousand years.

The red loess lay over everything, covering the streets and the open spaces of park and plaza, hiding the small houses that had been crushed and pressed flat under it and the rubble that had come down from the tall buildings when roofs had caved in and walls had toppled outward. Here, where she stood, the ancient streets were a hundred to a hundred and fifty feet below the surface; the breach they had made in the wall of the building behind her had opened into the sixth story. She could look down on the cluster of prefabricated huts and sheds, on the brush-grown flat that had been the waterfront when this place had been a seaport on the ocean that was now Syrtis Depression; already, the bright metal was thinly coated with red dust. She thought, again, of what clearing this city would mean, in terms of time and labor, of people and supplies and equipment brought across fifty million miles of space. They'd have to use machinery; there was no other way it could be done. Bulldozers and power shovels and draglines; they were fast, but they were rough and indiscriminate. She remembered the digs around Harappa and Mohenjo-Daro, in the Indus Valley, and the careful, patient native laborers--the painstaking foremen, the pickmen and spademen, the long files of basketmen carrying away the earth. Slow and primitive as the civilization whose ruins they were uncovering, yes, but she could count on the fingers of one hand the times one of her pickmen had damaged a valuable object in the ground. If it hadn't been for the underpaid and uncomplaining native laborer, archaeology would still be back where Wincklemann had found it. But on Mars there was no native labor; the last Martian had died five hundred centuries ago.

Something started banging like a machine gun, four or five hundred yards to her left. A solenoid jack-hammer; Tony Lattimer must have decided which building he wanted to break into next. She became conscious, then, of the awkward weight of her equipment, and began redistributing it, shifting the straps of her oxy-tank pack, slinging the camera from one shoulder and the board and drafting tools from the other, gathering the notebooks and sketchbooks under her left arm. She started walking down the road, over hillocks of buried rubble, around snags of wall jutting up out of the loess, past buildings still standing, some of them already breached and explored, and across the brush-grown flat to the huts.

There were ten people in the main office room of Hut One when she entered. As soon as she had disposed of her oxygen equipment, she lit a cigarette, her first since noon, then looked from one to another of them. Old Selim von Ohlhorst, the Turco-German, one of her two fellow archaeologists, sitting at the end of the long table against the farther wall, smoking his big curved pipe and going through a looseleaf notebook. The girl ordnance officer, Sachiko Koremitsu, between two droplights at the other end of the table, her head bent over her work. Colonel Hubert Penrose, the Space Force CO, and Captain Field, the intelligence officer, listening to the report of one of the airdyne pilots, returned from his afternoon survey flight. A couple of girl lieutenants from Signals, going over the script of the evening telecast, to be transmitted to the Cyran, on orbit five thousand miles off planet and relayed from thence to Terra via Lunar. Sid Chamberlain, the Trans-Space News Service man, was with them. Like Selim and herself, he was a civilian; he was advertising the fact with a white shirt and a sleeveless blue sweater. And Major Lindemann, the engineer officer, and one of his assistants, arguing over some plans on a drafting board. She hoped, drawing a pint of hot water to wash her hands and sponge off her face, that they were doing something about
the pipeline.

She started to carry the notebooks and sketchbooks over to where Selim von Ohlmhorst was sitting, and then, as she always did, she turned aside and stopped to watch Sachiko. The Japanese girl was restoring what had been a book, fifty thousand years ago; her eyes were masked by a binocular loup, the black headband invisible against her glossy black hair, and she was picking delicately at the crumbled page with a hair-fine wire set in a handle of copper tubing. Finally, loosening a particle as tiny as a snowflake, she grasped it with tweezers, placed it on the sheet of transparent plastic on which she was reconstructing the page, and set it with a mist of fixative from a little spraygun. It was a sheer joy to watch her; every movement was as graceful and precise as though done to music after being rehearsed a hundred times.

"Hello, Martha. It isn't cocktail-time yet, is it?" The girl at the table spoke without raising her head, almost without moving her lips, as though she were afraid that the slightest breath would disturb the flaky stuff in front of her.

"No, it's only fifteen-thirty. I finished my work, over there. I didn't find any more books, if that's good news for you."

Sachiko took off the loup and leaned back in her chair, her palms cupped over her eyes.

"No, I like doing this. I call it micro-jigsaw puzzles. This book, here, really is a mess. Selim found it lying open, with some heavy stuff on top of it; the pages were simply crushed." She hesitated briefly. "If only it would mean something, after I did it."

There could be a faintly critical overtone to that. As she replied, Martha realized that she was being defensive.

"It will, some day. Look how long it took to read Egyptian hieroglyphics, even after they had the Rosetta Stone."

Sachiko smiled. "Yes. I know. But they did have the Rosetta Stone."

"And we don't. There is no Rosetta Stone, not anywhere on Mars. A whole race, a whole species, died while the first Cro-Magnon cave-artist was daubing pictures of reindeer and bison, and across fifty thousand years and fifty million miles there was no bridge of understanding.

"We'll find one. There must be something, somewhere, that will give us the meaning of a few words, and we'll use them to try meaning out of more words, and so on. We may not live to learn this language, but we'll make a start, and some day somebody will."

Sachiko took her hands from her eyes, being careful not to look toward the unshaded light, and smiled again. This time Martha was sure that it was not the Japanese smile of politeness, but the universally human smile of friendship.

"I hope so, Martha: really I do. It would be wonderful for you to be the first to do it, and it would be wonderful for all of us to be able to read what these people wrote. It would really bring this dead city to life again." The smile faded slowly. "But it seems so hopeless."

"You haven't found any more pictures?"

Sachiko shook her head. Not that it would have meant much if she had. They had found hundreds of pictures with captions; they had never been able to establish a positive relationship between any pictured object and any printed word. Neither of them said anything more, and after a moment Sachiko replaced the loup and bent her head forward over the book.

* * * * *

Selim von Ohlmhorst looked up from his notebook, taking his pipe out of his mouth.

"Everything finished, over there?" he asked, releasing a puff of smoke.

"Such as it was." She laid the notebooks and sketches on the table. "Captain Gicquel's started airsealing the building from the fifth floor down, with an entrance on the sixth; he'll start putting in oxygen generators as soon as that's done. I have everything cleared up where he'll be working."

Colonel Penrose looked up quickly, as though making a mental note to attend to something later. Then he returned his attention to the pilot, who was pointing something out on a map.

Von Ohlmhorst nodded. "There wasn't much to it, at that," he agreed. "Do you know which building Tony has decided to enter next?"

"The tall one with the conical thing like a candle extinguisher on top, I think. I heard him drilling for the blasting shots over that way."

"Well, I hope it turns out to be one that was occupied up to the end."

The last one hadn't. It had been stripped of its contents and fittings, a piece of this and a bit of that, haphazardly, apparently over a long period of time, until it had been almost gutted. For centuries, as it had died, this city had been consuming itself by a process of auto-cannibalism. She said something to that effect.

"Yes. We always find that--except, of course, at places like Pompeii. Have you seen any of the other Roman
And if we learn to read their language, we'll learn the whole story, not just the obituary. She hesitated, not putting the thought into words. "We'll find that, sometime, Selim," she said, then looked at her watch. "I'm going to get some more work done on my lists, before dinner."

For an instant, the old man's face stiffened in disapproval; he started to say something, thought better of it, and put his pipe back into his mouth. The brief wrinkling around his mouth and the twitch of his white mustache had been enough, however; she knew what he was thinking. She was wasting time and effort, he believed; time and effort belonging not to herself but to the expedition. He could be right, too, she realized. But he had to be wrong; there had to be a way to do it. She turned from him silently and went to her own packing-case seat, at the middle of the table.

* * * * *

Photographs, and photostats of restored pages of books, and transcripts of inscriptions, were piled in front of her, and the notebooks in which she was compiling her lists. She sat down, lighting a fresh cigarette, and reached over to a stack of unexamined material, taking off the top sheet. It was a photostat of what looked like the title page and contents of some sort of a periodical. She remembered it; she had found it herself, two days before, in a closet in the basement of the building she had just finished examining.

She sat for a moment, looking at it. It was readable, in the sense that she had set up a purely arbitrary but consistently pronounceable system of phonetic values for the letters. The long vertical symbols were vowels. There were only ten of them; not too many, allowing separate characters for long and short sounds. There were twenty of the short horizontal letters, which meant that sounds like -ng or -ch or -sh were single letters. The odds were millions to one against her system being anything like the original sound of the language, but she had listed several thousand Martian words, and she could pronounce all of them.

And that was as far as it went. She could pronounce between three and four thousand Martian words, and she couldn't assign a meaning to one of them. Selim von Ohlhorst believed that she never would. So did Tony Lattimer, and he was a great deal less reticent about saying so. So, she was sure, did Sachiko Koremitsu. There were times, now and then, when she began to be afraid that they were right.

The letters on the page in front of her began squirming and dancing, slender vowels with fat little consonants. They did that, now, every night in her dreams. And there were other dreams, in which she read them as easily as English; waking, she would try desperately and vainly to remember. She blinked, and looked away from the photostatted page; when she looked back, the letters were behaving themselves again. There were three words at the top of the page, over-and-underlined, which seemed to be the Martian method of capitalization. Mastharnorvod Tadavas Sornhulva. She pronounced them mentally, leafing through her notebooks to see if she had encountered them before, and in what contexts. All three were listed. In addition, masthar was a fairly common word, and so was norvod, and so was nor, but -vod was a suffix and nothing but a suffix. Davas, was a word, too, and ta- was a common prefix; sorn and hulva were both common words. This language, she had long ago decided, must be something like German; when the Martians had needed a new word, they had just pasted a couple of existing words together. It would probably turn out to be a grammatical horror. Well, they had published magazines, and one of them had been called Mastharnorvod Tadavas Sornhulva. She wondered if it had been something like the Quarterly Archaeological Review, or something more on the order of Sexy Stories.

A smaller line, under the title, was plainly the issue number and date; enough things had been found numbered in series to enable her to identify the numerals and determine that a decimal system of numeration had been used. This was the one thousand and seven hundred and fifty-fourth issue, for Doma, 14837; then Doma must be the name of one of the Martian months. The word had turned up several times before. She found herself puffing furiously on her cigarette as she leafed through notebooks and piles of already examined material.

* * * * *

Sachiko was speaking to somebody, and a chair scraped at the end of the table. She raised her head, to see a big man with red hair and a red face, in Space Force green, with the single star of a major on his shoulder, sitting down. Ivan Fitzgerald, the medic. He was lifting weights from a book similar to the one the girl ordnance officer was restoring.

"Haven't had time, lately," he was saying, in reply to Sachiko's question. "The Finchley girl's still down with

cities in Italy?" he asked. "Minturnae, for instance? First the inhabitants tore down this to repair that, and then, after they had vacated the city, other people came along and tore down what was left, and burned the stones for lime, or crushed them to mend roads, till there was nothing left but the foundation traces. That's where we are fortunate; this is one of the places where the Martian race perished, and there were no barbarians to come later and destroy what they had left." He puffed slowly at his pipe. "Some of these days, Martha, we are going to break into one of these buildings and find that it was one in which the last of these people died. Then we will learn the story of the end of this civilization."

"We'll find that, sometime, Selim," she said, then looked at her watch. "I'm going to get some more work done on my lists, before dinner."
whatever it is she has, and it's something I haven't been able to diagnose yet. And I've been checking on bacteria cultures, and in what spare time I have, I've been dissecting specimens for Bill Chandler. Bill's finally found a mammal. Looks like a lizard, and it's only four inches long, but it's a real warm-blooded, gamogenetic, placental, viviparous mammal. Burrows, and seems to live on what pass for insects here."

"Is there enough oxygen for anything like that?" Sachiko was asking.

"Seems to be, close to the ground." Fitzgerald got the headband of his loup adjusted, and pulled it down over his eyes. "He found this thing in a ravine down on the sea bottom--Ha, this page seems to be intact; now, if I can get it out all in one piece--"

He went on talking inaudibly to himself, lifting the page a little at a time and sliding one of the transparent plastic sheets under it, working with minute delicacy. Not the delicacy of the Japanese girl's small hands, moving like the paws of a cat washing her face, but like a steam-hammer cracking a peanut. Field archaeology requires a certain delicacy of touch, too, but Martha watched the pair of them with envious admiration. Then she turned back to her own work, finishing the table of contents.

The next page was the beginning of the first article listed; many of the words were unfamiliar. She had the impression that this must be some kind of scientific or technical journal; that could be because such publications made up the bulk of her own periodical reading. She doubted if it were fiction; the paragraphs had a solid, factual look.

At length, Ivan Fitzgerald gave a short, explosive grunt.

"Ha! Got it!"

She looked up. He had detached the page and was cementing another plastic sheet onto it.

"Any pictures?" she asked.

"None on this side. Wait a moment." He turned the sheet. "None on this side, either." He sprayed another sheet of plastic to sandwich the page, then picked up his pipe and relighted it.

"I get fun out of this, and it's good practice for my hands, so don't think I'm complaining," he said, "but, Martha, do you honestly think anybody's ever going to get anything out of this?"

Sachiko held up a scrap of the silicone plastic the Martians had used for paper with her tweezers. It was almost an inch square.

"Look; three whole words on this piece," she crowed. "Ivan, you took the easy book."

Fitzgerald wasn't being sidetracked. "This stuff's absolutely meaningless," he continued. "It had a meaning fifty thousand years ago, when it was written, but it has none at all now."

She shook her head. "Meaning isn't something that evaporates with time," she argued. "It has just as much meaning now as it ever had. We just haven't learned how to decipher it."

"That seems like a pretty pointless distinction," Selim von Ohlmhorst joined the conversation. "There no longer exists a means of deciphering it."

"We'll find one." She was speaking, she realized, more in self-encouragement than in controversy.

"How? From pictures and captions? We've found captioned pictures, and what have they given us? A caption is intended to explain the picture, not the picture to explain the caption. Suppose some alien to our culture found a picture of a man with a white beard and mustache sawing a billet from a log. He would think the caption meant, 'Man Sawing Wood.' How would he know that it was really 'Wilhelm II in Exile at Doorn'?"

Sachiko had taken off her loup and was lighting a cigarette.

"I can think of pictures intended to explain their captions," she said. "These picture language-books, the sort we use in the Service--little line drawings, with a word or phrase under them."

"Well, of course, if we found something like that," von Ohlmhorst began.

* * * * *

"Michael Ventris found something like that, back in the Fifties," Hubert Penrose's voice broke in from directly behind her.

She turned her head. The colonel was standing by the archaeologists' table; Captain Field and the airdyne pilot had gone out.

"He found a lot of Greek inventories of military stores," Penrose continued. "They were in Cretan Linear B script, and at the head of each list was a little picture, a sword or a helmet or a cooking tripod or a chariot wheel. That's what gave him the key to the script."

"Colonel's getting to be quite an archaeologist," Fitzgerald commented. "We're all learning each others' specialties, on this expedition."

"I heard about that long before this expedition was even contemplated." Penrose was tapping a cigarette on his gold case. "I heard about that back before the Thirty Days' War, at Intelligence School, when I was a lieutenant. As a feat of cryptanalysis, not an archaeological discovery."

“Yes, cryptanalysis,” von Ohlmhorst pounced. “The reading of a known language in an unknown form of writing. Ventris’ lists were in the known language, Greek. Neither he nor anybody else ever read a word of the Cretan language until the finding of the Greek-Cretan bilingual in 1963, because only with a bilingual text, one language already known, can an unknown ancient language be learned. And what hope, I ask you, have we of finding anything like that here? Martha, you’ve been working on these Martian texts ever since we landed here—for the last six months. Tell me, have you found a single word to which you can positively assign a meaning?”

“Yes, I think I have one.” She was trying hard not to sound too exultant. “Doma. It’s the name of one of the months of the Martian calendar.”

“Where did you find that?” von Ohlmhorst asked. “And how did you establish—?”

“Here.” She picked up the photostat and handed it along the table to him. “I’d call this the title page of a magazine.”

He was silent for a moment, looking at it. “Yes. I would say so, too. Have you any of the rest of it?”

“I’m working on the first page of the first article, listed there. Wait till I see; yes, here’s all I found, together, here.” She told him where she had gotten it. “I just gathered it up, at the time, and gave it to Geoffrey and Rosita to photostat; this is the first I’ve really examined it.”

The old man got to his feet, brushing tobacco ashes from the front of his jacket, and came to where she was sitting, laying the title page on the table and leafing quickly through the stack of photostats.

“Mastharnorvod Tadavas Sornhulva. Wonder what it means. But you’re right about the date—Doma seems to be the name of a month. Yes, you have a word, Dr. Dane.”

Sid Chamberlain, seeing that something unusual was going on, had come over from the table at which he was working. After examining the title page and some of the inside pages, he began whispering into the stenophone he had taken from his belt.

“Don’t try to blow this up to anything big, Sid,” she cautioned. “All we have is the name of a month, and Lord only knows how long it’ll be till we even find out which month it was.”

“Well, it’s a start, isn’t it?” Penrose argued. “Grotefend only had the word for ‘king’ when he started reading Persian cuneiform.”

“But I don’t have the word for month; just the name of a month. Everybody knew the names of the Persian kings, long before Grotefend.”

“that’s not the story,” Chamberlain said. “What the public back on Terra will be interested in is finding out that the Martians published magazines, just like we do. Something familiar; make the Martians seem more real. More human.”

Three men had come in, and were removing their masks and helmets and oxy-tanks, and peeling out of their quilted coveralls. Two were Space Force lieutenants; the third was a youngish civilian with close-cropped blond hair, in a checked woolen shirt. Tony Lattimer and his helpers.

“Don’t tell me Martha finally got something out of that stuff?” he asked, approaching the table. He might have been commenting on the antics of the village half-wit, from his tone.

“Yes; the name of one of the Martian months.” Hubert Penrose went on to explain, showing the photostat.

Tony Lattimer took it, glanced at it, and dropped it on the table.

“Sounds plausible, of course, but just an assumption. That word may not be the name of a month, at all—could mean ‘published’ or ‘authorized’ or ‘copyrighted’ or anything like that. Fact is, I don’t think it’s more than a wild guess that that thing’s anything like a periodical.” He dismissed the subject and turned to Penrose. “I picked out the next
building to enter; that tall one with the conical thing on top. It ought to be in pretty good shape inside; the conical top wouldn't allow dust to accumulate, and from the outside nothing seems to be caved in or crushed. Ground level's higher than the other one, about the seventh floor. I found a good place and drilled for the shots; tomorrow I'll blast a hole in it, and if you can spare some people to help, we can start exploring it right away."

"Yes, of course, Dr. Lattimer. I can spare about a dozen, and I suppose you can find a few civilian volunteers," Penrose told him. "What will you need in the way of equipment?"

"Oh, about six demolition-packets; they can all be shot together. And the usual thing in the way of lights, and breaking and digging tools, and climbing equipment in case we run into broken or doubtful stairways. We'll divide into two parties. Nothing ought to be entered for the first time without a qualified archaeologist along. Three parties, if Martha can tear herself away from this catalogue of systematized incomprehensibilities she's making long enough to do some real work."

She felt her chest tighten and her face become stiff. She was pressing her lips together to lock in a furious retort when Hubert Penrose answered for her.

"Dr. Dane's been doing as much work, and as important work, as you have," he said brusquely. "More important work, I'd be inclined to say."

Von Ohlmhorst was visibly distressed; he glanced once toward Sid Chamberlain, then looked hastily away from him. Afraid of a story of dissension among archaeologists getting out.

"Working out a system of pronunciation by which the Martian language could be transliterated was a most important contribution," he said. "And Martha did that almost unassisted."

"Unassisted by Dr. Lattimer, anyway," Penrose added. "Captain Field and Lieutenant Koremitsu did some work, and I helped out a little, but nine-tenths of it she did herself."

"Purely arbitrary," Lattimer disdained. "Why, we don't even know that the Martians could make the same kind of vocal sounds we do."

"Oh, yes, we do," Ivan Fitzgerald contradicted, safe on his own ground. "I haven't seen any actual Martian skulls--these people seem to have been very tidy about disposing of their dead--but from statues and busts and pictures I've seen. I'd say that their vocal organs were identical with our own."

"Well, grant that. And grant that it's going to be impressive to rattle off the names of Martian notables whose statues we find, and that if we're ever able to attribute any placenames, they'll sound a lot better than this horse-doctors' Latin the old astronomers splashed all over the map of Mars," Lattimer said. "What I object to is her wasting time on this stuff, of which nobody will ever be able to read a word if she fiddles around with those lists till there's another hundred feet of loess on this city, when there's so much real work to be done and we're as shorthanded as we are."

That was the first time that had come out in just so many words. She was glad Lattimer had said it and not Selim von Ohlmhorst.

"What you mean," she retorted, "is that it doesn't have the publicity value that digging up statues has."

For an instant, she could see that the shot had scored. Then Lattimer, with a side glance at Chamberlain, answered:

"What I mean is that you're trying to find something that any archaeologist, yourself included, should know doesn't exist. I don't object to your gambling your professional reputation and making a laughing stock of yourself; what I object to is that the blunders of one archaeologist discredit the whole subject in the eyes of the public."

That seemed to be what worried Lattimer most. She was framing a reply when the communication-outlet whistled shrilly, and then squawked: "Cocktail time! One hour to dinner; cocktails in the library, Hut Four!"

The library, which was also lounge, recreation room, and general gathering-place, was already crowded; most of the crowd was at the long table topped with sheets of glasslike plastic that had been wall panels out of one of the ruined buildings. She poured herself what passed, here, for a martini, and carried it over to where Selim von Ohlmhorst was sitting alone.

For a while, they talked about the building they had just finished exploring, then drifted into reminiscences of their work on Terra--von Ohlmhorst's in Asia Minor, with the Hittite Empire, and hers in Pakistan, excavating the cities of the Harappa Civilization. They finished their drinks--the ingredients were plentiful; alcohol and flavoring extracts synthesized from Martian vegetation--and von Ohlmhorst took the two glasses to the table for refills.

"You know, Martha," he said, when he returned, "Tony was right about one thing. You are gambling your professional standing and reputation. It's against all archaeological experience that a language so completely dead as this one could be deciphered. There was a continuity between all the other ancient languages--by knowing Greek, Champollion learned to read Egyptian; by knowing Egyptian, Hittite was learned. That's why you and your colleagues have never been able to translate the Harappa hieroglyphics; no such continuity exists there. If you insist
that this utterly dead language can be read, your reputation will suffer for it."

"I heard Colonel Penrose say, once, that an officer who's afraid to risk his military reputation seldom makes
much of a reputation. It's the same with us. If we really want to find things out, we have to risk making mistakes.
And I'm a lot more interested in finding things out than I am in my reputation."

She glanced across the room, to where Tony Lattimer was sitting with Gloria Standish, talking earnestly, while
Gloria sipped one of the counterfeit martinis and listened. Gloria was the leading contender for the title of Miss
Mars, 1996, if you liked big bosomy blondes, but Tony would have been just as attentive to her if she'd looked like
the Wicked Witch in "The Wizard of Oz." because Gloria was the Pan-Federation Telecast System commentator
with the expedition.

"I know you are," the old Turco-German was saying. "That's why, when they asked me to name another
archaeologist for this expedition, I named you."

He hadn't named Tony Lattimer; Lattimer had been pushed onto the expedition by his university. There'd been
a lot of high-level string-pulling to that; she wished she knew the whole story. She'd managed to keep clear of
universities and university politics; all her digs had been sponsored by non-academic foundations or art museums.

"You have an excellent standing: much better than my own, at your age. That's why it disturbs me to see you
jeopardizing it by this insistence that the Martian language can be translated. I can't, really, see how you can hope to
succeed."

She shrugged and drank some more of her cocktail, then lit another cigarette. It was getting tiresome to try to
verbalize something she only felt.

"Neither do I, now, but I will. Maybe I'll find something like the picture-books Sachiko was talking about. A
child's primer, maybe; surely they had things like that. And if I don't. I'll find something else. We've only been here
six months. I can wait the rest of my life, if I have to, but I'll do it sometime."

"I can't wait so long," von Ohlmhorst said. "The rest of my life will only be a few years, and when the
Schiaparelli orbits in, I'll be going back to Terra on the Cyrano."

"I wish you wouldn't. This is a whole new world of archaeology. Literally."

"Yes." He finished the cocktail and looked at his pipe as though wondering whether to re-light it so soon before
dinner, then put it in his pocket. "A whole new world--but I've grown old, and it isn't for me. I've spent my life
studying the Hittites. I can speak the Hittite language, though maybe King Muwatallis wouldn't be able to
understand my modern Turkish accent. But the things I'd have to learn here--chemistry, physics, engineering, how to
run analytic tests on steel girders and beryllo-silver alloys and plastics and silicones. I'm more at home with a
civilization that rode in chariots and fought with swords and was just learning how to work iron. Mars is for young
people. This expedition is a cadre of leadership--not only the Space Force people, who'll be the commanders of the
main expedition, but us scientists, too. And I'm just an old cavalry general who can't learn to command tanks and
aircraft. You'll have time to learn about Mars. I won't."

His reputation as the dean of Hittitologists was solid and secure, too, she added mentally. Then she felt
ashamed of the thought. He wasn't to be classed with Tony Lattimer.

"All I came for was to get the work started," he was continuing. "The Federation Government felt that an old
hand should do that. Well, it's started, now; you and Tony and whoever come out on the Schiaparelli must carry it
on. You said it, yourself; you have a whole new world. This is only one city, of the last Martian civilization. Behind
this, you have the Late Upland Culture, and the Canal Builders, and all the civilizations and races and empires
before them, clear back to the Martian Stone Age." He hesitated for a moment. "You have no idea what all you have
to learn, Martha. This isn't the time to start specializing too narrowly."

* * * * *

They all got out of the truck and stretched their legs and looked up the road to the tall building with the queer
conical cap askew on its top. The four little figures that had been busy against its wall climbed into the jeep and
started back slowly, the smallest of them, Sachiko Koremitsu, paying out an electric cable behind. When it pulled up
beside the truck, they climbed out; Sachiko attached the free end of the cable to a nuclear-electric battery. At once,
dirty gray smoke and orange dust puffed out from the wall of the building, and, a second later, the multiple
explosion banged.

She and Tony Lattimer and Major Lindemann climbed onto the truck, leaving the jeep stand by the road. When
they reached the building, a satisfyingly wide breach had been blown in the wall. Lattimer had placed his shots
between two of the windows; they were both blown out along with the wall between, and lay unbroken on the
ground. Martha remembered the first building they had entered. A Space Force officer had picked up a stone and
thrown it at one of the windows, thinking that would be all they'd need to do. It had bounced back. He had drawn his
pistol--they'd all carried guns, then, on the principle that what they didn't know about Mars might easily hurt them--
and fired four shots. The bullets had ricocheted, screaming thinly; there were four coppery smears of jacket-metal on
the window, and a little surface spalling. Somebody tried a rifle; the 4000-f.s. bullet had cracked the glasslike pane
without penetrating. An oxyacetylene torch had taken an hour to cut the window out; the lab crew, aboard the ship,
were still trying to find out just what the stuff was.

Tony Lattimer had gone forward and was sweeping his flashlight back and forth, swearing petulantly, his voice
harshened and amplified by his helmet-speaker.

"I thought I was blasting into a hallway; this lets us into a room. Careful; there's about a two-foot drop to the
floor, and a lot of rubble from the blast just inside."

He stepped down through the breach; the others began dragging equipment out of the trucks--shovels and picks
and crowbars and sledges, portable floodlights, cameras, sketching materials, an extension ladder, even Alpinists'
ropes and crampons and pickaxes. Hubert Penrose wasshouldering something that looked like a surrealist machine
gun but which was really a nuclear-electric jack-hammer. Martha selected one of the spike-shod mountaineer's ice
axes, with which she could dig or chop or poke or pry or help herself over rough footing.

The windows, grimed and crusted with fifty millennia of dust, filtered in a dim twilight; even the breach in the
wall, in the morning shade, lighted only a small patch of floor. Somebody snapped on a floodlight, aiming it at the
ceiling. The big room was empty and bare; dust lay thick on the floor and reddened the once-white walls. It could
have been a large office, but there was nothing left in it to indicate its use.

"This one's been stripped up to the seventh floor!" Lattimer exclaimed. "Street level'll be cleaned out,
completely."

"Do for living quarters and shops, then," Lindemann said. "Added to the others, this'll take care of everybody
on the Schiaparelli."

"Seem to have been a lot of electric or electronic apparatus over along this wall," one of the Space Force
officers commented. "Ten or twelve electric outlets." He brushed the dusty wall with his glove, then scraped on the
floor with his foot. "I can see where things were pried loose."

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The door, one of the double sliding things the Martians had used, was closed. Selim von Ohlmhorst tried it, but
it was stuck fast. The metal latch-parts had frozen together, molecule bonding itself to molecule, since the door had
last been closed. Hubert Penrose came over with the jack-hammer, fitting a spear-point chisel into place. He set the
chisel in the joint between the doors, braced the hammer against his hip, and squeezed the trigger-switch. The
hammer banged briefly like the weapon it resembled, and the doors popped a few inches apart, then stuck. Enough
dust had worked into the recesses into which it was supposed to slide to block it on both sides.

That was old stuff; they ran into that every time they had to force a door, and they were prepared for it.
Somebody went outside and brought in a power-jack and finally one of the doors inched back to the door jamb. That
was enough to get the lights and equipment through: they all passed from the room to the hallway beyond. About
half the other doors were open; each had a number and a single word, Darfhulva, over it.

[ Illustration]

One of the civilian volunteers, a woman professor of natural ecology from Penn State University, was looking
up and down the hall.

"You know," she said, "I feel at home here. I think this was a college of some sort, and these were classrooms.
That word, up there; that was the subject taught, or the department. And those electronic devices, all where the class
would face them; audio-visual teaching aids."

"A twenty-five-story university?" Lattimer scoffed. "Why, a building like this would handle thirty thousand
students."

"Maybe there were that many. This was a big city, in its prime," Martha said, moved chiefly by a desire to
oppose Lattimer.

"Yes, but think of the snafu in the halls, every time they changed classes. It'd take half an hour to get everybody
back and forth from one floor to another." He turned to von Ohlmhorst. "I'm going up above this floor. This place
has been looted clean up to here, but there's a chance there may be something above," he said.

"I'll stay on this floor, at present," the Turco-German replied. "There will be much coming and going, and
dragging things in and out. We should get this completely examined and recorded first. Then Major Lindemann's
people can do their worst, here."

"Well, if nobody else wants it, I'll take the downstairs," Martha said.

"I'll go along with you," Hubert Penrose told her. "If the lower floors have no archaeological value, we'll turn
them into living quarters. I like this building: it'll give everybody room to keep out from under everybody else's
feet." He looked down the hall. "We ought to find escalators at the middle."

* * * * *

The hallway, too, was thick underfoot with dust. Most of the open rooms were empty, but a few contained
furniture, including small seat-desks. The original proponent of the university theory pointed these out as just what might be found in classrooms. There were escalators, up and down, on either side of the hall, and more on the intersecting passage to the right.

"That's how they handled the students, between classes," Martha commented. "And I'll bet there are more ahead, there."

They came to a stop where the hallway ended at a great square central hall. There were elevators, there, on two of the sides, and four escalators, still usable as stairways. But it was the walls, and the paintings on them, that brought them up short and staring.

They were clouded with dirt--she was trying to imagine what they must have looked like originally, and at the same time estimating the labor that would be involved in cleaning them--but they were still distinguishable, as was the word, Darfhulva, in golden letters above each of the four sides. It was a moment before she realized, from the murals, that she had at last found a meaningful Martian word. They were a vast historical panorama, clockwise around the room. A group of skin-clad savages squatting around a fire. Hunters with bows and spears, carrying a carcass of an animal slightly like a pig. Nomads riding long-legged, graceful mounts like hornless deer. Peasants sowing and reaping; mud-walled hut villages, and cities; processions of priests and warriors; battles with swords and bows, and with cannon and muskets; galleys, and ships with sails, and ships without visible means of propulsion, and aircraft. Changing costumes and weapons and machines and styles of architecture. A richly fertile landscape, gradually merging into barren deserts and bushlands--the time of the great planet-wide drought. The Canal Builders--men with machines recognizable as steam-shovels and derricks, digging and quarrying and driving across the empty plains with aqueducts. More cities--seaports on the shrinking oceans; dwindling, half-deserted cities; an abandoned city, with four tiny humanoid figures and a thing like a combat-car in the middle of a brush-grown plaza, they and their vehicle dwarfed by the huge lifeless buildings around them. She had not the least doubt; Darfhulva was History.

"Wonderful!" von Ohlmhorst was saying. "The entire history of this race. Why, if the painter depicted appropriate costumes and weapons and machines for each period, and got the architecture right, we can break the history of this planet into eras and periods and civilizations."

"You can assume they're authentic. The faculty of this university would insist on authenticity in the Darfhulva--History--Department," she said.

"Yes! Darfhulva--History! And your magazine was a journal of Sornhulva!" Penrose exclaimed. "You have a word, Martha!" It took her an instant to realize that he had called her by her first name, and not Dr. Dane. She wasn't sure if that weren't a bigger triumph than learning a word of the Martian language. Or a more auspicious start. "Alone, I suppose that hulva means something like science or knowledge, or study; combined, it would be equivalent to our 'ology. And darf would mean something like past, or old times, or human events, or chronicles."

"That gives you three words, Martha!" Sachiko jubilated. "You did it."

"Let's don't go too fast," Lattimer said, for once not derisively. "I'll admit that darfhulva is the Martian word for history as a subject of study; I'll admit that hulva is the general word and darf modifies it and tells us which subject is meant. But as for assigning specific meanings, we can't do that because we don't know just how the Martians thought, scientifically or otherwise."

He stopped short, startled by the blue-white light that blazed as Sid Chamberlain's Kliegettes went on. When the whirring of the camera stopped, it was Chamberlain who was speaking:

"This is the biggest thing yet; the whole history of Mars, stone age to the end, all on four walls. I'm taking this with the fast shutter, but we'll telecast it in slow motion, from the beginning to the end. Tony, I want you to do the voice for it--running commentary, interpretation of each scene as it's shown. Would you do that?"

Would he do that! Martha thought. If he had a tail, he'd be wagging it at the very thought.

"Well, there ought to be more murals on the other floors," she said. "Who wants to come downstairs with us?"

Sachiko did; immediately. Ivan Fitzgerald volunteered. Sid decided to go upstairs with Tony Lattimer, and Gloria Standish decided to go upstairs, too. Most of the party would remain on the seventh floor, to help Selim von Ohlmhorst get it finished. After poking tentatively at the escalator with the spike of her ice axe, Martha led the way downward.

The sixth floor was Darfhulva, too; military and technological history, from the character of the murals. They looked around the central hall, and went down to the fifth; it was like the floors above except that the big quadrangle was stacked with dusty furniture and boxes. Ivan Fitzgerald, who was carrying the floodlight, swung it slowly around. Here the murals were of heroic-sized Martians, so human in appearance as to seem members of her own race, each holding some object--a book, or a test tube, or some bit of scientific apparatus, and behind them were scenes of laboratories and factories, flame and smoke, lightning-flashes. The word at the top of each of the four
walls was one with which she was already familiar--Sornhulva.

"Hey, Martha; there's that word," Ivan Fitzgerald exclaimed. "The one in the title of your magazine." He looked at the paintings. "Chemistry, or physics."

"Both." Hubert Penrose considered. "I don't think the Martians made any sharp distinction between them. See, the old fellow with the scraggly whiskers must be the inventor of the spectroscope; he has one in his hands, and he has a rainbow behind him. And the woman in the blue smock, beside him, worked in organic chemistry; see the diagrams of long-chain molecules behind her. What word would convey the idea of chemistry and physics taken as one subject?"

"Sornhulva," Sachiko suggested. "If hulva's something like science, "sorn" must mean matter, or substance, or physical object. You were right, all along, Martha. A civilization like this would certainly leave something like this, that would be self-explanatory."

"This'll wipe a little more of that superior grin off Tony Lattimer's face," Fitzgerald was saying, as they went down the motionless escalator to the floor below. "Tony wants to be a big shot. When you want to be a big shot, you can't bear the possibility of anybody else being a bigger big shot, and whoever makes a start on reading this language will be the biggest big shot archaeology ever saw."

That was true. She hadn't thought of it, in that way, before, and now she tried not to think about it. She didn't want to be a big shot. She wanted to be able to read the Martian language, and find things out about the Martians.

Two escalators down, they came out on a mezzanine around a wide central hall on the street level, the floor forty feet below them and the ceiling thirty feet above. Their lights picked out object after object below--a huge group of sculptured figures in the middle; some kind of a motor vehicle jacked up on trestles for repairs; things that looked like machine-guns and auto-cannon; long tables, tops littered with a dust-covered miscellany; machinery; boxes and crates and containers.

They made their way down and walked among the clutter, missing a hundred things for every one they saw, until they found an escalator to the basement. There were three basements, one under another, until at last they stood at the bottom of the last escalator, on a bare concrete floor, swinging the portable floodlight over stacks of boxes and barrels and drums, and heaps of powdery dust. The boxes were plastic--nobody had ever found anything made of wood in the city--and the barrels and drums were of metal or glass or some glasslike substance. They were outwardly intact. The powdery heaps might have been anything organic, or anything containing fluid. Down here, where wind and dust could not reach, evaporation had been the only force of destruction after the minute life that caused putrefaction had vanished.

They found refrigeration rooms, too, and, using Martha's ice axe and the pistollike vibratool Sachiko carried on her belt, they pounded and prodded one open, to find dessicated piles of what had been vegetables, and leathery chunks of meat. Samples of that stuff, rocketed up to the ship, would give a reliable estimate, by radio-carbon dating, of how long ago this building had been occupied. The refrigeration unit, radically different from anything their own culture had produced, had been electrically powered. Sachiko and Penrose, poking into it, found the switches still on; the machine had only ceased to function when the power-source, whatever that had been, had failed.

The middle basement had also been used, at least toward the end, for storage; it was cut in half by a partition pierced by but one door. They took half an hour to force this, and were on the point of sending above for heavy equipment when it yielded enough for them to squeeze through. Fitzgerald, in the lead with the light, stopped short, looked around, and then gave a groan that came through his helmet-speaker like a foghorn.

"Oh, no! No!"

"What's the matter, Ivan?" Sachiko, entering behind him, asked anxiously.

He stepped aside. "Look at it, Sachi! Are we going to have to do all that?"

Martha crowded through behind her friend and looked around, then stood motionless, dizzy with excitement. Books. Case on case of books, half an acre of cases, fifteen feet to the ceiling. Fitzgerald, and Penrose, who had pushed in behind her, were talking in rapid excitement; she only heard the sound of their voices, not their words. This must be the main stacks of the university library--the entire literature of the vanished race of Mars. In the center, down an aisle between the cases, she could see the hollow square of the librarians' desk, and stairs and a dumb-waiter to the floor above.

She realized that she was walking forward, with the others, toward this. Sachiko was saying: "I'm the lightest; let me go first." She must be talking about the spidery metal stairs.

"I'd say they were safe," Penrose answered. "The trouble we've had with doors around here shows that the metal hasn't deteriorated."

In the end, the Japanese girl led the way, more catlike than ever in her caution. The stairs were quite sound, in spite of their fragile appearance, and they all followed her. The floor above was a duplicate of the room they had
entered, and seemed to contain about as many books. Rather than waste time forcing the door here, they returned to the middle basement and came up by the escalator down which they had originally descended.

The upper basement contained kitchens--electric stoves, some with pots and pans still on them--and a big room that must have been, originally, the students' dormitory, though when last used it had been a workshop. As they expected, the library reading room was on the street-level floor, directly above the stacks. It seemed to have been converted into a sort of common living room for the building's last occupants. An adjoining auditorium had been made into a chemical works; there were vats and distillation apparatus, and a metal fractionating tower that extended through a hole knocked in the ceiling seventy feet above. A good deal of plastic furniture of the sort they had been finding everywhere in the city was stacked about, some of it broken up, apparently for reprocessing. The other rooms on the street floor seemed also to have been devoted to manufacturing and repair work; a considerable industry, along a number of lines, must have been carried on here for a long time after the university had ceased to function as such.

On the second floor, they found a museum; many of the exhibits remained, tantalizingly half-visible in grimed glass cases. There had been administrative offices there, too. The doors of most of them were closed, and they did not waste time trying to force them, but those that were open had been turned into living quarters. They made notes, and rough floor plans, to guide them in future more thorough examination; it was almost noon before they had worked their way back to the seventh floor.

Selim von Ohlmhorst was in a room on the north side of the building, sketching the position of things before examining them and collecting them for removal. He had the floor checkerboarded with a grid of chalked lines, each numbered.

"We have everything on this floor photographed," he said. "I have three gangs--all the floodlights I have--sketching and making measurements. At the rate we're going, with time out for lunch, we'll be finished by the middle of the afternoon."

"You've been working fast. Evidently you aren't being high-church about a 'qualified archaeologist' entering rooms first," Penrose commented.

"Ach, childishness!" the old man exclaimed impatiently. "These officers of yours aren't fools. All of them have been to Intelligence School and Criminal Investigation School. Some of the most careful amateur archaeologists I ever knew were retired soldiers or policemen. But there isn't much work to be done. Most of the rooms are either empty or like this one--a few bits of furniture and broken trash and scraps of paper. Did you find anything down on the lower floors?"

"Well, yes," Penrose said, a hint of mirth in his voice. "What would you say, Martha?"

She started to tell Selim. The others, unable to restrain their excitement, broke in with interruptions. Von Ohlmhorst was staring in incredulous amazement.

"But this floor was looted almost clean, and the buildings we've entered before were all looted from the street level up," he said, at length.

"The people who looted this one lived here," Penrose replied. "They had electric power to the last; we found refrigerators full of food, and stoves with the dinner still on them. They must have used the elevators to haul things down from the upper floor. The whole first floor was converted into workshops and laboratories. I think that this place must have been something like a monastery in the Dark Ages in Europe, or what such a monastery would have been like if the Dark Ages had followed the fall of a highly developed scientific civilization. For one thing, we found a lot of machine guns and light auto-cannon on the street level, and all the doors were barricaded. The people here were trying to keep a civilization running after the rest of the planet had gone back to barbarism; I suppose they'd have to fight off raids by the barbarians now and then."

"You're not going to insist on making this building into expedition quarters, I hope, colonel?" von Ohlmhorst asked anxiously.

"Oh, no! This place is an archaeological treasure-house. More than that; from what I saw, our technicians can learn a lot, here. But you'd better get this floor cleaned up as soon as you can, though. I'll have the subsurface part, from the sixth floor down, airsealed. Then we'll put in oxygen generators and power units, and get a couple of elevators into service. For the floors above, we can use temporary airsealing floor by floor, and portable equipment; when we have things atmosphered and lighted and heated, you and Martha and Tony Lattimer can go to work systematically and in comfort, and I'll give you all the help I can spare from the other work. This is one of the biggest things we've found yet."

Tony Lattimer and his companions came down to the seventh floor a little later.

"I don't get this, at all," he began, as soon as he joined them. "This building wasn't stripped the way the others were. Always, the procedure seems to have been to strip from the bottom up, but they seem to have stripped the top floors first, here. All but the very top. I found out what that conical thing is, by the way. It's a wind-rotor, and under
it there's an electric generator. This building generated its own power."

"What sort of condition are the generators in?" Penrose asked.

"Well, everything's full of dust that blew in under the rotor, of course, but it looks to be in pretty good shape. Hey, I'll bet that's it! They had power, so they used the elevators to haul stuff down. That's just what they did. Some of the floors above here don't seem to have been touched, though." He paused momentarily; back of his oxy-mask, he seemed to be grinning. "I don't know that I ought to mention this in front of Martha, but two floors above--we hit a room--it must have been the reference library for one of the departments--that had close to five hundred books in it."

The noise that interrupted him, like the squawking of a Brobdingnagian parrot, was only Ivan Fitzgerald laughing through his helmet-speaker.

* * * * *

Lunch at the huts was a hasty meal, with a gabble of full-mouthed and excited talking. Hubert Penrose and his chief subordinates snatched their food in a huddled consultation at one end of the table; in the afternoon, work was suspended on everything else and the fifty-odd men and women of the expedition concentrated their efforts on the University. By the middle of the afternoon, the seventh floor had been completely examined, photographed and sketched, and the murals in the square central hall covered with protective tarpaulins, and Laurent Gicquel and his airsealing crew had moved in and were at work. It had been decided to seal the central hall at the entrances. It took the French-Canadian engineer most of the afternoon to find all the ventilation-ducts and plug them. An elevator-shaft on the north side was found reaching clear to the twenty-fifth floor; this would give access to the top of the building; another shaft, from the center, would take care of the floors below. Nobody seemed willing to trust the ancient elevators, themselves; it was the next evening before a couple of cars and the necessary machinery could be fabricated in the machine shops aboard the ship and sent down by landing-rocket. By that time, the airsealing was finished, the nuclear-electric energy-converters were in place, and the oxygen generators set up.

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Martha was in the lower basement, an hour or so before lunch the day after, when a couple of Space Force officers came out of the elevator, bringing extra lights with them. She was still using oxygen-equipment; it was a moment before she realized that the newcomers had no masks, and that one of them was smoking. She took off her own helmet-speaker, throat-mike and mask and unslung her tank-pack, breathing cautiously. The air was chilly, and musty-acrid with the odor of antiquity--the first Martian odor she had smelled--but when she lit a cigarette, the lighter flamed clear and steady and the tobacco caught and burned evenly.

The archaeologists, many of the other civilian scientists, a few of the Space Force officers and the two news-correspondents, Sid Chamberlain and Gloria Standish, moved in that evening, setting up cots in vacant rooms. They installed electric stoves and a refrigerator in the old Library Reading Room, and put in a bar and lunch counter. For a few days, the place was full of noise and activity, then, gradually, the Space Force people and all but a few of the civilians returned to their own work. There was still the business of airsealing the more habitable of the buildings already explored, and fitting them up in readiness for the arrival, in a year and a half, of the five hundred members of the main expedition. There was work to be done enlarging the landing field for the ship's rocket craft, and building new chemical-fuel tanks.

There was the work of getting the city's ancient reservoirs cleared of silt before the next spring thaw brought more water down the underground aqueducts everybody called canals in mistranslation of Schiaparelli's Italian word, though this was proving considerably easier than anticipated. The ancient Canal-Builders must have anticipated a time when their descendants would no longer be capable of maintenance work, and had prepared against it. By the day after the University had been made completely habitable, the actual work there was being done by Selim, Tony Lattimer and herself, with half a dozen Space Force officers, mostly girls, and four or five civilians, helping.

* * * * *

They worked up from the bottom, dividing the floor-surfaces into numbered squares, measuring and listing and sketching and photographing. They packaged samples of organic matter and sent them up to the ship for Carbon-14 dating and analysis; they opened cans and jars and bottles, and found that everything fluid in them had evaporated, through the porosity of glass and metal and plastic if there were no other way. Wherever they looked, they found evidence of activity suddenly suspended and never resumed. A vise with a bar of metal in it, half cut through and the hacksaw beside it. Pots and pans with hardened remains of food in them; a leathery cut of meat on a table, with the knife ready at hand. Toilet articles on washstands; unmade beds, the bedding ready to crumble at a touch but still retaining the impress of the sleeper's body; papers and writing materials on desks, as though the writer had gotten up, meaning to return and finish in a fifty-thousand-year-ago moment.

It worried her. Irrationally, she began to feel that the Martians had never left this place; that they were still
around her, watching disapprovingly every time she picked up something they had laid down. They haunted her dreams, now, instead of their enigmatic writing. At first, everybody who had moved into the University had taken a separate room, happy to escape the crowding and lack of privacy of the huts. After a few nights, she was glad when Gloria Standish moved in with her, and accepted the newswoman's excuse that she felt lonely without somebody to talk to before falling asleep. Sachiko Koremitsu joined them the next evening, and before going to bed, the girl officer cleaned and oiled her pistol, remarking that she was afraid some rust may have gotten into it.

The others felt it, too. Selim von Ohlmhorst developed the habit of turning quickly and looking behind him, as though trying to surprise somebody or something that was stalking him. Tony Lattimer, having a drink at the bar that had been improvised from the librarian's desk in the Reading Room, set down his glass and swore.

"You know what this place is? It's an archaeological Marie Celeste!" he declared. "It was occupied right up to the end--we've all seen the shifts these people used to keep a civilization going here--but what was the end? What happened to them? Where did they go?"

"You didn't expect them to be waiting out front, with a red carpet and a big banner, Welcome Terrans, did you, Tony?" Gloria Standish asked.

"No, of course not; they've all been dead for fifty thousand years. But if they were the last of the Martians, why haven't we found their bones, at least? Who buried them, after they were dead?" He looked at the glass, a bubble-thin goblet, found, with hundreds of others like it, in a closet above, as though debating with himself whether to have another drink. Then he voted in the affirmative and reached for the cocktail pitcher. "And every door on the old ground level is either barred or barricaded from the inside. How did they get out? And why did they leave?"

* * * * *

The next day, at lunch, Sachiko Koremitsu had the answer to the second question. Four or five electrical engineers had come down by rocket from the ship, and she had been spending the morning with them, in oxy-masks, at the top of the building.

"Tony, I thought you said those generators were in good shape," she began, catching sight of Lattimer. "They aren't. They're in the most unholy mess I ever saw. What happened, up there, was that the supports of the wind-rotor gave way, and weight snapped the main shaft, and smashed everything under it."

"Well, after fifty thousand years, you can expect something like that," Lattimer retorted. "When an archaeologist says something's in good shape, he doesn't necessarily mean it'll start as soon as you shove a switch in."

"You didn't notice that it happened when the power was on, did you," one of the engineers asked, nettled at Lattimer's tone. "Well, it was. Everything's burned out or shorted or fused together; I saw one busbar eight inches across melted clean in two. It's a pity we didn't find things in good shape, even archaeologically speaking. I saw a lot of interesting things, things in advance of what we're using now. But it'll take a couple of years to get everything sorted out and figure what it looked like originally."

"Did it look as though anybody'd made any attempt to fix it?" Martha asked.

Sachiko shook her head. "They must have taken one look at it and given up. I don't believe there would have been any possible way to repair anything."

"Well, that explains why they left. They needed electricity for lighting, and heating, and all their industrial equipment was electrical. They had a good life, here, with power; without it, this place wouldn't have been habitable."

"Then why did they barricade everything from the inside, and how did they get out?" Lattimer wanted to know.

"To keep other people from breaking in and looting. Last man out probably barred the last door and slid down a rope from upstairs," von Ohlmhorst suggested. "This Houdini-trick doesn't worry me too much. We'll find out eventually."

"Yes, about the time Martha starts reading Martian," Lattimer scoffed.

"That may be just when we'll find out," von Ohlmhorst replied seriously. "It wouldn't surprise me if they left something in writing when they evacuated this place."

"Are you really beginning to treat this pipe dream of hers as a serious possibility, Selim?" Lattimer demanded. "I know, it would be a wonderful thing, but wonderful things don't happen just because they're wonderful. Only because they're possible, and this isn't. Let me quote that distinguished Hittitologist, Johannes Friedrich: 'Nothing can be translated out of nothing.' Or that later but not less distinguished Hittitologist, Selim von Ohlmhorst: 'Where are you going to get your bilingual?'"

"Friedrich lived to see the Hittite language deciphered and read," von Ohlmhorst reminded him.

"Yes, when they found Hittite-Assyrian bilinguals." Lattimer measured a spoonful of coffee-powder into his cup and added hot water. "Martha, you ought to know, better than anybody, how little chance you have. You've been working for years in the Indus Valley; how many words of Harappa have you or anybody else ever been able to
"We never found a university, with a half-million-volume library, at Harappa or Mohenjo-Daro."

"And, the first day we entered this building, we established meanings for several words," Selim von Ohlmlhorst added.

"And you've never found another meaningful word since," Lattimer added. "And you're only sure of general meaning, not specific meaning of word-elements, and you have a dozen different interpretations for each word."

"We made a start," von Ohlmlhorst maintained. "We have Grotefend's word for 'king.' But I'm going to be able to read some of those books, over there, if it takes me the rest of my life here. It probably will, anyhow."

"You mean you've changed your mind about going home on the Cyrano?" Martha asked. "You'll stay on here?"

The old man nodded. "I can't leave this. There's too much to discover. The old dog will have to learn a lot of new tricks, but this is where my work will be, from now on."

Lattimer was shocked. "You're nuts!" he cried. "You mean you're going to throw away everything you've accomplished in Hittitology and start all over again here on Mars? Martha, if you've talked him into this crazy decision, you're a criminal!"

"Nobody talked me into anything," von Ohlmlhorst said roughly. "And as for throwing away what I've accomplished in Hittitology, I don't know what the devil you're talking about. Everything I know about the Hittite Empire is published and available to anybody. Hittitology's like Egyptology; it's stopped being research and archaeology and become scholarship and history. And I'm not a scholar or a historian; I'm a pick-and-shovel field archaeologist--a highly skilled and specialized grave-robber and junk-picker--and there's more pick-and-shovel work on this planet than I could do in a hundred lifetimes. This is something new; I was a fool to think I could turn my back on it and go back to scribbling footnotes about Hittite kings."

"You could have anything you wanted, in Hittitology. There are a dozen universities that'd sooner have you than a winning football team. But no! You have to be the top man in Martiology, too. You can't leave that for anybody else--" Lattimer shoved his chair back and got to his feet, leaving the table with an oath that was almost a sob of exasperation.

Maybe his feelings were too much for him. Maybe he realized, as Martha did, what he had betrayed. She sat, avoiding the eyes of the others, looking at the ceiling, as embarrassed as though Lattimer had flung something dirty on the table in front of them. Tony Lattimer had, desperately, wanted Selim to go home on the Cyrano. Martiology was a new field; if Selim entered it, he would bring with him the reputation he had already built in Hittitology, automatically stepping into the leading role that Lattimer had coveted for himself. Ivan Fitzgerald's words echoed back to her--when you want to be a big shot, you can't bear the possibility of anybody else being a bigger big shot. His derision of her own efforts became comprehensible, too. It wasn't that he was convinced that she would never learn to read the Martian language. He had been afraid that she would.

* * * * *

Ivan Fitzgerald finally isolated the germ that had caused the Finchley girl's undiagnosed illness. Shortly afterward, the malady turned into a mild fever, from which she recovered. Nobody else seemed to have caught it. Fitzgerald was still trying to find out how the germ had been transmitted.

They found a globe of Mars, made when the city had been a seaport. They located the city, and learned that its name had been Kukan--or something with a similar vowel-consonant ratio. Immediately, Sid Chamberlain and Gloria Standish began giving their telecasts a Kukan dateline, and Hubert Penrose used the name in his official reports. They also found a Martian calendar; the year had been divided into ten more or less equal months, and one of them had been Doma. Another month was Nor, and that was a part of the name of the scientific journal Martha had found.

Bill Chandler, the zoologist, had been going deeper and deeper into the old sea bottom of Syrtis. Four hundred miles from Kukan, and at fifteen thousand feet lower altitude, he shot a bird. At least, it was a something with wings and what were almost but not quite feathers, though it was more reptilian than avian in general characteristics. He and Ivan Fitzgerald skinned and mounted it, and then dissected the carcass almost completely by tissue. About seven-eighths of its body capacity was lungs; it certainly breathed air containing at least half enough oxygen to support human life, or five times as much as the air around Kukan.

That took the center of interest away from archaeology, and started a new burst of activity. All the expedition's aircraft--four jeticopters and three wingless airdyne reconnaissance fighters--were thrown into intensified exploration of the lower sea bottoms, and the bio-science boys and girls were wild with excitement and making new discoveries on each flight.

The University was left to Selim and Martha and Tony Lattimer, the latter keeping to himself while she and the old Turco-German worked together. The civilian specialists in other fields, and the Space Force people who had been holding tape lines and making sketches andsnapshot cameras, were all flying to lower Syrtis to find out how
much oxygen there was and what kind of life it supported.

Sometimes Sachiko dropped in; most of the time she was busy helping Ivan Fitzgerald dissect specimens. They had four or five species of what might loosely be called birds, and something that could easily be classed as a reptile, and a carnivorous mammal the size of a cat with birdlike claws, and a herbivore almost identical with the piglike thing in the big Darfhulva mural, and another like a gazelle with a single horn in the middle of its forehead.

The high point came when one party, at thirty thousand feet below the level of Kukan, found breathable air. One of them had a mild attack of sorroche and had to be flown back for treatment in a hurry, but the others showed no ill effects.

The daily newscasts from Terra showed a corresponding shift in interest at home. The discovery of the University had focused attention on the dead past of Mars; now the public was interested in Mars as a possible home for humanity. It was Tony Lattimer who brought archaeology back into the activities of the expedition and the news at home.

Martha and Selim were working in the museum on the second floor, scrubbing the grime from the glass cases, noting contents, and grease-penciling numbers; Lattimer and a couple of Space Force officers were going through what had been the administrative offices on the other side. It was one of these, a young second lieutenant, who came hurrying in from the mezzanine, almost bursting with excitement.

"Hey, Martha! Dr. von Ohlmhorst!" he was shouting. "Where are you? Tony's found the Martians!"

"Where?" they asked together.

"Over on the north side." The lieutenant took hold of himself and spoke more deliberately. "Little room, back of one of the old faculty offices--conference room. It was locked from the inside, and we had to burn it down with a torch. That's where they are. Eighteen of them, around a long table--"

Gloria Standish, who had dropped in for lunch, was on the mezzanine, fairly screaming into a radiophone extension:

"... Dozen and a half of them! Well, of course they're dead. What a question! They look like skeletons covered with leather. No, I do not know what they died of. Well, forget it; I don't care if Bill Chandler's found a three-headed hippopotamus. Sid, don't you get it? We've found the Martians!"

She slammed the phone back on its hook, rushing away ahead of them.

* * * * *

Martha remembered the closed door; on the first survey, they hadn't attempted opening it. Now it was burned away at both sides and lay, still hot along the edges, on the floor of the big office room in front. A floodlight was on in the room inside, and Lattimer was going around looking at things while a Space Force officer stood by the door. The center of the room was filled by a long table; in armchairs around it sat the eighteen men and women who had occupied the room for the last fifty millennia. There were bottles and glasses on the table in front of them, and, had she seen them in a dimmer light, she would have thought that they were merely dozing over their drinks. One had a knee hooked over his chair-arm and was curled in foetuslike sleep. Another had fallen forward onto the table, arms extended, the emerald set of a ring twinkling dully on one finger. Skeletons covered with leather, Gloria Standish had called them, and so they were--faces like skulls, arms and legs like sticks, the flesh shrunk onto the bones under it.

"Isn't this something!" Lattimer was exulting. "Mass suicide, that's what it was. Notice what's in the corners?"

Braziers, made of perforated two-gallon-odd metal cans, the white walls smudged with smoke above them. Von Ohlmhorst had noticed them at once, and was poking into one of them with his flashlight.

"Yes; charcoal. I noticed a quantity of it around a couple of hand-forges in the shop on the first floor. That's why you had so much trouble breaking in; they'd sealed the room on the inside." He straightened and went around the room, until he found a ventilator, and peered into it. "Stuffed with rags. They must have been all that were left, here. Their power was gone, and they were old and tired, and all around them their world was dying. So they just came in here and lit the charcoal, and sat drinking together till they all fell asleep. Well, we know what became of them, now, anyhow."

Sid and Gloria made the most of it. The Terran public wanted to hear about Martians, and if live Martians couldn't be found, a room full of dead ones was the next best thing. Maybe an even better thing; it had been only sixty-odd years since the Orson Welles invasion-scare. Tony Lattimer, the discoverer, was beginning to cash in on his attentions to Gloria and his ingratiation with Sid; he was always either making voice-and-image talks for telecast or listening to the news from the home planet. Without question, he had become, overnight, the most widely known archaeologist in history.

"Not that I'm interested in all this, for myself," he disclaimed, after listening to the telecast from Terra two days after his discovery. "But this is going to be a big thing for Martian archaeology. Bring it to the public attention;
dramatize it. Selim, can you remember when Lord Carnarvon and Howard Carter found the tomb of Tutankhamen?"

"In 1923? I was two years old, then," von Ohlmhorst chuckled. "I really don't know how much that publicity ever did for Egyptology. Oh, the museums did devote more space to Egyptian exhibits, and after a museum department head gets a few extra showcases, you know how hard it is to make him give them up. And, for a while, it was easier to get financial support for new excavations. But I don't know how much good all this public excitement really does, in the long run."

"Well, I think one of us should go back on the Cyran, when the Schiaparelli orbits in," Lattimer said. "I'd hoped it would be you; your voice would carry the most weight. But I think it's important that one of us go back, to present the story of our work, and what we have accomplished and what we hope to accomplish, to the public and to the universities and the learned societies, and to the Federation Government. There will be a great deal of work that will have to be done. We must not allow the other scientific fields and the so-called practical interests to monopolize public and academic support. So, I believe I shall go back at least for a while, and see what I can do--"

Lectures. The organization of a Society of Martian Archaeology, with Anthony Lattimer, Ph.D., the logical candidate for the chair. Degrees, honors; the deference of the learned, and the adulation of the lay public. Positions, with impressive titles and salaries. Sweet are the uses of publicity.

She crushed out her cigarette and got to her feet. "Well, I still have the final lists of what we found in Halvhulva--Biology--department to check over. I'm starting on Sornhulva tomorrow, and I want that stuff in shape for expert evaluation."

That was the sort of thing Tony Lattimer wanted to get away from, the detail-work and the drudgery. Let the infantry do the slogging through the mud; the brass-hats got the medals.

She was halfway through the fifth floor, a week later, and was having midday lunch in the reading room on the first floor when Hubert Penrose came over and sat down beside her, asking her what she was doing. She told him.

"I wonder if you could find me a couple of men, for an hour or so," she added. "I'm stopped by a couple of jammed doors at the central hall. Lecture room and library, if the layout of that floor's anything like the ones below it."

"Yes. I'm a pretty fair door-buster, myself." He looked around the room. "There's Jeff Miles; he isn't doing much of anything. And we'll put Sid Chamberlain to work, for a change, too. The four of us ought to get your doors open." He called to Chamberlain, who was carrying his tray over to the dish washer. "Oh, Sid; you doing anything for the next hour or so?"

"I was going up to the fourth floor, to see what Tony's doing."

"Forget it. Tony's bagged his season limit of Martians. I'm going to help Martha bust in a couple of doors; we'll probably find a whole cemetery full of Martians."

Chamberlain shrugged. "Why not. A jammed door can have anything back of it, and I know what Tony's doing--just routine stuff."

Jeff Miles, the Space Force captain, came over, accompanied by one of the lab-crew from the ship who had come down on the rocket the day before.

"This ought to be up your alley, Mort," he was saying to his companion. "Chemistry and physics department. Want to come along?"

The lab man, Mort Tranter, was willing. Seeing the sights was what he'd come down from the ship for. She finished her coffee and cigarette, and they went out into the hall together, gathered equipment and rode the elevator to the fifth floor.

The lecture hall door was the nearest; they attacked it first. With proper equipment and help, it was no problem and in ten minutes they had it open wide enough to squeeze through with the floodlights. The room inside was quite empty, and, like most of the rooms behind closed doors, comparatively free from dust. The students, it appeared, had sat with their backs to the door, facing a low platform, but their seats and the lecturer's table and equipment had been removed. The two side walls bore inscriptions: on the right, a pattern of concentric circles which she recognized as a diagram of atomic structure, and on the left a complicated table of numbers and words, in two columns. Tranter was pointing at the diagram on the right.

"They got as far as the Bohr atom, anyhow," he said. "Well, not quite. They knew about electron shells, but they have the nucleus pictured as a solid mass. No indication of proton-and-neutron structure. I'll bet, when you come to translate their scientific books, you'll find that they taught that the atom was the ultimate and indivisible particle. That explains why you people never found any evidence that the Martians used nuclear energy."

"That's a uranium atom," Captain Miles mentioned.

"It is?" Sid Chamberlain asked, excitedly. "Then they did know about atomic energy. Just because we haven't
found any pictures of A-bomb mushrooms doesn't mean--"

She turned to look at the other wall. Sid's signal reactions were setting away from him again; uranium meant nuclear power to him, and the two words were interchangeable. As she studied the arrangement of the numbers and words, she could hear Tranter saying:

"Nuts, Sid. We knew about uranium a long time before anybody found out what could be done with it. Uranium was discovered on Terra in 1789, by Klaproth."

There was something familiar about the table on the left wall. She tried to remember what she had been taught in school about physics, and what she had picked up by accident afterward. The second column was a continuation of the first: there were forty-six items in each, each item numbered consecutively--

"Probably used uranium because it's the largest of the natural atoms," Penrose was saying. "The fact that there's nothing beyond it there shows that they hadn't created any of the transuranics. A student could go to that thing and point out the outer electron of any of the ninety-two elements."

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Ninety-two! That was it; there were ninety-two items in the table on the left wall! Hydrogen was Number One, she knew; One, Sarfaldsorn. Helium was Two; that was Tirfaldsorn. She couldn't remember which element came next, but in Martian it was Sarfalddavas. Sorn must mean matter, or substance, then. And davas; she was trying to think of what it could be. She turned quickly to the others, catching hold of Hubert Penrose's arm with one hand and waving her clipboard with the other.

"Look at this thing, over here," she was clamoring excitedly. "Tell me what you think it is. Could it be a table of the elements?"

They all turned to look. Mort Tranter stared at it for a moment.

"Could be. If I only knew what those squiggles meant--"

That was right; he'd spent his time aboard the ship.

"If you could read the numbers, would that help?" she asked, beginning to set down the Arabic digits and their Martian equivalents. "It's decimal system, the same as we use."

"Sure. If that's a table of elements, all I'd need would be the numbers. Thanks," he added as she tore off the sheet and gave it to him.

Penrose knew the numbers, and was ahead of him. "Ninety-two items, numbered consecutively. The first number would be the atomic number. Then a single word, the name of the element. Then the atomic weight--"

She began reading off the names of the elements. "I know hydrogen and helium; what's tirfalddavas, the third one?"

"Lithium," Tranter said. "The atomic weights aren't run out past the decimal point. Hydrogen's one plus, if that double-hook dingus is a plus sign; Helium's four-plus, that's right. And lithium's given as seven, that isn't right. It's six-point nine-four-oh. Or is that thing a Martian minus sign?"

"Of course! Look! A plus sign is a hook, to hang things together; a minus sign is a knife, to cut something off from something--see, the little loop is the handle and the long pointed loop is the blade. Stylized, of course, but that's what it is. And the fourth element, kiradavas; what's that?"

"Beryllium. Atomic weight given as nine-and-a-hook; actually it's nine-point-oh-two."

Sid Chamberlain had been disgruntled because he couldn't get a story about the Martians having developed atomic energy. It took him a few minutes to understand the newest development, but finally it dawned on him.

"Hey! You're reading that!" he cried. "You're reading Martian!"

"That's right," Penrose told him. "Just reading it right off. I don't get the two items after the atomic weight, though. They look like months of the Martian calendar. What ought they to be, Mort?"

* * * * *

Tranter hesitated. "Well, the next information after the atomic weight ought to be the period and group numbers. But those are words."

"What would the numbers be for the first one, hydrogen?"

"Period One, Group One. One electron shell, one electron in the outer shell," Tranter told her. "Helium's period one, too, but it has the outer--only--electron shell full, so it's in the group of inert elements."

"Trav, Trav. Trav's the first month of the year. And helium's Trav, Yenth; Yenth is the eighth month."

"The inert elements could be called Group Eight, yes. And the third element, lithium, is Period Two, Group One. That check?"

"It certainly does. Sanv, Trav; Sanv's the second month. What's the first element in Period Three?"

"Sodium. Number Eleven."

That's right; it's Krav, Trav. Why, the names of the months are simply numbers, one to ten, spelled out.

"Doma's the fifth month. That was your first Martian word, Martha," Penrose told her. "The word for five. And
if davas is the word for metal, and sornhulva is chemistry and / or physics, I'll bet Tadavas Sornhulva is literally translated as: Of-Metal Matter-Knowledge. Metallurgy, in other words. I wonder what Mastharnorvod means."

"We'll work that out, too," she said confidently. After this, nothing seemed impossible. "Maybe we can find--" Then she stopped short. "You said 'Quarterly.' I think it was 'Monthly,' instead. It was dated for a specific month, the fifth one. And if nor is ten, Mastharnorvod could be 'Year-Tenth.' And I'll bet we'll find that masthar is the word for year." She looked at the table on the wall again. "Well, let's get all these words down, with translations for as many as we can."

"Let's take a break for a minute," Penrose suggested, getting out his cigarettes. "And then, let's do this in comfort. Jeff, suppose you and Sid go across the hall and see what you find in the other room in the way of a desk or something like that, and a few chairs. There'll be a lot of work to do on this."

Sid Chamberlain had been squirming as though he were afflicted with ants, trying to contain himself. Now he let go with an excited jabber.

"This is really it! The it, not just it-of-the-week, like finding the reservoirs or those statues or this building, or even the animals and the dead Martians! Wait till Selim and Tony see this! Wait till Tony sees it; I want to see his face! And when I get this on telecast, all Terra's going to go nuts about it!" He turned to Captain Miles. "Jeff, suppose you take a look at that other door, while I find somebody to send to tell Selim and Tony. And Gloria; wait till she sees this--"

"Take it easy, Sid," Martha cautioned. "You'd better let me have a look at your script, before you go too far overboard on the telecast. This is just a beginning; it'll take years and years before we're able to read any of those books downstairs."

"I'll go faster than you think, Martha," Hubert Penrose told her. "We'll all work on it, and we'll teleprint material to Terra, and people there will work on it. We'll send them everything we can ... everything we work out, and copies of books, and copies of your word-lists--"

And there would be other tables--astronomical tables, tables in physics and mechanics, for instance--in which words and numbers were equivalent. The library stacks, below, would be full of them. Transliterate them into Roman alphabet spellings and Arabic numerals, and somewhere, somebody would spot each numerical significance, as Hubert Penrose and Mort Tranter and she had done with the table of elements. And pick out all the chemistry textbooks in the Library; new words would take on meaning from contexts in which the names of elements appeared. She'd have to start studying chemistry and physics, herself--

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Sachiko Koremitsu peeped in through the door, then stepped inside.

"Is there anything I can do--?" she began. "What's happened? Something important?"

"Important?" Sid Chamberlain exploded. "Look at that, Sachi! We're reading it! Martha's found out how to read Martian!" He grabbed Captain Miles by the arm. "Come on, Jeff; let's go. I want to call the others--" He was still babbling as he hurried from the room.

Sachi looked at the inscription. "Is it true?" she asked, and then, before Martha could more than begin to explain, flung her arms around her. "Oh, it really is! You are reading it! I'm so happy!"

She had to start explaining again when Selim von Ohlmhorst entered. This time, she was able to finish.

"But, Martha, can you be really sure? You know, by now, that learning to read this language is as important to me as it is to you, but how can you be so sure that those words really mean things like hydrogen and helium and boron and oxygen? How do you know that their table of elements was anything like ours?"

Tranter and Penrose and Sachiko all looked at him in amazement.

"That isn't just the Martian table of elements; that's the table of elements. It's the only one there is." Mort Tranter almost exploded. "Look, hydrogen has one proton and one electron. If it had more of either, it wouldn't be hydrogen, it'd be something else. And the same with all the rest of the elements. And hydrogen on Mars is the same as hydrogen on Terra, or on Alpha Centauri, or in the next galaxy--"

"You just set up those numbers, in that order, and any first-year chemistry student could tell you what elements they represented." Penrose said. "Could if he expected to make a passing grade, that is."

The old man shook his head slowly, smiling. "I'm afraid I wouldn't make a passing grade. I didn't know, or at least didn't realize, that. One of the things I'm going to place an order for, to be brought on the Schiaparelli, will be a set of primers in chemistry and physics, of the sort intended for a bright child of ten or twelve. It seems that a Martiologist has to learn a lot of things the Hittites and the Assyrians never heard about."

Tony Lattimer, coming in, caught the last part of the explanation. He looked quickly at the walls and, having found out just what had happened, advanced and caught Martha by the hand.
"You really did it, Martha! You found your bilingual! I never believed that it would be possible; let me congratulate you!"

He probably expected that to erase all the jibes and sneers of the past. If he did, he could have it that way. His friendship would mean as little to her as his derision--except that his friends had to watch their backs and his knife. But he was going home on the Cyrano, to be a big shot. Or had this changed his mind for him again?

"This is something we can show the world, to justify any expenditure of time and money on Martian archaeological work. When I get back to Terra, I'll see that you're given full credit for this achievement--"

On Terra, her back and his knife would be out of her watchfulness.

"We won't need to wait that long," Hubert Penrose told him dryly. "I'm sending off an official report, tomorrow; you can be sure Dr. Dane will be given full credit, not only for this but for her previous work, which made it possible to exploit this discovery."

"And you might add, work done in spite of the doubts and discouragements of her colleagues," Selim von Ohlmhorst said. "To which I am ashamed to have to confess my own share."

"You said we had to find a bilingual," she said. "You were right, too."

"This is better than a bilingual, Martha," Hubert Penrose said. "Physical science expresses universal facts; necessarily it is a universal language. Heretofore archaeologists have dealt only with pre-scientific cultures."

THE END

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Contents

DANGER
by Fletcher Pratt and Irvin Lester

The wind rose in the night and by dawn the sky was streaming with torn and ragged masses of cloud moving from south to north like an army in flight. There was a shiver of cold in the air and the seas ran so high that effective work was impossible, so we gathered in Professor Hartford's cabin to help the old man brave out his discomfort by getting him to talk. The way in which he kept up his spirit, if not his body, through all the miseries of seasickness on that trip, was one of the finest exhibitions of courage I have seen anywhere.

As the senior member of the Museum's staff he was, in a sense, in charge of the expedition, though like the rest of us, he was inclined to let things run themselves while he pursued his specialty. Perhaps it was fortunate for him that the protozoa can be studied as well on a constantly moving steamer as on dry land; for the work kept his mind off his troubles. At all events, every day that was calm enough for him to be out of bed, found him poring over his microscope in search of hitherto undescribed forms in this remote corner of the Pacific.

On days such as this he lay in his bunk, and between uneasy heavings of the mal-de-mer that plagued him, lectured our crowd of assorted scientific experts on the importance of unicellular life. Very interesting lectures they must have been to the others; even I was sometimes caught by the spell of the professor's keen and philosophical observation, and as a mere artist I always felt more or less a misfit among all those -ologies and -isms.

I remember this day in particular, partly because the evening brought us to our first view of Easter Island and partly because the conversation turned to those scientific generalizations; which are both easier to understand and more interesting to the non-scientific hearer. But even then, I probably would have recalled it only as one of a number of similar talks, had not after events given it a peculiar, almost a sinister significance.

Burgess, our entomologist, had been trying to draw the professor out by descanting on the rising tide of insect life. "Sooner or later," he declared, "we will have to fight for our lives with them. Science always plods along behind their attacks. They have taken the chestnut, the boll-weevil and corn-borer are taking two more of our economically important plants. Who knows but that nature is working in its slow way to send us after the dinosaurs?"

Slap, slap, went the waves against the cabin wall.

"Perhaps, perhaps," mused Professor Hertford, "though I incline to think that the insects will never drive man from the planet. Evolution allows a group only one opportunity--the insects had their chance to rule the world in the Carboniferous, and failed.

"... No," he went on, "there are many lines of evolution untried, but none of them lead through existing forms. When a more capable type than man appears, it will be in a wholly new form of animal life--perhaps even a direct evolution from the protozoa. So far as we know, evolution along that line has never taken place to any great extent. The division between the one-celled and many-celled animals is sharper than that between an insect and an elephant. Think of a one-celled animal, practically immortal as they are and possessed of intelligence. No matter what work
we do, no matter what records we leave, the greater portion of human knowledge perishes with the minds that give it birth. Think what it would mean if one person could go on gathering knowledge through the centuries."

"But," objected Burgess, "a parmoecium hasn't any brain tissue. You can't have that without some nervous organization."

"But, my dear Burgess," said the professor, urbanely, "is brain tissue necessary to thought? You might as well say fins are necessary to swimming. Neither the polar bear nor the octopus have them, yet both can swim very well. Nature has a queer way of accomplishing similar results by all sorts of different means. Suppose thought is what Osborn hints it is--a matter of chemical reaction, and interaction--is there any need for brain tissue in which the thought must take place?"

"All true enough," said Burgess, "but you must admit that without proprioceptors there can be no sensation, and with a cortex--"

The conversation became so technical that I was perforce eliminated from it, and wandered down the iron stairway to watch the engines. For a time I sat there, vainly trying to put on paper the flicker of those bright moving parts--so beautifully ordered, so Roman in their efficient performance of their task, whatever else was happening. But it was no use; a job for a Nevinson, and I clambered back to the deck.

There I found the weather had moderated. The whole southwest was streaked with the orange presage of a fairer day and, right in the center of the illumination, grey and ominous, a huge cone rose steeply from the water.

"That's Puakatina," said Bronson the mate, pausing beside me. "There's an anchorage right beneath it, but we'll have to work round to the west of Cook's Bay to get shelter from the wind. I was here on a guano ship ten years ago. Damndest place you ever saw--no water, no fish, no nothing."

Morning found us at anchor in the bay and already scattering to our several pursuits. For me, Easter Island was a fairyland. Never, among primitive work, have I seen such sculpture. It far surpassed the best Egyptian work, for every one of those cyclopean heads was a portrait, and almost a perfect one. I cannot better express my feeling for them than by saying that now, as I am writing this account with the memory sharp in my mind, of she strange and terrible events that took place later, I must still turn aside to pay tribute to those statues.

After all they are not so far from my story. Indeed, it was the statues that gave me what should have been a clue--a queer idea that all was not quite as it should be on this island--an idea that I would dismiss as an afterview, were it not that I find on the margin of one of my sketches, made at the time, a note to the effect that something very curious must have happened on the island. Those stones were carved by nothing less than a race of conquerors, with stern high faces, utterly different from the easy-going Polynesians of today. What became of them?

The same impression, of some weird catastrophe, was confirmed by other members of the expedition. There were almost no fish, very little life for the botanists to chew on, and Hertford announced at one of our cabin conferences that the waters, as Agassiz had reported, were quite devoid of plankton. He pooh-poohed the idea of the subsidence of a large land put forth by De Salza, our geologist. "Subsidence," he said, "would leave the plankton and fish untouched. It is more as though some destructive organism had swept every trace of life from the locality. All the birds and the few fish are obviously recent immigrants, like the people."

Despite my entreaties for more time to make sketches, the scientists had done about all they could with this barren land in a week or so, and we hauled up anchor for Sala-y-Gomez, three hundred miles further east, taking a couple of the islanders with us. In spite of its atmosphere of ruin and gloom I was sorry to leave Easter Island, but there was the possibility that Sala-y-Gomez might contain some traces of the Easter script or carvings, and I felt it necessary to refuse Hertford's offer to leave me and stop on the way back.

Upon Sala-y-Gomez too, we came just at evening, marking it by the white line of foam along its low-lying shores as we felt our way slowly among the reefs, and here occurred another of those trivial incidents which are straws pointing in the direction of hidden things.

I was standing by the rail with Howard, the ichthyological man, idly watching the wires of the dredge where they interrupted the slow curls of water turned back by our bow when there was a heavy muffled clang, and we saw the lines of the dredge tighten to tensity. Howard signalled for it to be drawn in, and together we watched the big scoop, eager to see what it had encountered. To our surprise it held only a little sea-weed.

"Now that's odd," said Howard, searching the sea-weed, with a small hand glass. "I could have sworn that dredge caught something heavy."

"It did," I answered, pointing. There was a long scratch of bright metal along one side.

"Corals possibly," he remarked. "Hey, Bronson, any reefs charted here?"

The mate strolled up. "Not on the charts," he said, "but you never can tell. These Chilean charts aren't very good, you know."

"M-m-m" murmured Howard, continuing his examination. "There ought to be fragments of coralline formation here, but there aren't. Wonder what is could have been? Almost as though we'd caught something and it got away."
The thought of Hertford's comment about a destructive organism slipped into my mind, to be dismissed as not worth mentioning. Rock, shark, almost anything would have made that mark on the dredge.

There were no specimens ready to be sketched in the morning, and I went ashore with the first boat to wander about the island with my drawing materials. It must have been nearly noon when I rounded a jutting outcrop of rock to see before me a little sandy cove, placid and unresponsive in the heat, without a sign of life. Far ahead, a dark blob of rock was the only mark on the perfect line of the beach. It was so suavé a scene that I sat down to make a sketch. After I had pencilled it in and was mixing the brown color for the cliffs, I noted that the rock seemed to have moved, but I attributed it to imagination and went on with my coloring. It must have been quite ten minutes when I looked up again. This time there could be no doubt--neither the outline nor the position of the rock were at all as I had recorded them.

In some excitement, I started to climb down the cliff toward this singular rock that changed place and form, but the distance was considerable, and while I was still a quarter of a mile away, it moved again, visibly this time, sliding down to the water's edge, where it disappeared beneath the gentle surge. The most peculiar thing about it was that there seemed to be no sensible method of progress; it flowed, like a huge, irregular drop of liquid.

I hurried back to the camp with my sketch and my tale, but found the rest in no condition to listen. Old Makoi Toa, one of the Easter Islanders we had brought along with us, had been killed, apparently by a snake. "He was fishing down the beach ahead of the rest," said Howard, "just out of sight beyond that rock. We all heard him scream, and hurried to the spot. When we got there he was already dead, with a round hole in his chest, and shortly after he turned that hideous blue black that people turn to who die of snake-bite. It might have been one of those sea-snakes but for the size of the wound."

"I'm sure I saw something sliding away into the water," added Greaves, the botanist, "but it didn't look in the least like a snake."

The shadow of the old man's death lay on our little cabin conference that night, inhibiting speech, though the means of it remained a mystery. It was not until I told my tale that there was any conversation at all. As I finished there was a little moment of silence, during which each one made the obvious parallel between the occurrence and the death of Makoi Toa, and then Professor Hertford asked to see my sketch. He looked at it closely for a moment.

"Unless I am mistaken, gentlemen," he said, "we are facing an unknown organism of serious potentialities. May I ask that you do not go ashore to-morrow unless you are well armed and in pairs?"

"What is it, professor?" asked de Salza.

"I would prefer not to hazard a guess just yet. I may be in error." And that was the last word on the subject that we could draw from him, although de Salza laughed at the idea of anything sinister in connection with this little spot of land.

The next day was bright and clear, and after attending the burial service for Makoi Toa, I sought Greaves and together we made for the spot where I had seen the moving rock. I admit we were culpable in not going armed as the professor advised, but who would then have thought....?

We reached the place about the same time I had been there the previous day, climbed down the cliffs with each other's help, and walked across the white sand of the cove, to where I had seen the moving rock. It was not more than ten yards from the edge of a place where the receding tide of years had left a number of little arched caves. Just where I had sketched the rock was a ridge of sand pulled aside by the weight of whatever had been there, and in the center of it, a round, hard ball, perhaps three or four inches in diameter. Greaves picked it up, turning it over curiously.

"Why, it's feathers and bones," he said, extending it to me, "just as though it had been regurgitated by a pelican or an eagle after a meal."

I reached my hand for it, and just then, by the grace of Providence, caught a flicker of motion out of the tail of my eye. I turned to meet it; my foot gave on the soft sand, and I fell prone. It was the fall that saved me for something sharp whistled not an inch past my shoulder as I went down. The next instant I heard Greaves shout, and felt him tug my arm, and in the same moment something cold and clammy and hard grated and gripped against my foot. A horrible fear, the fear of imminent death, turned me to ice; I seemed incapable of movement, but somehow got to one knee, and between my own efforts and Greaves' pull, the grip on my foot relaxed. I half stumbled, half-rolled down the sand, and as I did so, there was another whistling flash and something struck the pocket of my coat, going right through the cloth and the sketch pad beneath it, to fall short of my skin by the narrowest of margins. Greaves was pulling me to my feet, and in a moment we were running.

In the interests of science I regret that we stood not on the order of our going. Neither of us spoke till we turned and paused at the top of the cliff, after a breathless climb. The cove was as empty as it had been before.

"My God--What was it?" I gasped.

"I don't know, I don't know." Greaves was half sobbing with excitement. "Something big and sort of--all soft--
threw those things at us--half a dozen of the them--My God."

We were both so much shaken that the journey back to the camp seemed interminable, and it was some time after our arrival before a consecutive story could be gotten out of Greaves. When he did tell his tale, it appeared that he had noticed the thing almost as soon as I--a great, dead brown object of uncertain form which had slid up softly from the water and shot out the darts I had seen without warning or sound, "as a cuttlefish does when you touch it," said Greaves, with a shudder. "The horrible part about it was that the thing had no eyes but seemed to see perfectly and know just where to move to head us off. I thought I'd never get you pulled loose... All the time I was dodging those darts I kept thinking about Makoi Toa....."

"I think you will agree," said Professor Hertford, when he had finished his rather incoherent account, "that my anticipations have been realized. Everything points to the presence in these waters of an efficient and destructive organism, capable not only of dominating the whole animal environment, but possibly even of depopulating Easter Island. From your description which is very rough and inaccurate, I should not be surprised to find it a giant new species of infusorian of jellyfish. Both types have those stinging tentacles. I am in favor of remaining until we obtain more data about this animal, but as some--er--danger may attend such a course, I should prefer to leave it to the majority."

What could we do in the face of such an appeal? Personally, I had felt the grip on my foot and had no desire to feel it again. I could understand the flame of scientific interest driving the others, but it was rather with foreboding than enthusiasm that I listened to the eager plans they made for entrapping one of the animals which had attacked us.

I doubt whether anybody except de Salza (who was a human fish, intolerant of anything but the record of the rocks) was absent from the group which gathered behind the top of the cliffs the next morning to watch the fluttering antics of a chicken pegged out on the sand where we had met our adventure. Howard and Grimm (the conchologist) were armed with the only two rifles the expedition afforded, it having been agreed that it was better to examine a dead specimen before trying to take a live one.

The sun grew unconscionably hot as it swung across the sky. We conversed in low tones and were wondering whether we had come on a wild goose chase when I saw Howard beside me, stiffen to attention. I looked around--there was a break in the ripple, and through it slowly emerged the shape of the monster, dull brown in hue. I felt a quiver of excitement; the chicken was straining to the limit of its rope. There was a crack! that made all of us jump, as someone fired. "No, not yet," cried the professor, but the dark form took no notice, only moved on, formless and flowing, with half a score of short tentacles waving before it. Then it appeared to notice the chicken, paused, waved a tentacle or two at it, and there was a flicking motion as one of the darts shot out. The chicken went limp and the monster flowed gently over it. When it had passed, chicken, rope, and even the stake, were gone.

Both men were now firing, but they might as well have been throwing peas. The fantastic mound of jelly rolled back into the water in the same leisurely fashion it had come out, and disappeared.

Everybody began to talk at once, "The thing must be bullet proof!" "Invertebrate, but what an invertebrate!" "So that's what cleaned up Easter Island!" "Did you notice the ossicles?" "It's a hydroid!" "More like a medusid." "What do you think, Dr. Hertford?"

On one thing the conference that followed was agreed: that the animal, whatever it was, must be captured and examined. Various wild suggestions about dynamite and chemicals came up to be laughed down, and it was Dr. Hertford, as usual, who supplied the determining factor.

"It seems to me," said he, "that it would be worth while to postpone our trip to the continent and attempt to take one of these animals in one of the mammal cages. I believe the one you shot at was at least seriously injured; it seems incredible that it could be altogether bullet proof. We may, therefore, have a wall before another appears. What do you say?"

De Salza's was the only dissenting voice. I kept silence. I wish I had not, for though my protest might have done little good, it would at least have taken a load from my conscience that can never be quite clear now. However, I made no protest. The cage was rigged up on the shore with another chicken inside and a trick arrangement to slam the door shut on the invader and we sat down at the cove to wait.

It was the afternoon of the third day from the installation of the cage, and I was in my tent at the camp, trying to capture the color pattern of a small and very wiggly fish when the excited voice of Howard hailed us to announce that the cage held a prisoner. At once everything else was forgotten and we all hurried off, pell-mell, Dr. Hertford for all his years, well in the lead.

Sure enough the little mammal cage was filled to overflowing with the brown jelly-like mass of the monster, a tentacle or two waving in a friendly manner from the edges of the mass where it bulged between the bars. I admit it gave me a gone feeling in the pit of the stomach to watch it; it was like nothing I had ever seen or heard of, but among the scientists it produced only the liveliest interest.

Warned by previous experience, they approached it with some caution, Howard carrying a piece of sheet iron
from the ship before the professor like a shield-bearer in the days of the Iliad, while Greaves and Grimm came behind at a respectable distance, bearing rifles at the ready.

As they drew near, I heard the professor cry out in excitement, "Why, it's a protozoan! Look, the nucleus, and those cilia! And the triocysts! A single celled animal, by all that's holy! Related to Loxodes unless I am mistaken." Simultaneously, Greaves and Grimm, attracted by his words, drew a step nearer, and even Howard lowered the sheet iron to peer at the animal. And in that moment it happened.

With an indescribable swaying motion, the jelly-like mass in the cage seemed to surge through the narrow opening in the cage, and as it surged, the air about it was filled with the flash of those deadly darts. I heard Howard cry out, I saw Grimm leap; a gun was discharged, and the sheet iron clanged on the sand. Then there was silence and the brown mass in the cage oozed slowly across the sand to the four dead men, who writhed for a moment and lay still.

I think I must have gone a little mad in the next moments. I can never recall quite accurately what happened. I remember only a paralyzing mist of horror, and the walls of my cabin. They tell me that the cove was found utterly empty save for the cage with its door shut tight... I do not know... I do not know. A round ball, like the ball of feathers and bones found by Greaves was picked up later on the beach. It held shattered human bones, a fragment of blue cloth and a brass key, nothing more. I did not see it.

Even today, the memory of the horror of that moment gives me sleepless nights and days of shuddering. All too clearly I recall the words of that brave and gentle man who went to his death on the beach of Sala-y-Gomez, "When a type to replace man appears, it will be a direct evolution from the protozoa..." All too clearly, I remember his last words, and the desolation wrought by these animals on Easter Island and through that great stretch of the Eastern Pacific known as the Agassiz triangle, and I wonder how long it will be before they invade the continents.

It will be long, of that I am certain. The length of the time makes me wish to forget it and leave the future to care for itself. But I feel it a duty to the memory of Dr. Hertford to lay aside my own feeling, and place this story before the public, especially since de Salza, the only surviving member of that disastrous expedition, has cast doubt upon his conclusions and has disparaged his memory. If, in the face of de Salza's reputation, I have succeeded in convincing even a few that humanity is on the verge of a battle to the death with a perhaps superior form of life, I am content; I have accomplished my purpose.
"I'm getting old," Sam Chipfellow said, "and old men die."

His words were an indirect answer to a question from Carter Hagen, his attorney. The two men were standing in an open glade, some distance from Sam Chipfellow's mansion at Chipfellow's Folly, this being the name Sam himself had attached to his huge estate.

Sam lived there quite alone except for visits from relatives and those who claimed to be relatives. He needed no servants nor help of any kind because the mansion was completely automatic. Sam did not live alone from choice, but he was highly perceptive and it made him uncomfortable to have relatives around with but one thought in their minds: When are you going to die and leave me some money?

Of course, the relatives could hardly be blamed for entertaining this thought. It came as naturally as breathing because Sam Chipfellow was one of those rare individuals--a scientist who had made money; all kinds of money; more money than almost anybody. And after all, his relatives were no different than those of any other rich man. They felt they had rights.

Sam was known as The Genius of the Space Age, an apt title because there might not have been any space without him. He had been extremely versatile during his long career, having been responsible for the so-called eternal metals--metal against which no temperature, corrosive, or combinations of corrosives would prevail. He was also the pioneer of telepower, the science of control over things mechanical through the electronic emanations of thought waves. Because of his investigations into this power, men were able to direct great ships by merely "thinking" them on their proper courses.

These were only two of his contributions to progress, there being many others. And now, Sam was facing the mystery neither he nor any other scientist had ever been able to solve.

Mortality.

There was a great deal of activity near the point at which the men stood. Drills and rock cutters had formed three sides of an enclosure in a ridge of solid rock, and now a giant crane was lowering thick slabs of metal to form the walls. Nearby, waiting to be placed, lay the slab which would obviously become the door to whatever Sam was building. Its surface was entirely smooth, but it bore great hinges and some sort of a locking device was built in along one edge.

Carter Hagen watched the activity and considered Sam's reply to his question. "Then this is to be a mausoleum?"

Sam chuckled. "Only in a sense. Not a place to house my dead bones if that's what you mean."

Carter Hagen, understanding this lonely old man as he did, knew further questions would be useless. Sam was like that. If he wanted you to know something, he told you.

So Carter held his peace and they returned to the mansion where Sam gave him a drink after they concluded the business he had come on.

Sam also gave Carter something else--an envelope. "Put that in your safe, Carter. You're comparatively young. I'm taking it for granted you will survive me."

"And this is--?"

"My will. All old men should leave wills and I'm no exception to the rule. When I'm dead, open it and read what's inside."

Carter Hagen regarded the envelope with speculation. Sam smiled. "If you're wondering how much I left you, Carter, I'll say this: You might get it all."

Hagen strove to appear nonchalant but his eyes widened regardless. Sam enjoyed this. He said, "Yes, you'll have as much chance as anyone else."

"You mean as much chance as any of your relatives?"

"I mean what I said--as much as anyone. I've given them no more consideration than anyone else."

Carter Hagen stared, puzzled. "I'm afraid I don't understand you."

"I didn't expect you to, but that will come later. I'll tell you this much, though. No one will be barred. The winner will take all, and the winner may be anyone on this planet. My one regret is that I won't be around to see who gets the jackpot."
Carter Hagen dutifully pocketed the will and left. He returned on other business a week later. Sam Chipfellow's first question was, "Well, what did you think of it?"

"Think of what?"

"My will."

Carter Hagen straightened to an indignant five-foot-six. "Mr. Chipfellow, I don't like having my integrity questioned. Your will was in a sealed envelope. You instructed me to read it after your death. If you think I'm the sort of man who would violate a trust--"

Sam put a drink into his attorney's hand. "Here, take this. Calm down."

Carter Hagen gulped the drink and allowed his feathers to smooth down. As he set down his glass, Sam leaned back and said, "Now that that's over, let's get on with it. Tell me--what did you think of my will?"

The attorney flushed. It was no use trying to fool Chipfellow. He was a master at that damned thought business. "I--I did look at it. I couldn't resist the temptation. The envelope was so easily opened."

Sam was regarding him keenly but without anger. "I know you're a crook, Hagen, but no more so than most people. So don't sit there cringing."

"This will is--well, amazing, and getting an advance look didn't help me a bit unless--" Hagen looked up hopefully. "--unless you're willing to give me a slight clue--"

"I'll give you nothing. You take your chances along with the rest."

Hagen sighed. "As to the will itself, all I can say is that it's bound to cause a sensation."

"I think so too," Sam said, his eyes turning a trifle sad. "It's too bad a man has to die just at the most interesting point of his life."

"You'll live for years, Mr. Chipfellow. You're in fine condition."

"Cut it out. You're itching for me to shuffle off so you can get a crack at what I'm leaving behind."

"Why, Mr.--"

"Shut up and have another drink."

* * * * *

Carter Hagen did not have long to wait as life-times go. Eighteen months later, Sam Chipfellow dropped dead while walking in his garden. The news was broadcast immediately but the stir it caused was nothing to the worldwide reaction that came a few days later.

This was after all the relatives, all those who thought they had a faint chance of proving themselves relatives, and representatives of the press, radio, and video, gathered in the late Sam Chipfellow's mansion to hear the reading of the will. Carter Hagen, seeking to control his excitement, stood before a microphone installed for the benefit of those who couldn't get in.

He said, "This is the last will and testament of Samuel Chipfellow, deceased. As his lawyer, it becomes my duty to--"

An angry murmur went up from those assembled. Exclamations of impatience. "Come on! Get on with it. Quit making a speech and read the will, we can't wait all day!"

"Quiet, please, and give me your closest attention. I will read slowly so all may hear. This is Mr. Chipfellow's last testament:

"I, Samuel B. Chipfellow, have made a great deal of money during my active years. The time now comes when I must decide what will become of it after my death. I have made my decision, but I remain in the peculiar position of still not knowing what will become of it. Frankly, I'm of the opinion that no one will ever benefit from it--that it will remain in the place I have secreted it until the end of time."

A murmur went up from the crowd.

"A treasure hunt!" someone cried. "I wonder if they'll distribute maps!"

Carter Hagen raised his hand. "Please! Let's have a little more order or the reading will not continue."

The room quieted and Hagen's droning voice was again raised:

"This place consists of a vault I have had erected upon my grounds. This vault, I assure you, is burglar-proof, weather-proof, cyclone-proof, tornado-proof, bomb-proof. Time will have no effect upon its walls. It could conceivably be thrown free in some great volcanic upheaval but even then the contents would remain inaccessible.

"There is only one way the vault can be opened. Its lock is sensitized to respond to a thought. That's what I said--a thought. I have selected a single, definite, clear-cut thought to which the combination will respond."

"There is a stone bench in front of the vault door and I decree that any person who wishes, may sit down on this bench and direct his or her thought at the door. If it is the correct one, the door will open and the person causing this to happen shall then be the possessor of all my worldly wealth which lies inside."

"Because of the number of persons who will no doubt wish to try their luck, I decree further that each shall be given thirty seconds in which to project their thought. A force of six men shall be hired to supervise the operation
and handle the crowds in the neighborhood of the vault. A trust fund has been already set up to pay this group. The balance of my wealth lies awaiting the lucky thinker in the vault--all save this estate itself, an item of trifling value in comparison to the rest, which I bequeath to the State with the stipulation that the other terms of the will are rigidly carried out.

"And so, good luck to everyone in the world. May one of you succeed in opening my vault--although I doubt it. Samuel B. Chipfellow. P.S. The thought-throwing shall begin one week after the reading of the will. I add this as a precaution to keep everyone from rushing to the vault after this will is read. You might kill each other in the stampede. S. B. C."

There was a rush regardless. Reporters knocked each other down getting to the battery of phones set up to carry the news around the world. And Sam Chipfellow's will pushed all else off the video screens and the front pages.

* * * * *

During the following weeks, millions were made through the sale of Chipfellow's thought to the gullible. Great commercial activity began in the area surrounding the estate as arrangements were made to accommodate the hundreds of thousands who were heading in that direction.

A line began forming immediately at the gate to Chipfellow's Folly and a brisk market got under way in positions therein. The going figure of the first hundred positions was in the neighborhood of ten thousand dollars. A man three thousand thoughts away was offered a thousand dollars two days before the week was up, and on the last day, the woman at the head of the line sold her position for eighteen thousand dollars.

There were many learned roundtables and discussions as to the nature of Chipfellow's thought. The majority leaned to the belief that it would be scientific in nature because Chipfellow was the world's greatest scientist.

This appeared to give scientifically trained brains the edge and those fortunate in this respect spent long hours learning what they could of Chipfellow's life, trying to divine his performance in the realm of thought.

So intense was the interest created that scarcely anyone paid attention to the activities of Chipfellow's closer relatives. They sued to break the will but met with defeat. The verdict was rendered speedily, after which the judge who made the ruling declared a recess and bought the eleven thousandth position in line for five hundred dollars.

On the morning of the appointed day, the gates were opened and the line moved toward the vault. The first man took his seat on the bench. A stopwatch clicked. A great silence settled over the watchers. This lasted for thirty seconds after which the watch clicked again. The man got up from the bench eighteen thousand dollars poorer.

The vault had not opened.

Nor did it open the next day, the next, nor the next. A week passed, a month, six months. And at the end of that time it was estimated that more than twenty-five thousand people had tried their luck and failed.

Each failure was greeted with a public sigh of relief--relief from both those who were waiting for a turn and those who were getting rich from the commercial enterprises abutting upon the Chipfellow estate.

There was a motel, a hotel, a few night clubs, a lot of restaurants, a hastily constructed bus terminal, an airport and several turned into parking lots at a dollar a head.

The line was a permanent thing and it was soon necessary to build a cement walk because the ever-present hopeful were standing in a ditch a foot deep.

There also continued to be an active business in positions, a group of professional standers having sprung up, each with an assistant to bring food and coffee and keep track of the ever fluctuating market in positions.

And still no one opened Chipfellow's vault.

It was conceded that the big endowment funds had the inside track because they had the money to hire the best brains in the world; men who were almost as able scientifically as had been Chipfellow himself but unfortunately hadn't made as much money. The monied interests also had access to the robot calculators that turned out far more plausible thoughts than there were positions in the line.

A year passed. The vault remained locked.

* * * * *

By that time the number of those who had tried and failed, and were naturally disgruntled, was large enough to be heard, so a rumor got about that the whole thing was a vast hoax--a mean joke perpetrated upon the helpless public by a lousy old crook who hadn't any money in the first place.

Vituperative editorials were written--by editors who had stood in line and thrown futile thoughts at the great door. These editorials were vigorously rebutted by editors and columnists who as yet had not had a chance to try for the jackpot.

One senator, who had tried and missed, introduced a law making it illegal to sit on a stone bench and hurl a thought at a door.

There were enough congressional failures to pass the law. It went to the Supreme Court, but was tossed out because they said you couldn't pass a law prohibiting a man from thinking.
And still the vault remained closed.

Until Mr. and Mrs. Wilson, farm people impoverished by reverses, spent their last ten dollars for two thoughts and waited out the hours and the days in line. Their daughter Susan, aged nine, waited with them, passing the time by telling her doll fairy tales and wondering what the world looked like to a bird flying high up over a tree top. Susan was glad when her mother and father reached the bench because then they all could go home and see how her pet rabbit was doing.

Mr. Wilson hurled his thought and moved on with drooping shoulders. Mrs. Wilson threw hers and was told to leave the bench. The guard looked at Susan. "Your turn," he said.

"But I haven't got any thought," Susan said. "I just want to go home."

This made no sense to the guard. The line was being held up. People were grumbling. The guard said, "All right, but that was silly. You could have sold your position for good money. Run along with your mother and father."

Susan started away. Then she looked at the vault which certainly resembled a mausoleum and said, "Wait—I have too got a little thought," and she popped onto the bench.

The guard frowned and snapped his stop watch. Susan screwed her eyes tight shut. She tried to see an angel with big white wings like she sometimes saw in her dreams and she also tried to visualize a white-haired, jolly-faced little man as she considered Mr. Chipfellow to be. Her lips moved soundlessly as she said,

"Dear God and all the angels--please have pity on poor Mr. Chipfellow for dying and please make him happy in heaven.

Then Susan got off the bench quickly to run after her mother and father who had not waited.

There was the sound of metal grinding upon metal and the great door was swinging open.

THE END

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Contents

THE GREEN BERET
By Tom Purdom

*It's not so much the decisions a man does make that mark him as a Man—*but the ones he refrains from making.

*Like the decision "I've had enough!"

---

Read locked the door and drew his pistol. Sergeant Rashid handed Premier Umluana the warrant. "We're from the UN Inspector Corps," Sergeant Rashid said. "I'm very sorry, but we have to arrest you and bring you in for trial by the World Court."

If Umluana noticed Read's gun, he didn't show it. He read the warrant carefully. When he finished, he said something in Dutch.

"I don't know your language," Rashid said.

"Then I'll speak English." Umluana was a small man with wrinkled brow, glasses and a mustache. His skin was a shade lighter than Read's. "The Inspector General doesn't have the power to arrest a head of state—especially the Premier of Belderkan. Now, if you'll excuse me, I must return to my party."

In the other room people laughed and talked. Glasses clinked in the late afternoon. Read knew two armed men stood just outside the door. "If you leave, Premier, I'll have to shoot you."

"I don't think so," Umluana said. "No, if you kill me, all Africa will rise against the world. You don't want me dead. You want me in court."

Read clicked off the safety.

"Corporal Read is very young," Rashid said, "but he's a crack shot. That's why I brought him with me. I think he likes to shoot, too."

Umluana turned back to Rashid a second too soon. He saw the sergeant's upraised hand before it collided with his neck.

"Help! Kidnap."

Rashid judo chopped him and swung the inert body over his shoulders. Read pulled a flat grenade from his vest pocket. He dropped it and yellow psycho gas hissed from the valve.

"Let's be off," Rashid said.

The door lock snapped as they went out the window. Two men with rifles plunged into the gas; sighing, they
fell to the floor in a catatonic trance.

A little car skidded across the lawn. Bearing the Scourge of Africa, Rashid struggled toward it. Read walked backward, covering their retreat.

The car stopped, whirling blades holding it a few inches off the lawn. They climbed in.
"How did it go?" the driver and another inspector occupied the front seat.
"They'll be after us in half a minute."
The other inspector carried a light machine gun and a box of grenades. "I better cover," he said.
"Thanks," Rashid said.

The inspector slid out of the car and ran to a clump of bushes. The driver pushed in the accelerator. As they swerved toward the south, Read saw a dozen armed men run out of the house. A grenade arced from the bushes and the pursuers recoiled from the cloud that rose before them.

"Is he all right?" the driver asked.
"I don't think I hurt him," Rashid took a syrette from his vest pocket. "Well, Read, it looks like we're in for a fight. In a few minutes Miaka Station will know we're coming. And God knows what will happen at the Game Preserve."

Read wanted to jump out of the car. He could die any minute. But he had set his life on a well-oiled track and he couldn't get off until they reached Geneva.

"They don't know who's coming," he said. "They don't make them tough enough to stop this boy."

Staring straight ahead, he didn't see the sergeant smile.

Two types of recruits are accepted by the UN Inspector Corps: those with a fanatic loyalty to the ideals of peace and world order, and those who are loyal to nothing but themselves. Read was the second type.

A tall, lanky Negro he had spent his school days in one of the drab suburbs that ring every prosperous American city. It was the home of factory workers, clerks, semiskilled technicians, all who do the drudge work of civilization and know they will never do more. The adults spent their days with television, alcohol and drugs; the young spent their days with gangs, sex, television and alcohol. What else was there? Those who could have told him neither studied nor taught at his schools. What he saw on the concrete fields between the tall apartment houses marked the limits of life's possibilities.

He had belonged to a gang called The Golden Spacemen. "Nobody fools with me," he bragged. "When Harry Read's out, there's a tiger running loose." No one knew how many times he nearly ran from other clubs, how carefully he picked the safest spot on the battle line.

"A man ought to be a man," he once told a girl. "He ought to do a man's work. Did you ever notice how our fathers look, how they sleep so much? I don't want to be like that. I want to be something proud."

He joined the UN Inspector Corps at eighteen, in 1978. The international cops wore green berets, high buttonless boots, bush jackets. They were very special men.

For the first time in his life, his father said something about his ambitions.

"Don't you like America, Harry? Do you want to be without a country? This is the best country in the world. All my life I've made a good living. Haven't you had everything you ever wanted? I've been a king compared to people overseas. Why, you stay here and go to trade school and in two years you'll be living just like me."

"I don't want that," Read said.
"What do you mean, you don't want that?"
"You could join the American Army," his mother said. "That's as good as a trade school. If you have to be a soldier."

"I want to be a UN man. I've already enlisted. I'm in! What do you care what I do?"

The UN Inspector Corps had been founded to enforce the Nuclear Disarmament Treaty of 1966. Through the years it had acquired other jobs. UN men no longer went unarmed. Trained to use small arms and gas weapons, they guarded certain borders, bodyguarded diplomats and UN officials, even put down riots that threatened international peace. As the UN evolved into a strong world government, the UN Inspector Corps steadily acquired new powers.

Read went through six months training on Madagascar.

Twice he nearly got expelled for picking fights with smaller men. Rather than resign, he accepted punishment which assigned him to weeks of dull, filthy extra labor. He hated the restrictions and the iron fence of regulations. He hated boredom, loneliness and isolation.

And yet he responded with enthusiasm. They had given him a job. A job many people considered important.

He took his turn guarding the still disputed borders of Korea. He served on the rescue teams that patrol the busy Polar routes. He mounted guard at the 1980 World's Fair in Rangoon.

"I liked Rangoon," he even told a friend. "I even liked Korea. But I think I liked the Pole job best. You sit
around playing cards and shooting the bull and then there's a plane crash or something and you go out and win a medal. That's great for me. I'm lazy and I like excitement."

* * * * *

One power implied in the UN Charter no Secretary General or Inspector General had ever tried to use. The power to arrest any head of state whose country violated international law. Could the World Court try and imprison a politician who had conspired to attack another nation?

For years Africa had been called "The South America of the Old World." Revolution followed revolution. Colonies became democracies. Democracies became dictatorships or dissolved in civil war. Men planted bases on the moon and in four years, 1978-82, ringed the world with matter transmitters; but the black population of Africa still struggled toward political equality.

Umluana took control of Belderkan in 1979. The tiny, former Dutch colony, had been a tottering democracy for ten years. The very day he took control the new dictator and his African party began to build up the Belderkan Army. For years he had preached a new Africa, united, free of white masters, the home of a vigorous and perfect Negro society. His critics called him a hypocritical racist, an opportunist using the desires of the African people to build himself an empire.

He began a propaganda war against neighboring South Africa, promising the liberation of that strife-torn land. Most Negro leaders, having just won representation in the South African Parliament, told him to liberate his own country. They believed they could use their first small voice in the government to win true freedom for their people.

But the radio assault and the arms buildup continued. Early in 1982, South Africa claimed the Belderkan Army exceeded the size agreed to in the Disarmament Treaty. The European countries and some African nations joined in the accusation. China called the uproar a vicious slur on a new African nation. The United States and Russia, trying not to get entangled, asked for more investigation by the UN.

But the evidence was clear. Umluana was defying world law. If he got away with it, some larger and more dangerous nation might follow his precedent. And the arms race would begin again.

The Inspector General decided. They would enter Belderkan, arrest Umluana and try him by due process before the World Court. If the plan succeeded, mankind would be a long step farther from nuclear war.

Read didn't know much about the complicated political reasons for the arrest. He liked the Corp and he liked being in the Corp. He went where they sent him and did what they told him to do.

* * * * *

The car skimmed above the tree-tops. The driver and his two passengers scanned the sky.

A plane would have been a faster way to get out of the country. But then they would have spent hours flying over Africa, with Belderkan fighters in hot pursuit, other nations joining the chase and the world uproar gaining volume. By transmitter, if all went well, they could have Umluana in Geneva in an hour.

They were racing toward Miaka, a branch transmitter station. From Miaka they would transmit to the Belderkan Preserve, a famous tourist attraction whose station could transmit to any point on the globe. Even now a dozen inspectors were taking over the Game Preserve station and manning its controls.

They had made no plans to take over Miaka. They planned to get there before it could be defended. "There's no military base near Miaka," Rashid said. "We might get there before the Belderkans."

"Here comes our escort," Read said.

A big car rose from the jungle. This one had a recoilless rifle mounted on the roof. The driver and the gunner waved and fell in behind them.

"One thing," Read said, "I don't think they'll shoot at us while he's in the car."

"Don't be certain, corporal. All these strong-arm movements are alike. I'll bet Umluana's lieutenants are hoping he'll become a dead legend. Then they can become live conquerors."

Sergeant Rashid came from Cairo. He had degrees in science and history from Cambridge but only the Corp gave him work that satisfied his conscience. He hated war. It was that simple.

Read looked back. He saw three spots of sunlight about two hundred feet up and a good mile behind.

"Here they come, Sarge."

Rashid turned his head. He waved frantically. The two men in the other car waved back.

"Shall I duck under the trees?" the driver asked.

"Not yet. Not until we have to."

Read fingered the machine gun he had picked up when he got in the car. He had never been shot at. Twice he had faced an unarmed mob, but a few shots had sent them running.

Birds flew screaming from their nests. Monkeys screeched and threw things at the noisy, speeding cars. A little cloud of birds surrounded each vehicle.

The escort car made a sharp turn and charged their pursuers. The big rifle fired twice. Read saw the Belderkan
cars scatter. Suddenly machine-gun bullets cracked and whined beside him.

"Evade," Rashid said. "Don't go down."
Without losing any forward speed, the driver took them straight up. Read's stomach bounced.
A shell exploded above them. The car rocked. He raised his eyes and saw a long crack in the roof.
"Hit the floor," Rashid said.
They knelt on the cramped floor. Rashid put on his gas mask and Read copied him. Umluana breathed like a
furnace, still unconscious from the injection Rashid had given him.
I can't do anything, Read thought. They're too far away to shoot back. All we can do is run.
The sky was clear and blue. The jungle was a noisy bazaar of color. In the distance guns crashed. He listened to
shells whistle by and the whipcrack of machine-gun bullets. The car roller-coastered up and down. Every time a
shell passed, he crawled in waves down his own back.
Another explosion, this time very loud.
Rashid raised his eyes above the seat and looked out the rear window. "Two left. Keep down, Read."
"Can't we go down?" Read said.
"They'll get to Miaka before us."
He shut his eyes when he heard another loud explosion.
Sergeant Rashid looked out the window again. He swore bitterly in English and Egyptian. Read raised his head.
The two cars behind them weren't fighting each other. A long way back the tree-tops burned.
"How much farther?" Rashid said. The masks muffled their voices.
"There it is now. Shall I take us right in?"
"I think you'd better."
* * * * *
The station was a glass diamond in a small clearing. The driver slowed down, then crashed through the glass
walls and hovered by the transmitter booth.
Rashid opened the door and threw out two grenades. Read jumped out and the two of them struggled toward
the booth with Umluana. The driver, pistol in hand, ran for the control panel.
There were three technicians in the station and no passengers. All three panicked when the psycho gas
enveloped them. They ran howling for the jungle.
Through the window of his mask, Read saw their pursuers land in the clearing. Machine-gun bullets raked the
building. They got Umluana in the booth and hit the floor. Read took aim and opened fire on the largest car.
"Now, I can shoot back," he said. "Now we'll see what they do."
"Are you ready, Rashid?" yelled the driver.
"Man, get us out of here!"
The booth door shut. When it opened, they were at the Game Preserve.
The station jutted from the side of a hill. A glass-walled waiting room surrounded the bank of transmitter
booths. Read looked out the door and saw his first battlefield.
Directly in front of him, his head shattered by a bullet, a dead inspector lay behind an overturned couch.
Read had seen dozens of training films taken during actual battles or after atomic attacks. He had laughed when
other recruits complained. "That's the way this world is. You people with the weak stomachs better get used to it."
Now he slid against the rear wall of the transmitter booth.
A wounded inspector crawled across the floor to the booth. Read couldn't see his wound, only the pain
scratched on his face and the blood he deposited on the floor.
"Did you get Umluana?" he asked Sergeant Rashid.
"He's in the booth. What's going on?" Rashid's Middle East Oxford seemed more clipped than ever.
"They hit us with two companies of troops a few minutes ago. I think half our men are wounded."
"Can we get out of here?"
"They machine-gunned the controls."
Rashid swore. "You heard him, Read! Get out there and help those men."
He heard the screams of the wounded, the crack of rifles and machine guns, all the terrifying noise of war. But
since his eighteenth year he had done everything his superiors told him to do.
He started crawling toward an easy-chair that looked like good cover. A bullet cracked above his head, so close
he felt the shock wave. He got up, ran panicky, crouched, and dove behind the chair.
An inspector cracked the valve on a smoke grenade. A white fog spread through the building. They could see
anyone who tried to rush them but the besiegers couldn't pick out targets.
Above the noise, he heard Rashid.
"I'm calling South Africa Station for a copter. It's the only way out of here. Until it comes, we've got to hold
them back."

Read thought of the green beret he had stuffed in his pocket that morning. He stuck it on his head and cocked it.
He didn't need plain clothes anymore and he wanted to wear at least a part of his uniform.

Bullets had completely shattered the wall in front of him. He stared through the murk, across the broken glass.
He was Corporal Harry Read, UN Inspector Corps—a very special man. If he didn't do a good job here, he wasn't the
man he claimed to be. This might be the only real test he would ever face.

* * * * *

He heard a shout in rapid French. He turned to his right. Men in red loincloths ran zigzagging toward the
station. They carried light automatic rifles. Half of them wore gas masks.

"Shoot the masks," he yelled. "Aim for the masks."

The machine gun kicked and chattered on his shoulder. He picked a target and squeezed off a burst. Tensely, he
hunted for another mask. Three grenades arced through the air and yellow gas spread across the battlefield. The
attackers ran through it. A few yards beyond the gas, some of them turned and ran for their own lines. In a moment
only half a dozen masked men still advanced. The inspectors fired a long, noisy volley. When they stopped only four
attackers remained on their feet. And they were running for cover.

The attackers had come straight up a road that led from the Game Preserve to the station. They had not
expected any resistance. The UN men had already taken over the station, chased out the passengers and technicians
and taken up defense positions; they had met the Belderkans with a dozen grenades and sent them scurrying for
cover. The fight so far had been vicious but disorganized. But the Belderkans had a few hundred men and knew they
had wrecked the transmitter controls.

The first direct attack had been repulsed. They could attack many more times and continue to spray the building
with bullets. They could also try to go around the hill and attack the station from above; if they did, the inspectors
had a good view of the hill and should see them going up.

The inspectors had taken up good defensive positions. In spite of their losses, they still had enough firepower to
cover the area surrounding the station.

Read surveyed his sector of fire. About two hundred yards to his left, he saw the top of a small ditch. Using the
ditch for cover, the Belderkans could sneak to the top of the hill.

Gas grenades are only three inches long. They hold cubic yards of gas under high pressure. Read unclipped a
telescoping rod from his vest pocket. He opened it and a pair of sights flipped up. A thin track ran down one side.

He had about a dozen grenades left, three self-propelling. He slid an SP grenade into the rod's track and
estimated windage and range. Sighting carefully, not breathing, muscles relaxed, the rod rock steady, he fired and
lobbed the little grenade into the ditch. He dropped another grenade beside it.

The heavy gas would lie there for hours.

Sergeant Rashid ran crouched from man to man. He did what he could to shield the wounded.

"Well, corporal, how are you?"
"Not too bad, sergeant. See that ditch out there? I put a little gas in it."
"Good work. How's your ammunition?"
"A dozen grenades. Half a barrel of shells."
"The copter will be here in half an hour. We'll put Umluana on, then try to save ourselves. Once he's gone, I
think we ought to surrender."

"How do you think they'll treat us?"
"That we'll have to see."

An occasional bullet cracked and whined through the misty room. Near him a man gasped frantically for air.

On the sunny field a wounded man screamed for help.

"There's a garage downstairs," Rashid said. "In case the copter doesn't get here on time, I've got a man filling
wine bottles with gasoline."

"We'll stop them, Sarge. Don't worry."

* * * * *

Rashid ran off. Read stared across the green land and listened to the pound of his heart. What were the
Belderkans planning? A mass frontal attack? To sneak in over the top of the hill?

He didn't think, anymore than a rabbit thinks when it lies hiding from the fox or a panther thinks when it
crouches on a branch above the trail. His skin tightened and relaxed on his body.

"Listen," said a German.

Far down the hill he heard the deep-throated rumble of a big motor.

"Armor," the German said.

The earth shook. The tank rounded the bend. Read watched the squat, angular monster until its stubby gun
pointed at the station. It stopped less than two hundred yards away.

A loud-speaker blared.

ATTENTION UN SOLDIERS. ATTENTION UN SOLDIERS. YOU MAY THINK US SAVAGES BUT WE
HAVE MODERN WEAPONS. WE HAVE ATOMIC WARHEADS, ALL GASES, ROCKETS AND FLAME
THROWERS. IF YOU DO NOT SURRENDER OUR PREMIER, WE WILL DESTROY YOU.

"They know we don't have any big weapons," Read said. "They know we have only gas grenades and small
arms."

He looked nervously from side to side. They couldn't bring the copter in with that thing squatting out there.

A few feet away, sprawled behind a barricade of tables, lay a man in advanced shock. His deadly white skin
shone like ivory. They wouldn't even look like that. One nuclear shell from that gun and they'd be vaporized. Or
perhaps the tank had sonic projectors; then the skin would peel off their bones. Or they might be burned, or cut up
by shrapnel, or gassed with some new mist their masks couldn't filter.

Read shut his eyes. All around him he heard heavy breathing, mumbled comments, curses. Clothes rustled as
men moved restlessly.

But already the voice of Sergeant Rashid resounded in the murky room.

"We've got to knock that thing out before the copter comes. Otherwise, he can't land. I have six Molotov
cocktails here. Who wants to go hunting with me?"

For two years Read had served under Sergeant Rashid. To him, the sergeant was everything a UN inspector
should be. Rashid's devotion to peace had no limits.

Read's psych tests said pride alone drove him on. That was good enough for the UN; they only rejected men
whose loyalties might conflict with their duties. But an assault on the tank required something more than a hunger
for self-respect.

Read had seen the inspector who covered their getaway. He had watched their escort charge three-to-one odds.
He had seen another inspector stay behind at Miaka Station. And here, in this building, lay battered men and dead
men.

All UN inspectors. All part of his life.
And he was part of their life. Their blood, their sacrifice, and pain, had become a part of him.
"I'll take a cocktail, Sarge."
"Is that Read?"
"Who else did you expect?"
"Nobody. Anybody else?"
"I'll go," the Frenchman said. "Three should be enough. Give us a good smoke screen."

Rashid snapped orders. He put the German inspector in charge of Umluana. Read, the Frenchman and himself,
he stationed at thirty-foot intervals along the floor.

"Remember," Rashid said. "We have to knock out that gun."

Read had given away his machine gun. He held a gas-filled bottle in each hand. His automatic nestled in its
shoulder holster.

Rashid whistled.

Dozens of smoke grenades tumbled through the air. Thick mist engulfed the tank. Read stood up and ran
forward. He crouched but didn't zigzag. Speed counted most here.

Gunfire shook the hill. The Belderkans couldn't see them but they knew what was going on and they fired
systematically into the smoke.

Bullets ploughed the ground beside him. He raised his head and found the dim silhouette of the tank. He tried
not to think about bullets ploughing through his flesh.

A bullet slammed into his hip. He fell on his back, screaming. "Sarge. Sarge."

"I'm hit, too," Rashid said. "Don't stop if you can move."

Listen to him. What's he got, a sprained ankle?

But he didn't feel any pain. He closed his eyes and threw himself onto his stomach. And nearly fainted from
pain. He screamed and quivered. The pain stopped. He stretched out his hands, gripping the wine bottles, and inched
forward. Pain stabbed him from stomach to knee.

"I can't move, Sarge."

"Read, you've got to. I think you're the only--"

"What?"

Guns clattered. Bullets cracked.

"Sergeant Rashid! Answer me."
He heard nothing but the lonely passage of the bullets in the mist.

"I'm a UN man," he mumbled. "You people up there know what a UN man is? You know what happens when you meet one?"

When he reached the tank, he had another bullet in his right arm. But they didn't know he was coming and when you get within ten feet of a tank, the men inside can't see you.

He just had to stand up and drop the bottle down the gun barrel. That was all—with a broken hip and a wounded right arm.

He knew they would see him when he stood up but he didn't think about that. He didn't think about Sergeant Rashid, about the complicated politics of Africa, about crowded market streets. He had to kill the tank. That was all he thought about. He had decided something in the world was more important than himself, but he didn't know it or realize the psychologists would be surprised to see him do this. He had made many decisions in the last few minutes. He had ceased to think about them or anything else.

With his cigarette lighter, he lit the rag stuffed in the end of the bottle.

Biting his tongue, he pulled himself up the front of the tank. His long arm stretched for the muzzle of the gun. He tossed the bottle down the dark throat.

As he fell, the machine-gun bullets hit him in the chest, then in the neck. He didn't feel them. He had fainted the moment he felt the bottle leave his hand.

The copter landed ten minutes later. Umluana left in a shower of bullets. A Russian private, the ranking man alive in the station, surrendered the survivors to the Belderkans.

His mother hung the Global Medal above the television set.

"He must have been brave," she said. "We had a fine son."

"He was our only son," her husband said. "What did he volunteer for? Couldn't somebody else have done it?"

His wife started to cry. Awkwardly, he embraced her. He wondered what his son had wanted that he couldn't get at home.

THE END

Contents

A FILBERT IS A NUT
By Rick Raphael

That the gentleman in question was a nut was beyond question. He was an institutionalized psychotic. He was nutty enough to think he could make an atom bomb out of modeling clay!

Miss Abercrombie, the manual therapist patted the old man on the shoulder. "You're doing just fine, Mr. Lieberman. Show it to me when you have finished."

The oldster in the stained convalescent suit gave her a quick, shy smile and went back to his aimless smearing in the finger paints.

Miss Abercrombie smoothed her smock down over trim hips and surveyed the other patients working at the long tables in the hospital's arts and crafts shop. Two muscular and bored attendants in spotless whites, lounged beside the locked door and chatted idly about the Dodgers' prospects for the pennant.

Through the barred windows of the workshop, rolling green hills were seen, their tree-studded flanks making a pleasant setting for the mental institution. The crafts building was a good mile away from the main buildings of the hospital and the hills blocked the view of the austere complex of buildings that housed the main wards.

The therapist strolled down the line of tables, pausing to give a word of advice here, and a suggestion there.

She stopped behind a frowning, intense patient, rapidly shaping blobs of clay into odd-sized strips and forms. As he finished each piece, he carefully placed it into a hollow shell hemisphere of clay.

"And what are we making today, Mr. Funston?" Miss Abercrombie asked.

The flying fingers continued to whip out the bits of shaped clay as the patient ignored the question. He hunched closer to his table as if to draw away from the woman.

"We mustn't be antisocial, Mr. Funston," Miss Abercrombie said lightly, but firmly. "You've been coming along famously and you must remember to answer when someone talks to you. Now what are you making? It looks very complicated." She stared professionally at the maze of clay parts.
Thaddeus Funston continued to mold the clay bits and put them in place. Without looking up from his bench he muttered a reply. "Atom bomb." A puzzled look crossed the therapist's face. "Pardon me, Mr. Funston. I thought you said an 'atom bomb.'" "Did," Funston murmured. Safely behind the patient's back, Miss Abercrombie smiled ever so slightly. "Why that's very good, Mr. Funston. That shows real creative thought. I'm very pleased." She patted him on the shoulder and moved down the line of patients. A few minutes later, one of the attendants glanced at his watch, stood up and stretched. "All right, fellows," he called out, "time to go back. Put up your things." There was a rustle of paint boxes and papers being shuffled and chairs being moved back. A tall, blond patient with a flowing mustache, put one more dab of paint on his canvas and stood back to survey the meaningless smears. He sighed happily and laid down his palette.

At the clay table, Funston feverishly fabricated the last odd-shaped bit of clay and slapped it into place. With a furtive glance around him, he clapped the other half of the clay sphere over the filled hemisphere and then stood up. The patients lined up at the door, waiting for the walk back across the green hills to the main hospital. The attendants made a quick count and then unlocked the door. The group shuffled out into the warm, afternoon sunlight and the door closed behind them.

Miss Abercrombie gazed around the cluttered room and picked up her chart book of patient progress. Moving slowly down the line of benches, she made short, precise notes on the day's work accomplished by each patient. At the clay table, she carefully lifted the top half of the clay ball and stared thoughtfully at the jumbled maze of clay strips laced through the lower hemisphere. She placed the lid back in place and jotted lengthily in her chart book.

When she had completed her rounds, she slipped out of the smock, tucked the chart book under her arm and left the crafts building for the day. The late afternoon sun felt warm and comfortable as she walked the mile to the main administration building where her car was parked.

As she drove out of the hospital grounds, Thaddeus Funston stood at the barred window of his locked ward and stared vacantly over the hills towards the craft shop. He stood there unmoving until a ward attendant came and took his arm an hour later to lead him off to the patients' mess hall.

* * * * *

The sun set, darkness fell over the stillled hospital grounds and the ward lights winked out at nine o'clock, leaving just a single light burning in each ward office. A quiet wind sighed over the still-warm hills. At 3:01 a.m., Thaddeus Funston stirred in his sleep and awakened. He sat up in bed and looked around the dark ward. The quiet breathing and occasional snores of thirty other sleeping patients filled the room. Funston turned to the window and stared out across the black hills that sheltered the deserted crafts building.

He gave a quick cry, shut his eyes and clapped his hands over his face. The brilliance of a hundred suns glared in the night and threw stark shadows on the walls of the suddenly-illuminated ward.

An instant later, the shattering roar and blast of the explosion struck the hospital buildings in a wave of force and the bursting crash of a thousand windows was lost in the fury of the explosion and the wild screams of the frightened and demented patients.

It was over in an instant, and a stunned moment later, recessed ceiling lights began flashing on throughout the big institution. Beyond the again-silent hills, a great pillar of smoke, topped by a small mushroom-shaped cloud, rose above the gaping hole that had been the arts and crafts building. Thaddeus Funston took his hands from his face and lay back in his bed with a small, secret smile on his lips. Attendants and nurses scurried through the hospital, seeing how many had been injured in the explosion. None had. The hills had absorbed most of the shock and apart from a welter of broken glass, the damage had been surprisingly slight.

The roar and flash of the explosion had lighted and rocked the surrounding countryside. Soon firemen and civil defense disaster units from a half-dozen neighboring communities had gathered at the still-smoking hole that marked the site of the vanished crafts building. Within fifteen minutes, the disaster-trained crews had detected heavy radiation emanating from the crater and there was a scurry of men and equipment back to a safe distance, a few hundred yards away.

At 5:30 a.m., a plane landed at a nearby airfield and a platoon of Atomic Energy Commission experts, military
intelligence men, four FBI agents and an Army full colonel disembarked.

At 5:45 a.m. a cordon was thrown around both the hospital and the blast crater.

In Ward 4-C, Thadeus Funston slept peacefully and happily. "It's impossible and unbelievable," Colonel Thomas Thurgood said for the fifteenth time, later that morning, as he looked around the group of experts gathered in the tent erected on the hill overlooking the crater. "How can an atom bomb go off in a nut house?"

"It apparently was a very small bomb, colonel," one of the haggard AEC men offered timidly. "Not over three kilotons."

"I don't care if it was the size of a peanut," Thurgood screamed. "How did it get here?"

A military intelligence agent spoke up. "If we knew, sir, we wouldn't be standing around here. We don't know, but the fact remains that it WAS an atomic explosion."

Thurgood turned wearily to the small, white-haired man at his side. "Let's go over it once more, Dr. Crane. Are you sure you knew everything that was in that building?" Thurgood swept his hand in the general direction of the blast crater.

"Colonel, I've told you a dozen times," the hospital administrator said with exasperation, "this was our manual therapy room. We gave our patients art work. It was a means of getting out of their systems, through the use of their hands, some of the frustrations and problems that led them to this hospital. They worked with oil and water paints and clay. If you can make an atomic bomb from vermillion pigments, then Madame Curie was a misguided scrubwoman."

"All I know is that you say this was a crafts building. O.K. So it was," Thurgood sighed. "I also know that an atomic explosion at 3:02 this morning blew it to hell and gone."

"And I've got to find out how it happened."

Thurgood slumped into a field chair and gazed tiredly up at the little doctor. "Where's that girl you said was in charge of this place?"

"We've already called for Miss Abercrombie and she's on her way here now," the doctor snapped.

Outside the tent, a small army of military men and AEC technicians moved around the perimeter of the crater, scintillators in hand, examining every tiny scrap that might have been a part of the building at one time.

A jeep raced down the road from the hospital and drew up in front of the tent. An armed MP helped Miss Abercrombie from the vehicle.

She walked to the edge of the hill and looked down with a stunned expression. "He did make an atom bomb," she cried.

Colonel Thurgood, who had snapped from his chair at her words, leaped forward to catch her as she collapsed in a faint.

At 4:00 p.m., the argument was still raging in the long, narrow staff room of the hospital administration building.

Colonel Thurgood, looking more like a patient every minute, sat on the edge of his chair at the head of a long table and pounded with his fist on the wooden surface, making Miss Abercrombie's chart book bounce with every beat.

"It's ridiculous," Thurgood roared. "We'll all be the laughingstocks of the world if this ever gets out. An atomic bomb made out of clay. You are all nuts. You're in the right place, but count me out."

At his left, Miss Abercrombie cringed deeper into her chair at the broadside. Down both sides of the long table, psychiatrists, physicists, strategists and radiologists sat in various stages of nerve-shattered weariness.

"Miss Abercrombie," one of the physicists spoke up gently, "you say that after the patients had departed the building, you looked again at Funston's work?"

The therapist nodded unhappily.

"And you say that, to the best of your knowledge," the physicist continued, "there was nothing inside the ball but other pieces of clay."

"I'm positive that's all there was in it," Miss Abercrombie cried.

There was a renewed buzz of conversation at the table and the senior AEC man present got heads together with the senior intelligence man. They conferred briefly and then the intelligence officer spoke.

"That seems to settle it, colonel. We've got to give this Funston another chance to repeat his bomb. But this time under our supervision."

Thurgood leaped to his feet, his face purpling. "Are you crazy?" he screamed. "You want to get us all thrown into this filbert factory? Do you know what the newspapers would do to us if they ever got wind of the fact, that for one, tiny fraction of a second, anyone of us here
entertained the notion that a paranoidal idiot with the IQ of an ape could make an atomic bomb out of kid's modeling clay?

"They'd crucify us, that's what they'd do!"

At 8:30 that night, Thaddeus Funston, swathed in an Army officer's greatcoat that concealed the strait jacket binding him and with an officer's cap jammed far down over his face, was hustled out of a small side door of the hospital and into a waiting staff car. A few minutes later, the car pulled into the flying field at the nearby community and drove directly to the military transport plane that stood at the end of the runway with propellers turning.

Two military policemen and a brace of staff psychiatrists sworn to secrecy under the National Atomic Secrets Act, bundled Thaddeus aboard the plane. They plopped him into a seat directly in front of Miss Abercrombie and with a roar, the plane raced down the runway and into the night skies.

The plane landed the next morning at the AEC's atomic testing grounds in the Nevada desert and two hours later, in a small hot, wooden shack miles up the barren desert wastelands, a cluster of scientists and military men huddled around a small wooden table.

There was nothing on the table but a bowl of water and a great lump of modeling clay. While the psychiatrists were taking the strait jacket off Thaddeus in the staff car outside, Colonel Thurgood spoke to the weary Miss Abercrombie.

"Now you're positive this is just about the same amount and the same kind of clay he used before?"

"I brought it along from the same batch we had in the store room at the hospital," she replied, "and it's the same amount."

Thurgood signaled to the doctors and they entered the shack with Thaddeus Funston between them. The colonel nudged Miss Abercrombie.

She smiled at Funston.

"Now isn't this nice, Mr. Funston," she said. "These nice men have brought us way out here just to see you make another atom bomb like the one you made for me yesterday."

A flicker of interest lightened Thaddeus' face. He looked around the shack and then spotted the clay on the table. Without hesitation, he walked to the table and sat down. His fingers began working the damp clay, making first the hollow, half-round shell while the nation's top atomic scientists watched in fascination.

His busy fingers flew through the clay, shaping odd, flat bits and clay parts that were dropped almost aimlessly into the open hemisphere in front of him.

Miss Abercrombie stood at his shoulder as Thaddeus hunched over the table just as he had done the previous day. From time to time she glanced at her watch. The maze of clay strips grew and as Funston finished shaping the other half hemisphere of clay, she broke the tense silence.

"Time to go back now, Mr. Funston. You can work some more tomorrow." She looked at the men and nodded her head.

The two psychiatrists went to Thaddeus' side as he put the upper lid of clay carefully in place. Funston stood up and the doctors escorted him from the shack.

There was a moment of hushed silence and then pandemonium burst. The experts converged on the clay ball, instruments blossoming from nowhere and cameras clicking.

For two hours they studied and gently probed the mass of child's clay and photographed it from every angle.

Then they left for the concrete observatory bunker, several miles down range where Thaddeus and the psychiatrists waited inside a ring of stony-faced military policemen.

"I told you this whole thing was asinine," Thurgood snarled as the scientific teams trooped into the bunker.

Thaddeus Funston stared out over the heads of the MPs through the open door, looking uprange over the heat-shimmering desert. He gave a sudden cry, shut his eyes and clapped his hands over his face.

A brilliance a hundred times brighter than the glaring Nevada sun lit the dim interior of the bunker and the pneumatically-operated door slammed shut just before the wave of the blast hit the structure.

** * * * * *

Six hours and a jet plane trip later, Thaddeus, once again in his strait jacket, sat between his armed escorts in a small room in the Pentagon. Through the window he could see the hurried bustle of traffic over the Potomac and beyond, the domed roof of the Capitol.

In the conference room next door, the joint chiefs of staff were closeted with a gray-faced and bone-weary Colonel Thurgood and his baker's dozen of AEC brains. Scraps of the hot and scornful talk drifted across a half-opened transom into the room where Thaddeus Funston sat in a neatly-tied bundle.

In the conference room, a red-faced, four-star general cast a chilling glance at the rumpled figure of Colonel Thurgood.

"I've listened to some silly stories in my life, colonel," the general said coldly, "but this takes the cake. You
come in here with an insane asylum inmate in a strait jacket and you have the colossal gall to sit there and tell me that this poor soul has made not one, but two atomic devices out of modeling clay and then has detonated them."

The general paused.

"Why don't you just tell me, colonel, that he can also make spaceships out of sponge rubber?" the general added bitingly.

In the next room, Thaddeus Funston stared out over the sweeping panorama of the Washington landscape. He stared hard.

In the distance, a white cloud began billowing up from the base of the Washington Monument, and with an ear-shattering, glass-splintering roar, the great shaft rose majestically from its base and vanished into space on a tail of flame.

THE END
According to tradition, the man who held the Galactic Medal of Honor could do no wrong. In a strange way, Captain Don Mathers was to learn that this was true.

Don Mathers snapped to attention, snapped a crisp salute to his superior, said, “Sub-lieutenant Donal Mathers reporting, sir.”

The Commodore looked up at him, returned the salute, looked down at the report on the desk. He murmured, “Mathers, One Man Scout V-102. Sector A22-K223.”

“Yes, sir,” Don said.

The Commodore looked up at him again. "You've been out only five days, Lieutenant."

"Yes, sir, on the third day I seemed to be developing trouble in my fuel injectors. I stuck it out for a couple of days, but then decided I'd better come in for a check." Don Mathers added, "As per instructions, sir."

"Ummm, of course. In a Scout you can hardly make repairs in space. If you have any doubts at all about your craft, orders are to return to base. It happens to every pilot at one time or another."

"Yes, sir."

"However, Lieutenant, it has happened to you four times out of your last six patrols."

Don Mathers said nothing. His face remained expressionless.

"The mechanics report that they could find nothing wrong with your engines, Lieutenant."

"Sometimes, sir, whatever is wrong fixes itself. Possibly a spot of bad fuel. It finally burns out and you're back on good fuel again. But by that time you're also back to the base."

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The Commodore said impatiently, "I don't need a lesson in the shortcomings of the One Man Scout, Lieutenant. I piloted one for nearly five years. I know their shortcomings—and those of their pilots."

"I don't understand, sir."

The Commodore looked down at the ball of his thumb. "You're out in space for anywhere from two weeks to a month. All alone. You're looking for Kraden ships which practically never turn up. In military history the only remotely similar situation I can think of were the pilots of World War One pursuit planes, in the early years of the war, when they still flew singly, not in formation. But even they were up there alone for only a couple of hours or so."

"Yes, sir," Don said meaninglessly.

The Commodore said, "We, here at command, figure on you fellows getting a touch of space cafard once in a while and, ah, imagining something wrong in the engines and coming in. But," here the Commodore cleared his throat, "four times out of six? Are you sure you don't need a psych, Lieutenant?"

Don Mathers flushed. "No, sir, I don't think so."

The Commodore's voice went militarily expressionless. "Very well, Lieutenant. You'll have the customary three weeks leave before going out again. Dismissed."

Don saluted snappily, wheeled and marched from the office.

Outside, in the corridor, he muttered a curse. What did that chairborne brass hat know about space cafard? About the depthless blackness, the wretchedness of free fall, the tides of primitive terror that swept you when the animal realization hit that you were away, away, away from the environment that gave you birth. That you were alone, alone, alone. A million, a million-million miles from your nearest fellow human. Space cafard, in a craft little larger than a good-sized closet! What did the Commodore know about it?

Don Mathers had conveniently forgotten the other's claim to five years' service in the Scouts.

* * * * *

He made his way from Space Command Headquarters, Third Division, to Harry's Nuevo Mexico Bar. He found the place empty at this time of the day and climbed onto a stool.

Harry said, "Hi, Lootenant, thought you were due for a patrol. How come you're back so soon?"

Don said coldly, "You prying into security subjects, Harry?"

"Well, gee, no Lootenant. You know me. I know all the boys. I was just making conversation."

"Look, how about some more credit, Harry? I don't have any pay coming up for a week."

"Why, sure. I got a boy on the light cruiser New Taos. Any spaceman's credit is good with me. What'll it be?"
"Tequila."
Tequila was the only concession the Nuevo Mexico Bar made to its name. Otherwise, it looked like every other bar has looked in every land and in every era. Harry poured, put out lemon and salt.
Harry said, "You hear the news this morning?"
"No, I just got in."
"Colin Casey died." Harry shook his head. "Only man in the system that held the Galactic Medal of Honor. Presidential proclamation, everybody in the system is to hold five minutes of silence for him at two o'clock, Sol Time. You know how many times that medal's been awarded, Lootenant?" Before waiting for an answer, Harry added, "Just thirty-six times."
Don added dryly, "Twenty-eight of them posthumously."
"Yeah." Harry, leaning on the bar before his sole customer, added in wonder, "But imagine. The Galactic Medal of Honor, the bearer of which can do no wrong. Imagine. You come to some town, walk into the biggest jewelry store, pick up a diamond bracelet, and walk out. And what happens?"
Don growled, "The jewelry store owner would be over-reimbursed by popular subscription. And probably the mayor of the town would write you a letter thanking you for honoring his fair city by deigning to notice one of the products of its shops. Just like that."
"Yeah." Harry shook his head in continued awe. "And, imagine, if you shoot somebody you don't like, you wouldn't spend even a single night in the Nick."
Don said, "If you held the Medal of Honor, you wouldn't have to shoot anybody. Look, Harry, mind if I use the phone?"
"Go right ahead, Lootenant."
Dian Fuller was obviously in the process of packing when the screen summoned her. She looked into his face and said, surprised, "Why, Don, I thought you were on patrol."
"Yeah, I was. However, something came up."
She looked at him, a slight frown on her broad, fine forehead. "Again?"
He said impatiently, "Look, I called you to ask for a date. You're leaving for Callisto tomorrow. It's our last chance to be together. There's something in particular I wanted to ask you, Di."
She said, a touch irritated, "I'm packing, Don. I simply don't have time to see you again. I thought we said our goodbyes five days ago."
"This is important, Di."
She tossed the two sweaters she was holding into a chair, or something, off-screen, and faced him, her hands on her hips.
"No it isn't, Don. Not to me, at least. We've been all over this. Why keep torturing yourself? You're not ready for marriage, Don. I don't want to hurt you, but you simply aren't. Look me up, Don, in a few years."
"Di, just a couple of hours this afternoon."
Dian looked him full in the face and said, "Colin Casey finally died of his wounds this morning. The President has asked for five minutes of silence at two o'clock. Don, I plan to spend that time here alone in my apartment, possibly crying a few tears for a man who died for me and the rest of the human species under such extreme conditions of gallantry that he was awarded the highest honor of which man has ever conceived. I wouldn't want to spend that five minutes while on a date with another member of my race's armed forces who had deserted his post of duty."
Don Mathers turned, after the screen had gone blank, and walked stiffly to a booth. He sank onto a chair and called flatly to Harry, "Another tequila. A double tequila. And don't bother with that lemon and salt routine."

An hour or so later a voice said, "You Sub-lieutenant Donal Mathers?"
Don looked up and snarled. "So what? Go away."
There were two of them. Twins, or could have been. Empty of expression, heavy of build. The kind of men fated to be ordered around at the pleasure of those with money, or brains, none of which they had or would ever have.
The one who had spoken said, "The boss wants to see you."
"Who the hell is the boss?"
"Maybe he'll tell you when he sees you," the other said, patiently and reasonably.
"Well, go tell the boss he can go to the ..."
The second of the two had been standing silently, his hands in his great-coat pockets. Now he brought his left hand out and placed a bill before Don Mathers. "The boss said to give you this."
It was a thousand-unit note. Don Mathers had never seen a bill of that denomination before, nor one of half
that.

He pursed his lips, picked it up and looked at it carefully. Counterfeiting was a long lost art. It didn't even occur to him that it might be false.

"All right," Don said, coming to his feet. "Let's go see the boss, I haven't anything else to do and his calling card intrigues me."

At the curb, one of them summoned a cruising cab with his wrist screen and the three of them climbed into it. The one who had given Don the large denomination bill dialed the address and they settled back.

"So what does the boss want with me?" Don said.

They didn't bother to answer.

The Interplanetary Lines building was evidently their destination. The car whisked them up to the penthouse which topped it, and they landed on the terrace.

Seated in beach chairs, an autobar between them, were two men. They were both in their middle years. The impossibly corpulent one, Don Mathers vaguely recognized. From a newscast? From a magazine article? The other could have passed for a video stereotype villain, complete to the built-in sneer. Few men, in actuality, either look like or sound like the conventionalized villain. This was an exception, Don decided.

He scowled at them. "I suppose one of you is the boss," he said.

"That's right," the fat one grunted. He looked at Don's two escorts. "Scotty, you and Rogers take off."

They got back into the car and left.

The vicious-faced one said, "This is Mr. Lawrence Demming. I am his secretary."

Demming puffed, "Sit down, Lieutenant. What'll you have to drink? My secretary's name is Rostoff. Max Rostoff. Now we all know each other's names. That is, assuming you're Sub-lieutenant Donal Mathers."

Don said, "Tequila."

* * * * *

Max Rostoff dialed the drink for him and, without being asked, another cordial for his employer.

Don placed Demming now. Lawrence Demming, billionaire. Robber baron, he might have been branded in an earlier age. Transportation baron of the solar system. Had he been a pig he would have been butchered long ago; he was going unhealthily to grease.

Rostoff said, "You have identification?"

Don Mathers fingered through his wallet, brought forth his I.D. card. Rostoff handed him his tequila, took the card and examined it carefully, front and back.

Demming huffed and said, "Your collar insignia tells me you pilot a Scout. What sector do you patrol, Lieutenant?"

Don sipped at the fiery Mexican drink, looked at the fat man over the glass. "That's military information, Mr. Demming."

* * * * *

Demming made a move with his plump lips. "Did Scotty give you a thousand-unit note?" He didn't wait for an answer. "You took it. Either give it back or tell me what sector you patrol, Lieutenant."

Don Mathers was aware of the fact that a man of Demming's position wouldn't have to go to overmuch effort to acquire such information, anyway. It wasn't of particular importance.

He shrugged and said, "A22-K223. I fly the V-102."

Max Rostoff handed back the I.D. card to Don and picked up a Solar System sector chart from the short-legged table that sat between the two of them and checked it. He said, "Your information was correct, Mr. Demming. He's the man."

Demming shifted his great bulk in his beach chair, sipped some of his cordial and said, "Very well. How would you like to hold the Galactic Medal of Honor, Lieutenant?"

Don Mathers laughed. "How would you?" he said.

Demming scowled. "I am not jesting, Lieutenant Mathers. I never jest. Obviously, I am not of the military. It would be quite impossible for me to gain such an award. But you are the pilot of a Scout."

"And I've got just about as much chance of winning the Medal of Honor as I have of giving birth to triplets."

The transportation magnate wiggled a disgustingly fat finger at him, "I'll arrange for that part of it."

Don Mathers goggled him. He blurted finally, "Like hell you will. There's not enough money in the system to fiddle with the awarding of the Medal of Honor. There comes a point, Demming, where even your dough can't carry the load."

Demming settled back in his chair, closed his eyes and grunted, "Tell him."

Max Rostoff took up the ball. "A few days ago, Mr. Demming and I flew in from Io on one of the Interplanetary Lines freighters. As you probably know, they are completely automated. We were alone in the craft."
"So?" Without invitation, Don Mathers leaned forward and dialed himself another tequila. He made it a double this time. A feeling of excitement was growing within him, and the drinks he'd had earlier had worn away. Something very big, very, very big, was developing. He hadn't the vaguest idea what.

"Lieutenant, how would you like to capture a Kraden light cruiser? If I'm not incorrect, probably Miro class."

Don laughed nervously, not knowing what the other was at but still feeling the growing excitement. He said, "In all the history of the war between our species, we've never captured a Kraden ship intact. It'd help a lot if we could."

"This one isn't exactly intact, but nearly so."

Don looked from Rostoff to Demming, and then back. "What in the hell are you talking about?"

"In your sector," Rostoff said, "we ran into a derelict Miro class cruiser. The crew--repulsive creatures--were all dead. Some thirty of them. Mr. Demming and I assumed that the craft had been hit during one of the actions between our fleet and theirs and that somehow both sides had failed to recover the wreckage. At any rate, today it is floating, abandoned of all life, in your sector." Rostoff added softly, "One has to approach quite close before any signs of battle are evident. The ship looks intact."

Demming opened his eyes again and said, "And you're going to capture it."

Don Mathers bolted his tequila, licked a final drop from the edge of his lip. "And why should that rate the most difficult decoration to achieve that we've ever instituted?"

"Because," Rostoff told him, his tone grating mockery, "you're going to radio in reporting a Miro class Kraden cruiser. We assume your superiors will order you to stand off, that help is coming, that your tiny Scout isn't large enough to do anything more than to keep the enemy under observation until a squadron arrives. But you will radio back that they are escaping and that you plan to attack. When your reinforcements arrive, Lieutenant, you will have conquered the Kraden, single-handed, against odds of--what would you say, fifty to one?"

* * * * *

Don Mathers' mouth was dry, his palms moist. He said, "A One Man Scout against a Miro class cruiser? At least fifty to one, Mr. Rostoff. At least."

Demming grunted. "There would be little doubt of you getting the Galactic Medal of Honor, Lieutenant, especially since Colin Casey is dead and there isn't a living bearer of the award. Max, another drink for the Lieutenant."

Don said, "Look. Why? I think you might be right about getting the award. But why, and why me, and what's your percentage?"

* * * * *

Demming muttered, "Now we get to the point." He settled back in his chair again and closed his eyes while his secretary took over.

Max Rostoff leaned forward, his wolfish face very serious. "Lieutenant, the exploitation of the Jupiter satellites is in its earliest stages. There is every reason to believe that the new sources of radioactives on Callisto alone may mean the needed power edge that can give us the victory over the Kradens. Whether or not that is so, someone is going to make literally billions out of this new frontier."

"I still don't see ..."

"Lieutenant Mathers," Rostoff said patiently, "the bearer of the Galactic Medal of Honor is above law. He carries with him an unalienable prestige of such magnitude that ... Well, let me use an example. Suppose a bearer of the Medal of Honor formed a stock corporation to exploit the pitchblende of Callisto. How difficult would it be for him to dispose of the stock?"

Demming grunted. "And suppose there were a few, ah, crossed wires in the manipulation of the corporation's business?" He sighed deeply. "Believe me, Lieutenant Mathers, there are an incredible number of laws which have accumulated down through the centuries to hamper the business man. It is a continual fight to be able to carry on at all. The ability to do no legal wrong would be priceless in the development of a new frontier." He sighed again, so deeply as to make his bulk quiver. "Priceless."

Rostoff laid it on the line, his face a leer. "We are offering you a three-way partnership, Mathers. You, with your Medal of Honor, are our front man. Mr. Demming supplies the initial capital to get underway. And I ..." He twisted his mouth with evil self-satisfaction. "I was present when the Kraden ship was discovered, so I'll have to be cut in. I'll supply the brains."

Demming grunted his disgust, but added nothing.

Don Mathers said slowly, looking down at the empty glass he was twirling in his fingers, "Look, we're up to our necks in a war to the death with the Kradens. In the long run it's either us or them. At a time like this you're suggesting that we fake an action that will eventually enable us to milk the new satellites to the tune of billions."

Demming grunted meaninglessly.
Don said, "The theory is that all men, all of us, ought to have our shoulders to the wheel. This project sounds to me like throwing rocks under it."

Demming closed his eyes.

Rostoff said, "Lieutenant, it's a dog-eat-dog society. If we eventually lick the Kradens, one of the very reasons will be because we're a dog-eat-dog society. Every man for himself and the devil take the hindmost. Our apologists dream up some beautiful gobbledygook phrases for it, such as free enterprise, but actually it's dog-eat-dog. Surprisingly enough, it works, or at least has so far. Right now, the human race needs the radioactives of the Jupiter satellites. In acquiring them, somebody is going to make a tremendous amount of money. Why shouldn't it be us?"

"Why not, if you--or we--can do it honestly?"

Demming's grunt was nearer a snort this time.

Rostoff said sourly, "Don't be naive, Lieutenant. Whoever does it, is going to need little integrity. You don't win in a sharper's card game by playing your cards honestly. The biggest sharper wins. We've just found a joker somebody dropped on the floor; if we don't use it, we're suckers."

Demming opened his pig eyes and said, "All this is on the academic side. We checked your background thoroughly before approaching you, Mathers. We know your record, even before you entered the Space Service. Just between the three of us, wouldn't you like out? There are a full billion men and women in our armed forces, you can be spared. Let's say you've already done your share. Can't you see the potentialities in spending the rest of your life with the Galactic Medal of Honor in your pocket?"

It was there all right, drifting slowly. Had he done a more thorough job of his patrol, last time, he should have stumbled upon it himself.

If he had, there was no doubt that he would have at first reported it as an active enemy cruiser. Demming and Rostoff had been right. The Kraden ship looked untouched by battle.

That is, if you approached it from the starboard and slightly abaft the beam. From that angle, in particular, it looked untouched.

It had taken several circlings of the craft to come to that conclusion. Don Mathers was playing it very safe. This thing wasn't quite so simple as the others had thought. He wanted no slip-ups. His hand went to a food compartment and emerged with a space thermo which should have contained fruit juice, but didn't. He took a long pull at it.

Finally he dropped back into the position he'd decided upon, and flicked the switch of his screen.

A gray-haired Fleet Admiral looked up from papers on his desk.

"Yes?"

Don Mathers rapped, "Miro class Kraden in sector A22-K223, sir. I'm lying about fifty miles off. Undetected thus far--I think. He hasn't fired on me yet, at least."

The Admiral was already doing things with his hands. Two subalterns came within range of the screen, took orders, dashed off. The Admiral was rapidly firing orders into two other screens. After a moment, he looked up at Don Mathers again.

"Hang on, Lieutenant. Keep him under observation as long as you can. What're your exact coordinates?"

Don gave them to him and waited.

A few minutes later the Admiral returned to him. "Let's take a look at it, Lieutenant."

Don Mathers adjusted the screen to relay the Kraden cruiser. His palms were moist now, but everything was going to plan. He wished that he could take another drink.

The Admiral said, "Miro class, all right. Don't get too close, Lieutenant. They'll blast you to hell and gone. We've got a task force within an hour of you. Just hang on."

"Yes, sir," Don said. An hour. He was glad to know that. He didn't have much time in which to operate.

He let it go another five minutes, then he said, "Sir, they're increasing speed."

"Damn," the Admiral said, then rapid fired some more into his other screens, barking one order after another.

Don said, letting his voice go very flat, "I'm going in, sir. They're putting on speed. In another five minutes they'll be underway to the point where I won't be able to follow. They'll get completely clear."

The Admiral looked up, startled. "Don't be a fool."
"They'll get away, sir." Knowing that the other could see his every motion, Don Mathers hit the cocking lever of his flakflak gun with the heel of his right hand.

The Admiral snapped, "Let it go, you fool. You won't last a second." Then, his voice higher, "That's an order, Lieutenant!"

Don Mathers flicked off his screen. He grimaced sourly and then descended on the Kraden ship, its flakflak gun beaming it. He was going to have to expend every erg of energy in his Scout to burn the other ship up to the point where his attack would look authentic, and to eliminate all signs of previous action.

* * * * *

The awarding of the Galactic Medal of Honor, as always, was done in the simplest of ceremonies.

Only the President and Captain Donal Mathers himself were present in the former's office in the Presidential Palace.

However, as they both knew, every screen in the Solar System was tuned into the ceremony.

Don Mathers saluted and stood to attention.

The President read the citation. It was very short, as Medal of Honor citations were always.

... for conspicuous gallantry far and beyond the call of duty, in which you single-handedly, and against unbelievable odds, attacked and destroyed an enemy cruiser while flying a Scout armed only with a short-beam flakflak gun ...

He pinned a small bit of ribbon and metal to Don Mathers' tunic. It was an inconspicuous, inordinately ordinary medal, the Galactic Medal of Honor.

Don said hoarsely, "Thank you, sir."

The President shook hands with him and said, "I am President of the United Solar System, Captain Mathers, supposedly the highest rank to which a man can attain." He added simply, "I wish I were you."

* * * * *

Afterwards, alone in New Washington and wanting to remain alone, Don Mathers strolled the streets for a time, bothered only occasionally when someone recognized his face and people would stop and applaud.

He grinned inwardly.

He had a suspicion already that after a time he'd get used to it and weary to death of it, but right now it was still new and fun. Who was the flyer, way back in history, the one who first flew the Atlantic in a propeller-driven aircraft? His popularity must have been something like this.

He went into O'Donnell's at lunch time and as he entered the orchestra broke off the popular tune they were playing and struck up the Interplanetary Anthem. The manager himself escorted him to his table and made suggestions as to the specialties and the wine.

When he first sat down the other occupants of the restaurant, men and women, had stood and faced him and applauded. Don flushed. There could be too much of a good thing.

After the meal, a fantastic production, Don finished his cigar and asked the head waiter for his bill, reaching for his wallet.

The other smiled. "Captain, I am afraid your money is of no value in O'Donnell's, not for just this luncheon but whenever you honor us." The head waiter paused and added, "in fact, Captain, I doubt if there is a restaurant in the Solar System where your money holds value. Or that there will ever be."

Don Mathers was taken aback. He was only beginning to realize the ramifications of his holding his Galactic Medal of Honor.

* * * * *

At Space Command Headquarters, Third Division, Don came to attention before the Commodore's desk and tossed the other a salute.

The Commodore returned it snappily and leaned back in his chair. "Take a seat, Captain. Nice to see you again." He added pleasantly, "Where in the world have you been?"

Don Mathers slumped into a chair, said wearily, "On a bust. The bust to end all busts."

The Commodore chuckled. "Don't blame you," he said.

"It was quite a bust," Don said.

"Well," the Commodore chuckled again, "I don't suppose we can throw you in the guardhouse for being A.W.O.L. Not in view of your recent decoration."

There was nothing to say to that.

"By the way," the Commodore said, "I haven't had the opportunity to congratulate you on your Kraden. That was quite a feat, Captain."

"Thank you, sir," Don added, modestly, "rather foolish of me, I suppose."

"Very much so. On such foolishness are heroic deeds based, Captain." The Commodore looked at him
questioningly. "You must have had incredible luck. The only way we've been able to figure it was that his detectors were on the blink. That may be what happened."

"Yes, sir," Don nodded quickly. "That's the way I figure it. And my first blast must have disrupted his fire control or something."

The Commodore said, "He didn't get in any return fire at all?"

"A few blasts. But by that time I was in too close and moving too fast. Fact of the matter is, sir, I don't think they ever recovered from my first beaming of them."

"No, I suppose not," the Commodore said musingly. "It's a shame you had to burn them so badly. We've never recovered a Kraden ship in good enough shape to give our techs something to work on. It might make a basic difference in the war, particularly if there was something aboard that'd give us some indication of where they were coming from. We've been fighting this war in our backyard for a full century. It would help if we could get into their backyard for a change. It's problematical how long we'll be able to hold them off, at this rate."

Don Mathers said uncomfortably, "Well, it's not as bad as all that, sir. We've held them this far."

His superior grunted. "We've held them this far because we've been able to keep out enough patrol ships to give us ample warning when one of their task forces come in. Do you know how much fuel that consumes, Captain?"

"Well, I know it's a lot."

"So much so that Earth's industry is switching back to petroleum and coal. Every ounce of radioactives is needed by the Fleet. Even so, it's just a matter of time."

Don Mathers pursed his lips. "I didn't know it was that bad."

The Commodore smiled sourly at him. "I'm afraid I'm being a wet blanket thrown over your big bust of a celebration, Captain. Tell me, how does it feel to hold the system's highest award?"

* * * * *

Don shook his head, marveling. "Fantastic, sir. Of course, like any member of the services I've always known of the Medal of Honor, but ... well, nobody ever expects to get it." He added wryly, "Certainly not while he's still alive and in health. Why, sir, do you realize that I haven't been able to spend one unit of money since?" There was an element of awe in his voice. "Sir, do you realize that not even a beggar will take currency from me?"

The Commodore nodded in appreciation. "You must understand the position you occupy, Captain. Your feat was inspiring enough, but that's not all of it. In a way you combine a popular hero with an Unknown Soldier element. Awarding you the Galactic Medal of Honor makes a symbol of you. A symbol representing all the millions of unsung heroes and heroines who have died fighting for the human species. It's not a light burden to carry on your shoulders, Captain Mathers. I would imagine it a very humbling honor."

"Well, yes, sir," Don said.

The Commodore switched his tone of voice. "That brings us to the present, and what your next assignment is to be. Obviously, it wouldn't do for you to continue in a Scout. Big brass seems to be in favor of using you for morale and ..."

Don Mathers cleared his throat and interrupted. "Sir, I've decided to drop out of the Space Service."

"Drop out!" The other stared at Mathers, unbelievingly. "We're at war, Captain!"

Don nodded seriously. "Yes, sir. And what you just said is true. I couldn't be used any longer in a Scout. I'd wind up selling bonds and giving talks to old ladies' clubs."

"Well, hardly that, Captain."

"No, sir, I think I'd really be of more use out of the services. I'm tendering my resignation and making arrangements to help in the developing of Callisto and the other Jupiter satellites."

The Commodore said nothing. His lips seemed whiter than before.

Don Mathers said doggedly, "Perhaps my prestige will help bring volunteers to work the new mines out there. If they see me, well, sacrificing, putting up with the hardships ..."

The Commodore said evenly, "Mr. Mathers, I doubt if you will ever have to put up with hardships again, however, good luck. You deserve it."

* * * * *

Outside headquarters, Don Mathers summoned a cab and dialed his hotel. On the way over, he congratulated himself. It had gone easier than he had expected, really. Although, come to think of it, there wasn't a damn thing that the brass could do.

He had to laugh to himself. Imagine if he'd walked in on the Commodore a month ago and announced that he was going to drop out of the Space Service. He would have been dropped all right, all right. Right into the lap of a squadron of psycho experts.

At the hotel he shucked his uniform, an action which gave him considerable gratification, and dressed in one of the score of civilian costumes that filled his closets to overflowing. He took pleasure in estimating what this clothing
would have cost in terms of months of Space Service pay for a Sub-lieutenant or even a Captain. Years, my boy, years.

He looked at himself in the dressing-room mirror with satisfaction, then turned to the autobar and dialed himself a stone-age-old Metaxa. He'd lost his taste for the plebian tequila in the last few days.

He held the old Greek brandy to the light and wondered pleasurably what the stuff cost, per pony glass. Happily, he'd never have to find out.

He tossed the drink down and whistling, took his private elevator to the garages in the second level of the hotel's basement floors. He selected a limousine and dialed the Interplanetary Lines building.

He left the car at the curb before the main entrance, ignoring all traffic regulations and entered the building, still whistling softly and happily to himself. He grinned when a small crowd gathered outside and smiled and clapped their hands. He grinned and waved to them.

A receptionist hurried to him and he told her he wanted to see either Mr. Demming or Mr. Rostoff, and then when she offered to escort him personally he noticed her pixie-like cuteness and said, "What're you doing tonight, Miss?"

Her face went pale. "Oh, anything, sir," she said weakly.

He grinned at her. "Maybe I'll take you up on that if I'm not too busy."

He had never seen anyone so taken aback. She said, all flustered, "I'm Toni. Toni Fitzgerald. You can just call this building and ask for me. Any time."

"Maybe I'll do that," he smiled. "But now, let's see Old Man Demming."

That took her back too. Aside from being asked for a date—if asked could be the term—by the system's greatest celebrity, she was hearing for the first time the interplanetary tycoon being called Old Man Demming.

She said, "Oh, right this way, Captain Mathers."

Don said, "Mr. Mathers now, I'm afraid. I have new duties."

She looked up into his face. "You'll always be Captain Mathers to me, sir." She added, softly and irrelevantly, "My two brothers were lost on the Minerva in that action last year off Pluto. She took a deep breath, which only stressed her figure. "I've applied six times for Space Service, but they won't take me."

They were in an elevator now. Don said, "That's too bad, Toni. However, the Space Service isn't as romantic as you might think."

"Yes, sir," Toni Fitzgerald said, her soul in her eyes. "You ought to know, sir."

Don was somehow irritated. He said nothing further until they reached the upper stories of the gigantic office building. He thanked her after she'd turned him over to another receptionist.

Don Mathers' spirits had been restored by the time he was brought to the door of Max Rostoff's office. His new guide evidently hadn't even bothered to check on the man's availability, before ushering Mathers into the other's presence.

Max Rostoff looked up from his desk, wolfishly aggressive-looking as ever. "Why, Captain," he said. "How fine to see you again. Come right in. Martha, that will be all."

Martha gave the interplanetary hero one more long look and then turned and left.

As soon as the door closed behind her, Max Rostoff turned and snarled, "Where have you been, you rummy?"

He couldn't have shocked Don Mathers more if he'd suddenly sprouted a unicorn's horn.

"We've been looking for you for a week," Rostoff snapped. "Out of one bar, into another, our men couldn't catch up with you. Dammit, don't you realize we've got to get going? We've got a dozen documents for you to sign. We've got to get this thing underway, before somebody else does."

Don blurted, "You can't talk to me that way."

It was the other's turn to stare. Max Rostoff said, low and dangerously, "No? Why can't I?"

Don glared at him.

Max Rostoff said, low and dangerously, "Let's get this straight, Mathers. To everybody else, but Demming and me, you might be the biggest hero in the Solar System. But you know what you are to us?"

Don felt his indignation seeping from him.

"To us," Max Rostoff said flatly, "you're just another demi-buttocked incompetent on the make." He added definitely, "And make no mistake, Mathers, you'll continue to have a good thing out of this only so long as we can use you."

A voice from behind them said, "Let me add to that, period, end of paragraph."

It was Lawrence Demming, who'd just entered from an inner office.

He said, even his voice seemed fat, "And now that's settled, I'm going to call in some lawyers. While they're
around, we conduct ourselves as though we're three equal partners. On paper, we will be."

"Wait a minute, now," Don blurted. "What do you think you're pulling? The agreement was we split this whole thing three ways."

Demming's jowls wobbled as he nodded. "That's right. And your share of the loot is your Galactic Medal of Honor. That and the dubious privilege of having the whole thing in your name. You'll keep your medal, and we'll keep our share." He growled heavily, "You don't think you're getting the short end of the stick, do you?"

Max Rostoff said, "Let's knock this off and get the law boys in. We've got enough paper work to keep us busy the rest of the week." He sat down again at his desk and looked up at Don. "Then we'll all be taking off for Callisto, to get things under way. With any luck, in six months we'll have every ounce of pitchblende left in the system sewed up."

* * * * *

There was a crowd awaiting his ship at the Callisto Spaceport. A crowd modest by Earth standards but representing a large percentage of the small population of Jupiter's moon.

On the way out, a staff of the system's best speech writers, and two top professional actors had been working with him.

Don Mathers gave a short preliminary talk at the spaceport, and then the important one, the one that was broadcast throughout the system, that night from his suite at the hotel. He'd been well rehearsed, and they'd kept him from the bottle except for two or three quick ones immediately before going on.

The project at hand is to extract the newly discovered deposits of pitchblende on these satellites of Jupiter.

He paused impressively before continuing.

It's a job that cannot be done in slipshod, haphazard manner. The system's need for radioactives cannot be overstressed.

In short, fellow humans, we must allow nothing to stand in the way of all out, unified effort to do this job quickly and efficiently. My associates and I have formed a corporation to manage this crash program. We invite all to participate by purchasing stock. I will not speak of profits, fellow humans, because in this emergency we all scorn them. However, as I say, you are invited to participate.

Some of the preliminary mining concessions are at present in the hands of individuals or small corporations. It will be necessary that these turn over their holdings to our single all-embracing organization for the sake of efficiency. Our experts will evaluate such holdings and recompense the owners.

Don Mathers paused again for emphasis.

This is no time for quibbling. All must come in. If there are those who put private gain before the needs of the system, then pressures must be found to be exerted against them.

We will need thousands and tens of thousands of trained workers to operate our mines, our mills, our refineries. In the past, skilled labor here on the satellites was used to double or even triple the wage rates on Earth and the settled planets and satellites. I need only repeat, this is no time for personal gain and quibbling. The corporation announces proudly that it will pay only prevailing Earth rates. We will not insult our employees by "bribing" them to patriotism through higher wages.

There was more, along the same lines.

It was all taken very well. Indeed, with enthusiasm.

* * * * *

On the third day, at an office conference, Don waited for an opening to say, "Look, somewhere here on Callisto is a young woman named Dian Fuller. After we get me established in an office, I'd like her to be my secretary."

Demming looked up from some reports he was scanning. He grunted to Max Rostoff, "Tell him," and went back to the papers.

Max Rostoff, settled back into his chair. He said to the two bodyguards, stationed at the door, "Scotty, Rogers, go and make the arrangements to bring that damned prospector into line."

When they were gone, Rostoff turned back to Don Mathers. "You don't need an office, Mathers. All you need is to go back to your bottles. Just don't belt it so hard that you can't sign papers every time we need a signature."

Don flushed angrily, "Look, don't push me, you two. You need me. Plenty. In fact, from what I can see, this corporation needs me more than it does you." He looked scornfully at Demming. "Originally, the idea was that you put up the money. What money? We have fifty-one percent of the stock in my name, but all the credit units needed are coming from sales of stock." He turned to Rostoff. "You were supposed to put up the brains. What brains? We've hired the best mining engineers, the best technicians, to do their end, the best corporation executives to handle that end. You're not needed."

Demming grunted amusement at the short speech, but didn't bother to look up from his perusal.

Max Rostoff's face had grown wolfishly thin in his anger. "Look, bottle-baby," he sneered, "you're the only one
that's vulnerable in this set-up. There's not a single thing that Demming and I can be held to account for. You have no beefs coming, for that matter. You're getting everything you ever wanted. You've got the best suite in the best hotel on Callisto. You eat the best food the Solar System provides. And, most important of all to a rummy, you drink the best booze and as much of it as you want. What's more, unless either Demming or I go to the bother, you'll never be exposed. You'll live your life out being the biggest hero in the system."

It was Don Mathers' turn to sneer. "What do you mean, I'm the only one vulnerable? There's no evidence against me, Rostoff, and you know it. Who'd listen to you if you sounded off? I burned that Kraden cruiser until there wasn't a sign to be found that would indicate it wasn't in operational condition when I first spotted it."

Demming grunted his amusement again.

Max Rostoff laughed sourly. "Don't be an ass, Mathers. We took a series of photos of that derelict when we stumbled on it. Not only can we prove you didn't knock it out, we can prove that it was in good shape before you worked it over. I imagine the Fleet technician would have loved to have seen the inner workings of that Kraden cruiser--before you loused it up."

Demming chuckled flatly. "I wonder what kind of a court martial they give a hero who turns out to be a saboteur."

* * * * *

He ran into her, finally, after he'd been on Callisto for nearly eight months. Actually, he didn't remember the circumstances of their meeting. He was in an alcoholic daze and the fog rolled out, and there she was across the table from him.

Don shook his head, and looked about the room. They were in some sort of night spot. He didn't recognize it. * * * * *

He licked his lips, scowled at the taste of stale vomit.

He slurred, "Hello, Di."

Dian Fuller said, "Hi, Don."

He said, "I must've blanked out. Guess I've been hitting it too hard."

She laughed at him. "You mean you don't remember all the things you've been telling me the past two hours?"

She was obviously quite sober. Dian never had been much for the sauce.

Don looked at her narrowly. "What've I been telling you for the past two hours?"

"Mostly about how it was when you were a little boy. About fishing, and your first .22 rifle. And the time you shot the squirrel, and then felt so sorry."

"Oh," Don said. He ran his right hand over his mouth.

There was a champagne bucket beside him, but the bottle in it was empty. He looked about the room for a waiter.

Dian said gently, "Do you really think you need any more, Don?"

He looked across the table at her. She was as beautiful as ever. No, that wasn't right. She was pretty, but not beautiful. She was just a damn pretty girl, not one of these glamour items.

Don said, "Look, I can't remember. Did we get married?"

Her laugh tinkled. "Married! I only ran into you two or three hours ago."

She hesitated before saying further, "I had assumed that you were deliberately avoiding me. Callisto isn't that big."

Don Mathers said slowly, "Well, if we're not married, let me decide when I want another bottle of the grape, eh?"

Dian flushed. "Sorry, Don."

* * * * *

The headwaiter approached bearing another magnum of vintage wine. He beamed at Don Mathers. "Having a good time, sir?"

"Okay," Don said shortly. When the other was gone he downed a full glass, felt the fumes almost immediately.

He said to Dian, "I haven't been avoiding you, Di. We just haven't met. The way I remember, the last time we saw each other, back on Earth, you gave me quite a slap in the face. The way I remember, you didn't think I was hero enough for you."

Don Mathers said slowly, "Well, if we're not married, let me decide when I want another bottle of the grape, eh?"

Dian flushed. "Sorry, Don."

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He poured another glass of the champagne.

Di's face was still flushed. She said, her voice low, "I misunderstood you, Don. Even after your brilliant defeat of that Kraden cruiser, I still, I admit, think I basically misunderstood you. I told myself that it could have been done by any pilot of a Scout, given that one in a million break. It just happened to be you, who made that suicide dive attack that succeeded. A thousand other pilots might also have taken the million to one suicide chance rather than let the Kraden escape."

"Yeah," Don said. Even in his alcohol, he was surprised at her words. He said gruffly, "Sure anybody might've done it. Pure luck. But why'd you change your mind about me, then? How come the switch of heart?"
"Because of what you've done since, darling."
He closed one eye, the better to focus.
"Since?"
He recognized the expression in her eyes. A touch of star gleam. That little girl back on Earth, the receptionist at the Interplanetary Lines building, she'd had it. In fact, in the past few months Don had seen it in many feminine faces. And all for him.
Dian said, "Instead of cashing in on your prestige, you've been devoting yourself to something even more necessary to the fight than bringing down individual Kraden cruisers."
Don looked at her. He could feel a nervous tic beginning in his left eyebrow. Finally, he reached for the champagne again and filled his glass. He said, "You really go for this hero stuff, don't you?"
She said nothing, but the star shine was still in her eyes.
He made his voice deliberately sour. "Look, suppose I asked you to come back to my apartment with me tonight?"
"Yes," she said softly.
"And told you to bring your overnight bag along," he added brutally.
Dian looked into his face. "Why are you twisting yourself, your inner-self, so hard, Don? Of course I'd come--if that's what you wanted."
"And then," he said flatly, "suppose I kicked you out in the morning?"
Dian winced, but she kept her eyes even with his, her own moist now. "You forget," she whispered. "You have been awarded the Galactic Medal of Honor, the bearer of which can do no wrong."
"Oh, God," Don muttered. He filled his glass, still again, motioned to a nearby waiter.
"Yes, sir," the waiter said.
Don said, "Look, in about five minutes I'm going to pass out. See that I get back to my hotel, will you? And that this young lady gets to her home. And, waiter, just send my bill to the hotel too."
The other bowed. "The owner's instructions, sir, are that Captain Mathers must never see a bill in this establishment."
Dian said, "Don!"
He didn't look at her. He raised his glass to his mouth and shortly afterward the fog rolled in again.
* * * *
When it rolled out, the unfamiliar taste of black coffee was in his mouth. He shook his head for clarity.
He seemed to be in some working class restaurant. Next to him, in a booth, was a fresh-faced Sub-lieutenant of the--Don squinted at the collar tabs--yes, of the Space Service. A Scout pilot.
Don stuttered, "What's ... goin' ... on?"
The pilot said apologetically, "Sub-lieutenant Pierpont, sir. You seemed so far under the weather, I took over."
"Oh, you did, eh?"
"Well, yes, sir. You were, well, reclining in the gutter, sir. In spite of your, well, appearance, your condition, I recognized you, sir."
"Oh." His stomach was an objecting turmoil.
The Lieutenant said, "Want to try some more of this coffee now, sir? Or maybe some soup or a sandwich?"
Don groaned. "No. No, thanks. Don't think I could hold it down."
The pilot grinned. "You must've thrown a classic, sir."
"I guess so. What time is it? No, that doesn't make any difference. What's the date?"
Pierpont told him.
It was hard to believe. The last he could remember he'd been with Di. With Di in some nightclub. He wondered how long ago that had been.
He fumbled in his clothes for a smoke and couldn't find one. He didn't want it anyway.
He growled at the Lieutenant, "Well, how go the One Man Scouts?"
Pierpont grinned back at him. "Glad to be out of them, sir?"
"Usually."
Pierpont looked at him strangely. "I don't blame you, I suppose. But it isn't as bad these days as it used to be while you were still in the Space Service, sir."
Don grunted. "How come? Two weeks to a month, all by yourself, watching the symptoms of space cafard progress. Then three weeks of leave, to get drunk in, and then another stretch in space."
The pilot snorted depreciation. "That's the way it used to be." He fingered the spoon of his coffee cup. "That's the way it still should be, of course. But it isn't. They're spreading the duty around now and I spend less than one week out of four on patrol."
Don hadn't been listening too closely, but now he looked up. "What'd'ya mean?"

Pierpont said, "I mean, sir, I suppose this isn't bridging security, seeing who you are, but fuel stocks are so low that we can't maintain full patrols any more."

There was a cold emptiness in Don Mathers' stomach.

He said, "Look, I'm still woozy. Say that again, Lieutenant."

The Lieutenant told him again.

Don Mathers rubbed the back of his hand over his mouth and tried to think.

He said finally, "Look, Lieutenant. First let's get another cup of coffee into me, and maybe that sandwich you were talking about. Then would you help me to get back to my hotel?"

* * * * *

By the fourth day, his hands weren't trembling any longer. He ate a good breakfast, dressed carefully, then took a hotel limousine down to the offices of the Mathers, Demming and Rostoff Corporation.

At the entrance to the inner sanctum the heavyset Scotty looked up at his approach. He said, "The boss has been looking for you, Mr. Mathers, but right now you ain't got no appointment, have you? Him and Mr. Rostoff is having a big conference. He says to keep everybody out."

"That doesn't apply to me, Scotty," Don snapped. "Get out of my way."

Scotty stood up, reluctantly, but barred the way. "He said it applied to everybody, Mr. Mathers."

Don put his full weight into a blow that started at his waist, dug deep into the other's middle. Scotty doubled forward, his eyes bugging. Don Mathers gripped his hands together into a double fist and brought them upward in a vicious uppercut.

* * * * *

Scotty fell forward and to the floor.

Don stood above him momentarily, watchful for movement which didn't develop. The hefty bodyguard must have been doing some easy living himself. He wasn't as tough as he looked.

Don knelt and fished from under the other's left arm a vicious-looking short-barrelled scrambler. He tucked it under his own jacket into his belt, then turned, opened the door and entered the supposedly barred office.

Demming and Rostoff looked up from their work across a double desk.

Both scowled. Rostoff opened his mouth to say something and Don Mathers rapped, "Shut up."

Rostoff blinked at him. Demming leaned back in his swivel chair. "You're sober for a change," he wheezed, almost accusingly.

Don Mathers pulled up a stenographer's chair and straddled it, leaning his arms on the back. He said coldly, "Comes a point when even the lowest worm turns. I've been checking on a few things."

Demming grunted amusement.

Don said, "Space patrols have been cut far below the danger point."

Rostoff snorted. "Is that supposed to interest us? That's the problem of the military--and the government."

"Oh, it interests us, all right," Don growled. "Currently, Mathers, Demming and Rostoff control probably three-quarters of the system's radioactives."

Demming said in greasy satisfaction, "More like four-fifths."

"Why?" Don said bluntly. "Why are we doing what we're doing?"

They both scowled, but another element was present in their expressions too. They thought the question unintelligent.

Demming closed his eyes in his porcine manner and grunted, "Tell him."

Rostoff said, "Look, Mathers, don't be stupid. Remember when we told you, during that first interview, that we wanted your name in the corporation, among other reasons, because we could use a man who was above law? That a maze of ridiculously binding ordinances have been laid on business down through the centuries?"

"I remember," Don said bitterly.

"Well, it goes both ways. Government today is also bound, very strongly, and even in great emergency, not to interfere in business. These complicated laws balance each other, you might say. Our whole legal system is based upon them. Right now, we've got government right where we want it. This is free enterprise, Mathers, at its pinnacle. Did you ever hear of Jim Fisk and his attempt to corner gold in 1869, the so-called Black Friday affair? Well, Jim Fisk was a peanut peddler compared to us."

"What's this got to do with the Fleet having insufficient fuel to ..." Don Mathers stopped as comprehension hit him. "You're holding our radioactives off the market, pressuring the government for a price rise which it can't afford."

Demming opened his eyes and said fatly, "For triple the price, Mathers. Before we're through, we'll corner half the wealth of the system."
Don said, "But ... but the species is ... at ... war."

Rostoff sneered, "You seem to be getting noble rather late in the game, Mathers. Business is business."

Don Mathers was shaking his head. "We immediately begin selling our radioactives at cost of production. I might remind you gentlemen that although we're supposedly a three-way partnership, actually, everything's in my name. You thought you had me under your thumb so securely that it was safe--and you probably didn't trust each other. Well, I'm blowing the whistle."

* * * * *

Surprisingly fast for such a fat man, Lawrence Demming's hand flitted into a desk drawer to emerge with a twin of the scrambler tucked in Don's belt.

Don Mathers grinned at him, even as he pushed his jacket back to reveal the butt of his own weapon. He made no attempt to draw it, however.

He said softly, "Shoot me, Demming, and you've killed the most popular man in the Solar System. You'd never escape the gas chamber, no matter how much money you have. On the other hand, if I shoot you ..."

He put a hand into his pocket and it emerged with a small, inordinately ordinary bit of ribbon and metal. He displayed it on his palm.

The fat man's face whitened at the ramifications and his hand relaxed to let the gun drop to the desk. "Listen, Don," he broke out. "We've been unrealistic with you. We'll reverse ourselves and split, honestly--split three ways."

Don Mathers laughed at him. "Trying to bribe me with money, Demming? Why don't you realize, that I'm the only man in existence who has no need for money, who can't spend money? That my fellow men--whom I've done such a good job of betraying--have honored me to a point where money is meaningless?"

Rostoff snatched up the fallen gun, snarling, "I'm calling your bluff, you gutless rummy."

Don Mathers said, "Okay, Rostoff. There's just two other things I want to say first. One--I don't care if I die or not. Two--you're only twenty feet or so away, but you know what? I think you're probably a lousy shot. I don't think you've had much practice. I think I can get my scrambler out and cut you down before you can finish me." He grinned thinly, "Wanta try?"

Max Rostoff snarled a curse and his finger whitened on the trigger.

Don Mathers fell sideward, his hand streaking for his weapon. Without thought there came back to him the long hours of training in hand weapons, in judo, in hand to hand combat. He went into action with cool confidence.

* * * * *

At the spaceport he took a cab to the Presidential Palace. It was an auto-cab, of course, and at the Palace gates he found he had no money on him. He snorted wearily. It was the first time in almost a year that he'd had to pay for anything.

Four sentries were standing at attention. He said, "Do one of you boys have some coins to feed into this slot? I'm fresh out."

A sergeant grinned, approached, and did the necessary.

Don Mathers said wearily, "I don't know how you go about this. I don't have an appointment, but I want to see the President."

"We can turn you over to one of the assistant secretaries, Captain Mathers," the sergeant said. "We can't go any further than that. While we're waiting, what's the chances of getting your autograph, sir? I gotta kid ..."

It wasn't nearly as complicated as he'd thought it was going to be. In half an hour he was seated in the office where he'd received his decoration only--how long ago was it, really less than a year?

He told the story briefly, making no effort to spare himself. At the end he stood up long enough to put a paper in front of the other, then sat down again.

"I'm turning the whole corporation over to the government...."

* * * * *

The President said, "Wait a minute. My administration does not advocate State ownership of industry."

"I know. When the State controls industry you only put the whole mess off one step, the question then becomes, who controls the State? However, I'm not arguing political economy with you, sir. You didn't let me finish. I was going to say, I'm turning it over to the government to untangle, even while making use of the inventories of radioactives. There's going to be a lot of untangling to do. Reimbursing the prospectors and small operators who were blackjacked out of their holdings by our super-corporation. Reimbursing of the miners and other laborers who were talked into accepting low pay in the name of patriotism." Don Mathers cut it short. "Oh, it's quite a mess."

"Yes," the President said. "And you say Max Rostoff is dead?"

"That's right. And Demming off his rocker. I think he always was a little unbalanced and the prospect of losing all that money, the greatest fortune ever conceived of, tipped the scales."
The President said, “And what about you, Donal Mathers?”

Don took a deep breath. "I wish I was back in the Space Services, frankly. Back where I was when all this started. However, I suppose that after my court martial, there won't be ..."

The President interrupted gently. "You seem to forget, Captain Mathers. You carry the Galactic Medal of Honor, the bearer of which can do no wrong."

Don Mathers gaped at him.

The President smiled at him, albeit a bit sourly. "It would hardly do for human morale to find out our supreme symbol of heroism was a phoney, Captain. There will be no trial, and you will retain your decoration."

"But I don't want it!"

"I'm afraid that is the cross you'll have to bear the rest of your life, Captain Mathers. I don't suppose it will be an easy one."

His eyes went to a far corner of the room, but unseeingly. He said after a long moment, "However, I am not so very sure about your not deserving your award, Captain."

THE END
scrapping you want with Hovercraft. Wait until then.”

He’d expected his tone of authority to be enough, even though he was in mufti. He wasn’t particularly interested in the situation, beyond giving the little man a hand. A veteran would have recognized him as an old-timer and probable officer, and heeded, automatically.

These evidently weren’t veterans.

"Says who?" one of the Lowers growled back at him. "You one of Baron Haer's kids, or something?"

Joe Mauser came to a halt and faced the other. He was irritated, largely with himself. He didn’t want to be bothered. Nevertheless, there was no alternative now.

The line of men, all Lowers so far as Joe could see, had fallen silent in an expectant hush. They were bored with their long wait. Now something would break the monotony.

By tomorrow, Joe Mauser would be in command of some of these men. In as little as a week he would go into a full-fledged fracas with them. He couldn’t afford to lose face. Not even at this point when all, including himself, were still civilian garbed. When matters pickled, in a fracas, you wanted men with complete confidence in you.

* * * * *

The man who had grumbled the surly response was a near physical twin of Joe Mauser which put him in his early thirties, gave him five foot eleven of altitude and about one hundred and eighty pounds. His clothes casted him Low-Lower—nothing to lose. As with many who have nothing to lose, he was willing to risk all for principle. His face now registered that ideal. Joe Mauser had no authority over him, nor his friends.

Joe’s eyes flicked to the other two who had been pestering the little fellow. They weren’t quite so aggressive and as yet had come to no conclusion about their stand. Probably the three had been unacquainted before their bullying alliance to deprive the smaller man of his place. However, a moment of hesitation and Joe would have a trio on his hands.

He went through no further verbal preliminaries. Joe Mauser stepped closer. His right hand lanced forward, not doubled in a fist but fingers close together and pointed, spear-like. He sank it into the other’s abdomen, immediately below the rib cage—the solar plexus.

He had misestimated the other two. Even as his opponent crumpled, they were upon him, coming in from each side. And at least one of them, he could see now, had been in hand-to-hand combat before. In short, another pro, like Joe himself.

He took one blow, rolling with it, and his feet automatically went into the shuffle of the trained fighter. He retreated slightly to erect defenses, plan attack. They pressed him strongly, sensing victory in his retreat.

The one mattered little to him. Joe Mauser could have polished off the oaf in a matter of seconds, had he been allotted seconds to devote. But the second, the experienced one, was the problem. He and Joe were well matched and with the oaf as an ally really he had all the best of it.

Support came from a forgotten source, the little chap who had been the reason for the whole hassle. He waded in now as big as the next man so far as spirit was concerned, but a sorry fate gave him to attack the wrong man, the veteran rather than the tyro. He took a crashing blow to the side of his head which sent him sailing back into the recruiting line, now composed of excited, shouting verbal participants of the fray.

However, the extinction of Joe Mauser’s small ally had taken a moment or two and time was what Joe needed most. For a double second he had the oaf alone on his hands and that was sufficient. He caught a flailing arm, turned his back and automatically went into the movements which result in that spectacular hold of the wrestler, the Flying Mare. Just in time he recalled that his opponent was a future comrade-in-arms and twisted the arm so that it bent at the elbow, rather than breaking. He hurled the other over his shoulder and as far as possible, to take the scrap out of him, and twirled quickly to meet the further attack of his sole remaining foe.

That phase of the combat failed to materialize.

A voice of command bit out, "Hold it, you lads!"

The original situation which had precipitated the fight was being duplicated. But while the three Lowers had failed to respond to Joe Mauser's tone of authority, there was no similar failure now.

The owner of the voice, beautifully done up in the uniform of Vacuum Tube Transport, complete to kilts and the swagger stick of the officer of Rank Colonel or above, stood glaring at them. Age, Joe estimated, even as he came to attention, somewhere in the late twenties—an Upper in caste. Born to command. His face holding that arrogant, contemptuous expression once common to the patricians of Rome, the Prussian Junkers, the British ruling class of the Nineteenth Century. Joe knew the expression well. How well he knew it. On more than one occasion, he had dreamt of it.

Joe said, "Yes, sir."

"What in Zen goes on here? Are you lads overtranked?"

"No, sir," Joe's veteran opponent grumbled, his eyes on the ground, a schoolboy before the principal.
Joe said, evenly, "A private disagreement, sir."

"Disagreement!" the Upper snorted. His eyes went to the three fallen combatants, who were in various stages of reviving. "I'd hate to see you lads in a real scrap."

That brought a response from the non-combatants in the recruiting line. The bon mot wasn't that good but caste has its privileges and the laughter was just short of uproarious.

Which seemed to placate the kilted officer. He tapped his swagger stick against the side of his leg while he ran his eyes up and down Joe Mauser and the others, as though memorizing them for future reference.

"All right," he said. "Get back into the line, and you trouble makers quiet down. We're processing as quickly as we can." And at that point he added insult to injury with an almost word for word repetition of what Joe had said a few moments earlier. "You'll get all the fighting you want from Hovercraft, if you can wait until then."

The four original participants of the rumpus resumed their places in various stages of sheepishness. The little fellow, nursing an obviously aching jaw, made a point of taking up his original position even while darting a look of thanks to Joe Mauser who still stood where he had when the fight was interrupted.

The Upper looked at Joe. "Well, lad, are you interested in signing up with Vacuum Tube Transport or not?"

"Yes, sir," Joe said evenly. Then, "Joseph Mauser, sir. Category Military, Rank Captain."

"Indeed." The officer looked him up and down all over again, his nostrils high. "A Middle, I assume. And brawling with recruits." He held a long silence. "Very well, come with me." He turned and marched off.

Joe inwardly shrugged. This was a fine start for his pitch— a fine start. He had half a mind to give it all up, here and now, and head on up to Catskill to enlist with Continental Hovercraft. His big scheme would wait for another day. Nevertheless, he fell in behind the aristocrat and followed him to the offices which had been his original destination.

* * * * *

Two Rank Privates with 45-70 Springfields and wearing the Haer kilts in such wise as to indicate permanent status in Vacuum Tube Transport came to the salute as they approached. The Upper preceding Joe Mauser flicked his swagger stick in an easy nonchalance. Joe felt envious amusement. How long did it take to learn how to answer a salute with that degree of arrogant ease?

There were desks in here, and typers humming, as Vacuum Tube Transport office workers, mobilized for this special service, processed volunteers for the company forces. Harried noncoms and junior-grade officers buzzed everywhere, failing miserably to bring order to the chaos. To the right was a door with a medical cross newly painted on it. When it occasionally popped open to admit or emit a recruit, white-robed doctors, male nurses and half nude men could be glimpsed beyond.

Joe followed the other through the press and to an inner office at which door he didn't bother to knock. He pushed his way through, waved in greeting with his swagger stick to the single occupant who looked up from the paper- and tape-strewn desk at which he sat.

Joe Mauser had seen the face before on Telly though never so tired as this and never with the element of defeat to be read in the expression. Bullet-headed, barrel-figured Baron Malcolm Haer of Vacuum Tube Transport. Category Transportation, Mid-Upper, and strong candidate for Upper-Upper upon retirement. However, there would be few who expected retirement in the immediate future. Hardly. Malcolm Haer found too obvious a lusty enjoyment in the competition between Vacuum Tube Transport and its stronger rivals.

* * *

Joe came to attention, bore the sharp scrutiny of his chosen commander-to-be. The older man's eyes went to the kilted Upper officer who had brought Joe along. "What is it, Balt?"

The other gestured with his stick at Joe. "Claims to be Rank Captain. Looking for a commission with us, Dad. I wouldn't know why." The last sentence was added lazily.

The older Haer shot an irritated glance at his son. "Possibly for the same reason mercenaries usually enlist for a fracas, Balt." His eyes came back to Joe.

Joe Mauser, still at attention even though in mufti, opened his mouth to give his name, category and rank, but the older man waved a hand negatively. "Captain Mauser, isn't it? I caught the fracas between Carbonaceous Fuel and United Miners, down on the Panhandle Reservation. Seems to me I've spotted you once or twice before, too."

"Yes, sir," Joe said. This was some improvement in the way things were going.

The older Haer was scowling at him. "Confound it, what are you doing with no more rank than captain? On the face of it, you're an old hand, a highly experienced veteran."

An old pro, we call ourselves, Joe said to himself. Old pros, we call ourselves, among ourselves.

Aloud, he said, "I was born a Mid-Lower, sir."

There was understanding in the old man's face, but Balt Haer said loftily, "What's that got to do with it? Promotion is quick and based on merit in Category Military."
At a certain point, if you are good combat officer material, you speak your mind no matter the rank of the man you are addressing. On this occasion, Joe Mauser needed few words. He let his eyes go up and down Balt Haer's immaculate uniform, taking in the swagger stick of the Rank Colonel or above. Joe said evenly, "Yes, sir."

Balt Haer flushed quick temper. "What do you mean by--" But his father was chuckling. "You have spirit, captain. I need spirit now. You are quite correct. My son, though a capable officer, I assure you, has probably not participated in a fraction of the fracases you have to your credit. However, there is something to be said for the training available to we Uppers in the academies. For instance, captain, have you ever commanded a body of lads larger than, well, a company?"

Joe said flatly, "In the Douglas-Boeing versus Lockheed-Cessna fracas we took a high loss of officers when the Douglas-Boeing outfit rang in some fast-firing French mitrailleuse we didn't know they had. As my superiors took casualties I was field promoted to acting battalion commander, to acting regimental commander, to acting brigadier. For three days I held the rank of acting commander of brigade. We won."

Balt Haer snapped his fingers. "I remember that. Read quite a paper on it." He eyed Joe Mauser, almost respectfully. "Stonewall Cogswell got the credit for the victory and received his marshal's baton as a result."

"He was one of the few other officers that survived," Joe said dryly.
"But, Zen! You mean you got no promotion at all?"
"Joe said, "I was upped to Low-Middle from High-Lower, sir. At my age, at the time, quite a promotion."

Baron Haer was remembering, too. "That was the fracas that brought on the howl from the Sovs. They claimed those mitrailleuse were post-1900 and violated the Universal Disarmament Pact. Yes, I recall that. Douglas-Boeing was able to prove that the weapon was used by the French as far back as the Franco-Prussian War." He eyed Joe with new interest now. "Sit down, captain. You too, Balt. Do you realize that Captain Mauser is the only recruit of officer rank we've had today?"

"Yes," the younger Haer said dryly. "However, it's too late to call the fracas off now. Hovercraft wouldn't stand for it, and the Category Military Department would back them. Our only alternative is unconditional surrender, and you know what that means."

"It means our family would probably be forced from control of the firm," the older man growled. "But nobody has suggested surrender on any terms. Nobody, thus far." He glared at his officer son who took it with an easy shrug and swung a leg over the edge of his father's desk in the way of a seat.

Joe Mauser found a chair and lowered himself into it. Evidently, the foppish Balt Haer had no illusions about the spot his father had got the family corporation into. And the younger man was right, of course.

But the Baron wasn't blind to reality any more than he was a coward. He dismissed Balt Haer's defeatism from his mind and came back to Joe Mauser. "As I say, you're the only officer recruit today. Why?"

Joe said evenly, "I wouldn't know, sir. Perhaps freelance Category Military men are occupied elsewhere. There's always a shortage of trained officers."

Baron Haer was waggling a finger negatively. "That's not what I mean, captain. You are an old hand. This is your category and you must know it well. Then why are you signing up with Vacuum Tube Transport rather than Hovercraft?"

Joe Mauser looked at him for a moment without speaking. "Come, come, captain. I am an old hand too, in my category, and not a fool. I realize there is scarcely a soul in the West-world that expects anything but disaster for my colors. Pay rates have been widely posted. I can offer only five common shares of Vacuum Tube for a Rank Captain, win or lose. Hovercraft is doubling that, and can pick and choose among the best officers in the hemisphere."

Joe said softly, "I have all the shares I need."

Balt Haer had been looking back and forth between his father and the newcomer and becoming obviously more puzzled. He put in, "Well, what in Zen motivates you if it isn't the stock we offer?"

Joe glanced at the younger Haer to acknowledge the question but he spoke to the Baron. "Sir, like you said, you're no fool. However, you've been sucked in, this time. When you took on Hovercraft, you were thinking in terms of a regional dispute. You wanted to run one of your vacuum tube deals up to Fairbanks from Edmonton. You were expecting a minor fracas, involving possibly five thousand men. You never expected Hovercraft to parlay it up, through their connections in the Category Military Department, to a divisional magnitude fracas which you simply aren't large enough to afford. But Hovercraft was getting sick of your corporation. You've been nicking away at them too long. So they decided to do you in. They've hired Marshal Cogswell and the best combat officers in North America, and they're hiring the most competent veterans they can find. Every fracas buff who watches Telly, figures you've had it. They've been watching you come up the aggressive way, the hard way, for a long time, but now they're all going to be sitting on the edges of their sofas waiting for you to get it."
Baron Haer's heavy face had hardened as Joe Mauser went on relentlessly. He growled, "Is this what everyone thinks?"

"Yes. Everyone intelligent enough to have an opinion." Joe made a motion of his head to the outer offices where the recruiting was proceeding. "Those men out there are rejects from Catskill, where old Baron Zwerdling is recruiting. Either that or they're inexperienced Low-Lowers, too stupid to realize they're sticking their necks out. Not one man in ten is a veteran. And when things begin to pickle, you want veterans."

Baron Malcolm Haer sat back in his chair and stared coldly at Captain Joe Mauser. He said, "At first I was moderately surprised that an old time mercenary like yourself should choose my uniform, rather than Zwerdling's. Now I am increasingly mystified about motivation. So all over again I ask you, captain: Why are you requesting a commission in my forces which you seem convinced will meet disaster?"

Joe wet his lips carefully. "I think I know a way you can win."

II

His permanent military rank the Haers had no way to alter, but they were short enough of competent officers that they gave him an acting rating and pay scale of major and command of a squadron of cavalry. Joe Mauser wasn't interested in a cavalry command this fracas, but he said nothing. Immediately, he had to size up the situation; it wasn't time as yet to reveal the big scheme. And, meanwhile, they could use him to whip the Rank Privates into shape.

He had left the offices of Baron Haer to go through the red tape involved in being signed up on a temporary basis in the Vacuum Tube Transport forces, and reentered the confusion of the outer offices where the Lowers were being processed and given medicals. He reentered in time to run into a Telly team which was doing a live broadcast.

Joe Mauser remembered the news reporter who headed the team. He'd run into him two or three times in fracases. As a matter of fact, although Joe held the standard Military Category prejudices against Telly, he had a basic respect for this particular newsman. On the occasions he'd seen him before, the fellow was hot in the midst of the action even when things were in the dill. He took as many chances as did the average combatant, and you can't ask for more than that.

The other knew him, too, of course. It was part of his job to be able to spot the celebrities and near celebrities. He zeroed in on Joe now, making flicks of his hand to direct the cameras. Joe, of course, was fully aware of the value of Telly and was glad to co-operate.

"Captain! Captain Mauser, isn't it? Joe Mauser who held out for four days in the swamps of Louisiana with a single company while his ranking officers reformed behind him."

That was one way of putting it, but both Joe and the newscaster who had covered the debacle knew the reality of the situation. When the front had collapsed, his commanders--of Upper caste, of course--had hauled out, leaving him to fight a delaying action while they mended their fences with the enemy, coming to the best terms possible. Yes, that had been the United Oil versus Allied Petroleum fracas, and Joe had emerged with little either in glory or pelf.

The average fracas fan wasn't on an intellectual level to appreciate anything other than victory. The good guys win, the bad guys lose--that's obvious, isn't it? Not one out of ten Telly followers of the fracases was interested in a well-conducted retreat or holding action. They wanted blood, lots of it, and they identified with the winning side.

Joe Mauser wasn't particularly bitter about this aspect. It was part of his way of life. In fact, his pet peeve was the real buff. The type, man or woman, who could remember every fracas you'd ever been in, every time you'd copped one, and how long you'd been in the hospital. Fans who could remember, even better than you could, every time the situation had pickled on you and you'd had to fight your way out as best you could. They'd tell you about it, their eyes gleaming, sometimes a slightest trickle of spittle at the sides of their mouths. They usually wanted an autograph, or a souvenir such as a uniform button.

Now Joe said to the Telly reporter, "That's right, Captain Mauser. Acting major, in this fracas, ah--"

"Freddy. Freddy Soligen. You remember me, captain--"

"Of course I do, Freddy. We've been in the dill, side by side, more than once, and even when I was too scared to use my side arm, you'd be scanning away with your camera."

"Ha ha, listen to the captain, folks. I hope my boss is tuned in. But seriously, Captain Mauser, what do you think the chances of Vacuum Tube Transport are in this fracas?"

Joe looked into the camera lens, earnestly. "The best, of course, or I wouldn't have signed up with Baron Haer, Freddy. Justice triumphs, and anybody who is familiar with the issues in this fracas, knows that Baron Haer is on the side of true right."

Freddy said, holding any sarcasm he must have felt, "What would you say the issues were, captain?"

"The basic North American free enterprise right to compete. Hovercraft has held a near monopoly in transport to Fairbanks. Vacuum Tube Transport wishes to lower costs and bring the consumers of Fairbanks better service
through running a vacuum tube to that area. What could be more in the traditions of the West-world? Continental Hovercraft stands in the way and it is they who have demanded of the Category Military Department a trial by arms. On the face of it, justice is on the side of Baron Haer.

Freddy Soligen said into the camera, "Well, all you good people of the Telly world, that's an able summation the captain has made, but it certainly doesn't jibe with the words of Baron Zwerdling we heard this morning, does it? However, justice triumphs and we'll see what the field of combat will have to offer. Thank you, thank you very much, Captain Mauser. All of us, all of us tuned in today, hope that you personally will run into no dill in this fracas."

"Thanks, Freddy. Thanks all," Joe said into the camera, before turning away. He wasn't particularly keen about this part of the job, but you couldn't underrate the importance of pleasing the buffs. In the long run it was your career, your chances for promotion both in military rank and ultimately in caste. It was the way the fans took you up, boosted you, idolized you, worshipped you if you really made it. He, Joe Mauser, was only a minor celebrity, he appreciated every chance he had to be interviewed by such a popular reporter as Freddy Soligen.

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Even as he turned, he spotted the four men with whom he'd had his spat earlier. The little fellow was still to the fore. Evidently, the others had decided the one place extra that he represented wasn't worth the trouble he'd put in their way defending it.

On an impulse he stepped up to the small man who began a grin of recognition, a grin that transformed his feisty face. A revelation of an inner warmth beyond average in a world which had lost much of its human warmth.

[Illustration]

Joe said, "Like a job, soldier?"
"Name's Max. Max Mainz. Sure I want a job. That's why I'm in this everlasting line."
"First fracas for you, isn't it?"
Yeah, but I had basic training in school."
"What do you weigh, Max?"
"About one twenty."
"Did you check out on semaphore in school?"
"Well, sure. I'm Category Food, Sub-division Cooking, Branch Chef, but, like I say, I took basic military training, like most everybody else."
"I'm Captain Joe Mauser. How'd you like to be my batman?"
Max screwed up his already not overly handsome face. "Gee, I don't know. I kinda joined up to see some action. Get into the dill. You know what I mean."
Joe said dryly, "See here, Mainz, you'll probably find more pickled situations next to me than you'll want--and you'll come out alive."

The recruiting sergeant looked up from the desk. It was Max Mainz's turn to be processed. The sergeant said, "Lad, take a good opportunity when it drops in your lap. The captain is one of the best in the field. You'll learn more, get better chances for promotion, if you stick with him."
Joe couldn't remember ever having run into the sergeant before, but he said, "Thanks, sergeant."
The other said, evidently realizing Joe didn't recognize him, "We were together on the Chihuahua Reservation, on the jurisdictional fracas between the United Miners and the Teamsters, sir."
It had been almost fifteen years ago. About all that Joe Mauser remembered of that fracas was the abnormal number of casualties they'd taken. His side had lost, but from this distance in time Joe couldn't even remember what force he'd been with. But now he said, "That's right. I thought I recognized you, sergeant."
"It was my first fracas, sir." The sergeant went businesslike. "If you want I should hustle this lad through--"
"Please do, sergeant," Joe added to Max, "I'm not sure where my billet will be. When you're through all this, locate the officer's mess and wait there for me."
"Well, O.K.," Max said doubtfully, still scowling but evidently a servant of an officer, if he wanted to be or not.
"Sir," the sergeant added ominously. "If you've had basic, you know enough how to address an officer."
"Well, yessir," Max said hurriedly.
Joe began to turn away, but then spotted the man immediately behind Max Mainz. He was one of the three with whom Joe had tangled earlier, the one who'd obviously had previous combat experience. He pointed the man out to the sergeant. "You'd better give this lad at least temporary rank of corporal. He's a veteran and we're short of veterans."
The sergeant said, "Yes, sir. We sure are." Joe's former foe looked properly thankful.

* * * * *
Joe Mauser finished off his own red tape and headed for the street to locate a military tailor who could do him up a set of the Haer kilts and fill his other dress requirements. As he went, he wondered vaguely just how many different uniforms he had worn in his time.

In a career as long as his own from time to time you took semi-permanent positions in bodyguards, company police, or possibly the permanent combat troops of this corporation or that. But largely, if you were ambitious, you signed up for the fracases and that meant into a uniform and out of it again in as short a period as a couple of weeks.

At the door he tried to move aside but was too slow for the quick moving young woman who caromed off him. He caught her arm to prevent her from stumbling. She looked at him with less than thanks.

Joe took the blame for the collision. "Sorry," he said. "I'm afraid I didn't see you, Miss."

"Obviously," she said coldly. Her eyes went up and down him, and for a moment he wondered where he had seen her before. Somewhere, he was sure.

She was dressed as they dress who have never considered cost and she had an elusive beauty which would have been even the more hadn't her face projected quite such a serious outlook. Her features were more delicate than those to which he was usually attracted. Her lips were less full, but still-- He was reminded of the classic ideal of the British Romantic Period, the women sung of by Byron and Keats, Shelly and Moore.

She said, "Is there any particular reason why you should be staring at me, Mr.--"

"Captain Mauser," Joe said hurriedly. "I'm afraid I've been rude, Miss--Well, I thought I recognized you."

She took in his civilian dress, typed it automatically, and came to an erroneous conclusion. She said, "Captain? You mean that with everyone else I know drawing down ranks from Lieutenant Colonel to Brigadier General, you can't make anything better than Captain?"

Joe winced. He said carefully, "I came up from the ranks, Miss. Captain is quite an achievement, believe me."

"Up from the ranks!" She took in his clothes again. "You mean you're a Middle? You neither talk nor look like a Middle, captain." She used the caste rating as though it was not quite a derogatory term.

Not that she meant to be deliberately insulting, Joe knew, wearily. How well he knew. It was simply born in her. As once a well-educated aristocracy had, not necessarily unkindly, named their status inferiors niggers; or other aristocrats, in another area of the country, had named theirs greasers. Yes, how well he knew.

He said very evenly, "Mid-Middle now, Miss. However, I was born in the Lower castes."

"An eyebrow went up. "Zen! You must have put in many an hour studying. You talk like an Upper, captain."

She dropped all interest in him and turned to resume her journey.

"Just a moment," Joe said. "You can't go in there, Miss--"

"Her eyebrows went up again. "The name is Haer," she said. "Why can't I go in here, captain?"

Now it came to him why he had thought he recognized her. She had basic features similar to those of that overbred poppycock, Balt Haer.

"Sorry," Joe said. "I suppose under the circumstances, you can. I was about to tell you that they're recruiting with lads running around half clothed. Medical inspections, that sort of thing."

She made a noise through her nose and said over her shoulder, even as she sailed on. "Besides being a Haer, I'm an M.D., captain. At the ludicrous sight of a man shuffling about in his shorts, I seldom blush."

She was gone.

Joe Mauser looked after her. "I'll bet you don't," he muttered.

Had she waited a few minutes he could have explained his Upper accent and his unlikely education. When you'd copped one you had plenty of opportunity in hospital beds to read, to study, to contemplate--and to fester away in your own schemes of rebellion against fate. And Joe had copped many in his time.

III

By the time Joe Mauser called it a day and retired to his quarters he was exhausted to the point where his basic dissatisfaction with the trade he followed was heavily upon him.

He had met his immediate senior officers, largely dilettante Uppers with precious little field experience, and was unimpressed. And he'd met his own junior officers and was shocked. By the looks of things at this stage, Captain Mauser's squadron would be going into this fracas both undermanned with Rank Privates and with junior officers composed largely of temporarily promoted noncoms. If this was typical of Baron Haer's total force, then Balt Haer had been correct; unconditional surrender was to be considered, no matter how disastrous to Haer family fortunes.

Joe had been able to take immediate delivery of one kilted uniform. Now, inside his quarters, he began stripping out of his jacket. Somewhat to his surprise, the small man he had selected earlier in the day to be his batman entered from an inner room, also resplendent in the Haer uniform and obviously happily so.

He helped his superior out of the jacket with an ease that held no subservience but at the same time was correctly respectful. You'd have thought him a batman specially trained.
Joe grunted, "Max, isn't it? I'd forgotten about you. Glad you found our billet all right."
Max said, "Yes, sir. Would the captain like a drink? I picked up a bottle of applejack. Applejack's the drink around here, sir. Makes a topnotch highball with ginger ale and a twist of lemon."
Joe Mauser looked at him. Evidently his tapping this man for orderly had been sheer fortune. Well, Joe Mauser could use some good luck on this job. He hoped it didn't end with selecting a batman.
Joe said, "An applejack highball sounds wonderful, Max. Got ice?"
"Of course, sir." Max left the small room.
Joe Mauser and his officers were billeted in what had once been a motel on the old road between Kingston and Woodstock. There was a shower and a tiny kitchenette in each cottage. That was one advantage in a fracas held in an area where there were plenty of facilities. Such military reservations as that of the Little Big Horn in Montana and particularly some of those in the South West and Mexico, were another thing.
Joe lowered himself into the room's easy-chair and bent down to untie his laces. He kicked his shoes off. He could use that drink. He began wondering all over again if his scheme for winning this Vacuum Tube Transport versus Continental Hovercraft fracas would come off. The more he saw of Baron Haer's inadequate forces, the more he wondered. He hadn't expected Vacuum Tube to be in this bad a shape. Baron Haer had been riding high for so long that one would have thought his reputation for victory would have lured many a veteran to his colors. Evidently they hadn't bitten. The word was out all right.
Max Mainz returned with the drink.
Joe said, "You had one yourself?"
"No, sir."
Joe said, "Well, Zen, go get yourself one and come on back and sit down. Let's get acquainted."
"Well, yessir." Max disappeared back into the kitchenette to return almost immediately. The little man slid into a chair, drink awkwardly in hand.
His superior sized him up, all over again. Not much more than a kid, really. Surprisingly aggressive for a Lower who must have been raised from childhood in a trank-bemused, Telly-entertained household. The fact that he'd broken away from that environment at all was to his credit, it was considerably easier to conform. But then it is always easier to conform, to run with the herd, as Joe well knew. His own break hadn't been an easy one. "Relax," he said now.
Max said, "Well, this is my first day."
"I know. And you've been seeing Telly shows all your life showing how an orderly conducts himself in the presence of his superior." Joe took another pull and yawned. "Well, forget about it. With any man who goes into a fracas with me, I like to be on close terms. When things pickle, I want him to be on my side, not nursing some peeve brought on by his officer trying to give him an inferiority complex."
The little man was eying him in surprise.
Joe finished his highball and came to his feet to get another one. He said, "On two occasions I've had an orderly save my life. I'm not taking any chances but that there might be a third opportunity."
"Well, yessir. Does the captain want me to get him--"
"I'll get it," Joe said.
When he'd returned to his chair, he said, "Why did you join up with Baron Haer, Max?"
The other shrugged it off. "The usual. The excitement. The idea of all those fans watching me on Telly. The share of common stock I'll get. And, you never know, maybe a promotion in caste. I wouldn't mind making Upper-Lower."
Joe said sourly, "One fracas and you'll be over that desire to have the buffs watching you on Telly while they sit around in their front rooms sucking on tranks. And you'll probably be over the desire for the excitement, too. Of course, the share of stock is another thing."
"You aren't just countin' down, captain," Max said, an almost surly overtone in his voice. "You don't know what it's like being born with no more common stock shares than a Mid-Lower."
Joe held his peace, sipping at his drink, taking this one more slowly. He let his eyebrows rise to encourage the other to go on.
Max said doggedly, "Sure, they call it People's Capitalism and everybody gets issued enough shares to insure him a basic living all the way from the cradle to the grave, like they say. But let me tell you, you're a Middle and you don't realize how basic the basic living of a Lower can be."
Joe yawned. If he hadn't been so tired, there would have been more amusement in the situation.
Max was still dogged. "Unless you can add to those shares of stock, it's pretty drab, captain. You wouldn't know."
Joe said, "Why don't you work? A Lower can always add to his stock by working."
Max stirred in indignity. "Work? Listen, sir, that's just one more field that's been automated right out of existence. Category Food Preparation, Sub-division Cooking, Branch Chef. Cooking isn't left in the hands of slobs who might drop a cake of soap into the soup. It's done automatic. The only new changes made in cooking are by real top experts, almost scientists like. And most of them are Uppers, mind you."

Joe Mauser sighed inwardly. So his find in batmen wasn't going to be as wonderful as all that, after all. The man might have been born into the food preparation category from a long line of chefs, but evidently he knew precious little about his field. Joe might have suspected. He himself had been born into Clothing Category, Sub-division Shoes, Branch Repair--Cobbler--a meaningless trade since shoes were no longer repaired but discarded upon showing signs of wear. In an economy of complete abundance, there is little reason for repair of basic commodities. It was high time the government investigated category assignment and reshuffled and reassigned half the nation's population. But then, of course, was the question of what to do with the technologically unemployed.

* * * * *

Max was saying, "The only way I could figure on a promotion to a higher caste, or the only way to earn stock shares, was by crossing categories. And you know what that means. Either Category Military, or Category Religion and I sure as Zen don't know nothing about religion."

Joe said mildly, "Theoretically, you can cross categories into any field you want, Max."

Max snorted. "Theoretically is right ... sir. You ever heard about anybody born a Lower, or even a Middle like yourself, cross categories to, say, some Upper category like banking?"

Joe chuckled. He liked this peppery little fellow. If Max worked out as well as Joe thought he might, there was a possibility of taking him along to the next fracas.

Max was saying, "I'm not saying anything against the old time way of doing things or talking against the government, but I'll tell you, captain, every year goes by it gets harder and harder for a man to raise his caste or to earn some additional stock shares."

The applejack had worked enough on Joe for him to rise against one of his pet peeves. He said, "That term, the old time way, is strictly Telly talk, Max. We don't do things the old time way. No nation in history ever has--with the possible exception of Egypt. Socio-economics are in a continual flux and here in this country we no more do things in the way they did fifty years ago, than fifty years ago they did them the way the American Revolutionists outlined back in the Eighteenth Century."

Max was staring at him. "I don't get that, sir."

Joe said impatiently, "Max, the politico-economic system we have today is an outgrowth of what went earlier. The welfare state, the freezing of the status quo, the Frigid Fracas between the West-world and the Sov-world, industrial automation until useful employment is all but needless--all these things were to be found in embryo more than fifty years ago."

"Well, maybe the captain's right, but you gotta admit, sir, that mostly we do things the old way. We still got the Constitution and the two-party system and--"

Joe was wearying of the conversation now. You seldom ran into anyone, even in Middle caste, the traditionally professional class, interested enough in such subjects to be worth arguing with. He said, "The Constitution, Max, has got to the point of the Bible. Interpret it the way you wish, and you can find anything. If not, you can always make a new amendment. So far as the two-party system is concerned, what effect does it have when there are no differences between the two parties? That phase of pseudo-democracy was beginning as far back as the 1930s when they began passing State laws hindering the emerging of new political parties. By the time they were insured against a third party working its way through the maze of election laws, the two parties had become so similar that elections became almost as big a farce as over in the Sov-world."

"A farce?" Max ejaculated indignantly, forgetting his servant status. "That means not so good, doesn't it? Far as I'm concerned, election day is tops. The one day a Lower is just as good as an Upper. The one day how many shares you got makes no difference. Everybody has everything."

"Sure, sure, sure," Joe sighed. "The modern equivalent of the Roman Bacchanalia. Election day in the West-world when no one, for just that one day, is freer than anyone else."

"Well, what's wrong with that?" The other was all but belligerent. "That's the trouble with you Middles and Uppers, you don't know how it is to be a Lower and--"

Joe snapped suddenly, "I was born a Mid-Lower myself, Max. Don't give me that nonsense."

Max gaped at him, utterly unbelieving.

Joe's irritation fell away. He held out his glass. "Get us a couple of more drinks, Max, and I'll tell you a story."

By the time the fresh drink came, Joe Mauser was sorry he'd made the offer. He thought back. He hadn't told anyone the Joe Mauser story in many a year. And, as he recalled, the last time had been when he was well into his cups, on an election day at that, and his listener had been a Low-Upper, a hereditary aristocrat, one of the one per
cent of the upper strata of the nation. Zen! How the man had laughed. He'd roared his amusement till the tears ran.

However, Joe said, "Max, I was born in the same caste you were--average father, mother, sisters and brothers. They subsisted on the basic income guaranteed from birth, sat and watched Telly for an unbelievable number of hours each day, took tranx to keep themselves happy. And thought I was crazy because I didn't. Dad was the sort of man who'd take his belt off to a child of his who questioned such school taught slogans as What was good enough for Daddy is good enough for me.

"They were all fracas fans, of course. As far back as I can remember the picture is there of them gathered around the Telly, screaming excitement." Joe Mauser sneered, uncharacteristically.

"You don't sound much like you're in favor of your trade, captain," Max said.

Joe came to his feet, putting down his still half-full glass. "I'll make this epic story short, Max. As you said, the two actually valid methods of rising above the level in which you were born are in the Military and Religious Categories. Like you, even I couldn't stomach the latter."

Joe Mauser hesitated, then finished it off. "Max, there have been few societies that man has evolved that didn't allow in some manner for the competent or sly, the intelligent or the opportunist, the brave or the strong, to work his way to the top. I don't know which of these I personally fit into, but I rebel against remaining in the lower categories of a stratified society. Do I make myself clear?"

"Well, no sir, not exactly."

Joe said flatly, "I'm going to fight my way to the top, and nothing is going to stand in the way. Is that clearer?"

"Yessir," Max said, taken aback.

IV

After routine morning duties, Joe Mauser returned to his billet and mystified Max Mainz by not only changing into mufti himself but having Max do the same.

In fact, the new batman protested faintly. He hadn't nearly, as yet, got over the glory of wearing his kilts and was looking forward to parading around town where he had a point, of course. The appointed time for the fracas was getting closer and buffs were beginning to stream into town to bask in the atmosphere of threatened death. Everybody knew what a military center, on the outskirts of a fracas reservation such as the Catskills, was like immediately preceding a clash between rival corporations. The high-strung gaiety, the drinking, the overtranking, the relaxation of mores. Even a Rank Private had it made. Admiring civilians to buy drinks and hang on your every word, and more important still, sensuous-eyed women, their faces slack in thinly suppressed passion. It was a recognized phenomenon, even Max Mainz knew--this desire on the part of women Telly fans to date a man, and then watch him later, killing or being killed.

"Time enough to wear your fancy uniform," Joe Mauser growled at him. "In fact, tomorrow's a local election day. Parlay that up on top of all the fracas fans gravitating into town and you'll have a wingding the likes of nothing you've seen before."

"Well yessir," Max begrudged. "Where're we going now, captain?"

"To the airport. Come along."

Joe Mauser led the way to his sports hovercar and as soon as the two were settled into the bucket seats, hit the lift lever with the butt of his left hand. Aircushion-borne, he trod down on the accelerator.

Max Mainz was impressed. "You know," he said. "I never been in one of these swanky sports jobs before. The kinda car you can afford on the income of a Mid-Lower's stock aren't--"

"Knock it off," Joe said wearily. "Carping we'll always have with us evidently, but in spite of all the beefing in every strata from Low-Lower to Upper-Middle, I've yet to see any signs of organized protest against our present politico-economic system."

[Illustration]

"Hey," Max said. "Don't get me wrong. What was good enough for Dad is good enough for me. You won't catch me talking against the government."

"Hm-m-m," Joe murmured. "And all the other cliches taught to us to preserve the status quo, our People's Capitalism." They were reaching the outskirts of town, crossing the Esopus. The airport lay only a mile or so beyond.

It was obviously too deep for Max, and since he didn't understand, he assumed his superior didn't know what he was talking about. He said, tolerantly, "Well, what's wrong with People's Capitalism? Everybody owns the corporations. Damnsight better than the Sovs have."

Joe said sourly. "We've got one optical illusion, they've got another, Max. Over there they claim the proletariat owns the means of production. Great. But the Party members are the ones who control it, and, as a result they manage to do all right for themselves. The Party hierarchy over there are like our Uppers over here."

"Yeah." Max was being particularly dense. "I've seen a lot about it on Telly. You know, when there isn't a good
fracas on, you tune to one of them educational shows, like—"

Joe winced at the term educational, but held his peace.

"It's pretty rugged over there. But in the West-world, the people own a corporation's stock and they run it and get the benefit."

"At least it makes a beautiful story," Joe said dryly. "Look, Max. Suppose you have a corporation that has two hundred thousand shares out and they're distributed among one hundred thousand and one persons. One hundred thousand of these own one share apiece, but the remaining stockholder owns the other hundred thousand."

"I don't know what you're getting at," Max said.

Joe Mauser was tired of the discussion. "Briefly," he said, "we have the illusion that this is a People's Capitalism, with all stock in the hands of the People. Actually, as ever before, the stock is in the hands of the Uppers, all except a mere dribble. They own the country and they run it for their own benefit."

Max shot a less than military glance at him. "Hey, you're not one of these Sovs yourself, are you?"

They were coming into the parking area near the Administration Building of the airport. "No," Joe said so softly that Max could hardly hear his words. "Only a Mid-Middle on the make."

* * * * *

Followed by Max, he strode quickly to the Administration Building, presented his credit identification at the desk and requested a light aircraft for a period of three hours. The clerk, hardly looking up, began going through motions, speaking into telescreens.

The clerk said finally, "You might have a small wait, sir. Quite a few of the officers involved in this fracas have been renting out taxi-planes almost as fast as they're available."

That didn't surprise Joe Mauser. Any competent officer made a point of an aerial survey of the battle reservation before going into a fracas. Aircraft, of course, couldn't be used during the fray, since they postdated the turn of the century, and hence were relegated to the cemetery of military devices along with such items as nuclear weapons, tanks, and even gasoline-propelled vehicles of size to be useful.

Use an aircraft in a fracas, or even build an aircraft for military usage and you'd have a howl go up from the military attaches from the Sov-world that would be heard all the way to Budapest. Not a fracas went by but there were scores, if not hundreds, of military observers, keen-eyed to check whether or not any really modern tools of war were being illegally utilized. Joe Mauser sometimes wondered if the West-world observers, over in the Sov-world, were as hair fine in their living up to the rules of the Universal Disarmament Pact. Probably. But, for that matter, they didn't have the same system of fighting fracases over there, as in the West.

Joe took a chair while he waited and thumbed through a fan magazine. From time to time he found his own face in such publications. He was a third-rate celebrity, really. Luck hadn't been with him so far as the buffs were concerned. They wanted spectacular victories, murderous situations in which they could lose themselves in vicarious sadistic thrills. Joe had reached most of his peaks while in retreat, or commanding a holding action. His officers appreciated him and so did the ultra-knowledgeable fracas buffs--but he was all but an unknown to the average dim wit who spent most of his life glued to the Telly set, watching men butcher each other.

On the various occasions when matters had pickled and Joe had to fight his way out against difficult odds, using spectacular tactics in desperation, he was almost always off camera. Purely luck. On top of skill, determination, experience and courage, you had to have luck in the Military Category to get anywhere.

This time Joe was going to manufacture his own.

A voice said, "Ah, Captain Mauser."

Joe looked up, then came to his feet quickly. In automatic reflex, he began to come to the salute but then caught himself. He said stiffly, "My compliments, Marshal Cogswell."

The other was a smallish man, but strikingly strong of face and strongly built. His voice was clipped, clear and had the air of command as though born with it. He, like Joe, wore mufti and now extended his hand to be shaken.

"I hear you've signed up with Baron Haer, captain. I was rather expecting you to come in with me. Had a place for a good aide de camp. Liked your work in that last fracas we went through together."

"Thank you, sir," Joe said. Stonewall Cogswell was as good a tactician as freelanced and he was more than that. He was a judge of men and a stickler for detail. And right now, if Joe Mauser knew Marshal Stonewall Cogswell as well as he thought, Cogswell was smelling a rat. There was no reason why old pro Joe Mauser should sign up with a sure loser like Vacuum Tube when he could have earned more shares taking a commission with Hovercraft.

He was looking at Joe brightly, the question in his eyes. Three or four of his staff were behind a few paces, looking polite, but Cogswell didn't bring them into the conversation. Joe knew most by sight. Good men all. Old pros all. He felt another twinge of doubt.

Joe had to cover. He said, "I was offered a particularly good contract, sir. Too good to resist."

The other nodded, as though inwardly coming to a satisfactory conclusion. "Baron Haer's connections, eh? He's
probably offered to back you for a bounce in caste. Is that it, Joe?"

Joe Mauser flushed. Stonewall Cogswell knew what he was talking about. He'd been born into Middle status himself and had become an Upper the hard way. His path wasn't as long as Joe's was going to be, but long enough and he knew how rocky the climb was. How very rocky.

Joe said, stiffly, "I'm afraid I'm in no position to discuss my commander's military contracts, marshal. We're in mufti, but after all--"

Cogswell's lean face registered one of his infrequent grimaces of humor. "I understand, Joe. Well, good luck and I hope things don't pickle for you in the coming fracas. Possibly we'll find ourselves aligned together again at some future time."

"Thank you, sir," Joe said, once more having to catch himself to prevent an automatic salute.

Cogswell and his staff went off, leaving Joe looking after them. Even the marshal's staff members were top men, any of whom could have conducted a divisional magnitude fracas. Joe felt the coldness in his stomach again. Although it must have looked like a cinch, the enemy wasn't taking any chances whatsoever. Cogswell and his officers were undoubtedly here at the airport for the same reason as Joe. They wanted a thorough aerial reconnaissance of the battlefield-to-be, before the issue was joined.

* * *

Max was standing at his elbow. "Who was that, sir? Looks like a real tough one."

"He is a real tough one," Joe said sourly. "That's Stonewall Cogswell, the best field commander in North America."

Max pursed his lips. "I never seen him out of uniform before. Lots of times on Telly, but never out of uniform. I thought he was taller than that."

"He fights with his brains," Joe said, still looking after the craggy field marshal. "He doesn't have to be any taller."

Max scowled. "Where'd he ever get that nickname, sir?"

"Stonewall?" Joe was turning to resume his chair and magazine. "He's supposed to be a student of a top general back in the American Civil War. Uses some of the original Stonewall's tactics."

Max was out of his depth. "American Civil War? Was that much of a fracas, captain? It musta been before my time."

"It was quite a fracas," Joe said dryly. "Lot of good lads died. A hundred years after it was fought, the reasons it was fought seemed about as valid as those we fight fracases for today. Personally I--"

He had to cut it short. They were calling him on the address system. His aircraft was ready. Joe made his way to the hangars, followed by Max Mainz. He was going to pilot the airplane himself and old Stonewall Cogswell would have been surprised at what Joe Mauser was looking for.

V

By the time they had returned to quarters, there was a message waiting for Captain Mauser. He was to report to the officer commanding reconnaissance.

Joe redressed in the Haer kilts and proceeded to headquarters. The officer commanding reconnaissance turned out to be none other than Balt Haer, natty as ever, and, as ever, arrogantly tapping his swagger stick against his leg.

"Zen! Captain," he complained. "Where have you been? Off on a tranq kick? We've got to get organized."

Joe Mauser snapped him a salute. "No, sir. I rented an aircraft to scout out the terrain over which we'll be fighting."

"Indeed. And what were your impressions, captain?" There was an overtone which suggested that it made little difference what impressions a captain of cavalry might have gained.

Joe shrugged. "Largely mountains, hills, woods. Good reconnaissance is going to make the difference in this one. And in the fracas itself cavalry is going to be more important than either artillery or infantry. A Nathan Forrest fracas, sir. A matter of getting there fastest with the mostest."

Balt Haer said amusedly. "Thanks for your opinion, captain. Fortunately, our staff has already come largely to the same conclusions. Undoubtedly, they'll be glad to hear your wide experience bears them out."

Joe said evenly, "It's a rather obvious conclusion, of course. He took this as it came, having been through it before. The dilettante amateur's dislike of the old pro. The amateur in command who knew full well he was less capable than many of those below him in rank.

"Of course, captain," Balt Haer flicked his swagger stick against his leg. "But to the point. Your squadron is to be deployed as scouts under my overall command. You've had cavalry experience, I assume."

"Yes, sir. In various fracases over the past fifteen years."

"Very well. Now then, to get to the reason I have summoned you. Yesterday in my father's office you intimated
that you had some grandiose scheme which would bring victory to the Haer colors. But then, on some thin excuse, refused to divulge just what the scheme might be."

Joe Mauser looked at him unblinkingly.

Balt Haer said: "Now I'd like to have your opinion on just how Vacuum Tube Transport can extract itself from what would seem a poor position at best."

In all there were four others in the office, two women clerks fluttering away at typers, and two of Balt Haer's junior officers. They seemed only mildly interested in the conversation between Balt and Joe.

Joe wet his lips carefully. The Haer scion was his commanding officer. He said, "Sir, what I had in mind is a new gimmick. At this stage, if I told anybody and it leaked, it'd never be effective, not even this first time."

Haer observed him coldly. "And you think me incapable of keeping your secret, ah, gimmick, I believe is the idiomatic term you used."

Joe Mauser's eyes shifted around the room, taking in the other four, who were now looking at him.

Bait Haer rapped, "These members of my staff are all trusted Haer employees, Captain Mauser. They are not fly-by-night freelancers hired for a week or two."

Joe said, "Yes, sir. But it's been my experience that one person can hold a secret. It's twice as hard for two, and from there on it's a decreasing probability in a geometric ratio."

The younger Haer's stick rapped the side of his leg, impatiently. "Suppose I inform you that this is a command, captain? I have little confidence in a supposed gimmick that will rescue our forces from disaster and I rather dislike the idea of a captain of one of my squadrons dashing about with such a bee in his bonnet when he should be obeying my commands."

Joe kept his voice respectful. "Then, sir, I'd request that we take the matter to the Commander in Chief, your father."

"Indeed!"

Joe said, "Sir, I've been working on this a long time. I can't afford to risk throwing the idea away."

Bait Haer glared at him. "Very well, captain. I'll call your bluff, come along."

He turned on his heel and headed from the room.

Joe Mauser shrugged in resignation and followed him.

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The old Baron wasn't much happier about Joe Mauser's secrets than was his son. It had only been the day before that he had taken Joe on, but already he had seemed to have aged in appearance. Evidently, each hour that went by made it increasingly clear just how perilous a position he had assumed. Vacuum Tube Transport had elbowed, buffalosed, bluffed and edged itself up to the outskirts of the really big time. The Baron's ability, his aggressiveness, his flair, his political pull, had all helped, but now the chips were down. He was up against one of the biggies, and this particular biggy was tired of ambitious little Vacuum Tube Transport.

He listened to his son's words, listened to Joe's defense.

He said, looking at Joe, "If I understand this, you have some scheme which you think will bring victory in spite of what seems a disastrous situation."

"Yes, sir."

The two Haers looked at him, one impatiently, the other in weariness.

Joe said, "I'm gambling everything on this, sir. I'm no Rank Private in his first fracas. I deserve to be given some leeway."

Balt Haer snorted. "Gambling everything! What in Zen would you have to gamble, captain? The whole Haer family fortunes are tied up. Hovercraft is out for blood. They won't be satisfied with a token victory and a negotiated compromise. They'll devastate us. Thousands of mercenaries killed, with all that means in indemnities; millions upon million in expensive military equipment, most of which we've had to hire and will have to recompense for. Can you imagine the value of our stock after Stonewall Cogswell has finished with us? Why, every two by four trucking outfit in North America will be challenging us, and we won't have the forces to meet a minor skirmish."

Joe reached into an inner pocket and laid a sheaf of documents on the desk of Baron Malcolm Haer. The Baron scowled down at them.

Joe said simply, "I've been accumulating stock since before I was eighteen and I've taken good care of my portfolio in spite of taxes and the various other pitfalls which make the accumulation of capital practically impossible. Yesterday, I sold all of my portfolio I was legally allowed to sell and converted to Vacuum Tube Transport." He added, dryly, "Getting it at an excellent rate, by the way."

Balt Haer mulled through the papers, unbelievingly. "Zen!" he ejaculated. "The fool really did it. He's sunk a small fortune into our stock."

Baron Haer growled at his son, "You seem considerably more convinced of our defeat than the captain, here.
Perhaps I should reverse your positions of command."

His son grunted, but said nothing.

Old Malcolm Haer's eyes came back to Joe. "Admittedly, I thought you on the romantic side yesterday, with your hints of some scheme which would lead us out of the wilderness, so to speak. Now I wonder if you might not really have something. Very well, I respect your claimed need for secrecy. Espionage is not exactly an antiquated military field."

"Thank you, sir."

But the Baron was still staring at him. "However, there's more to it than that. Why not take this great scheme to Marshal Cogswell? And yesterday you mentioned that the Telly sets of the nation would be tuned in on this fracas, and obviously you are correct. The question becomes, what of it?"

The fat was in the fire now. Joe Mauser avoided the haughty stare of young Balt Haer and addressed himself to the older man. "You have political pull, sir. Oh, I know you don't make and break presidents. You couldn't even pull enough wires to keep Hovercraft from making this a divisional magnitude fracas--but you have pull enough for my needs."

Baron Haer leaned back in his chair, his barrel-like body causing that article of furniture to creak. He crossed his hands over his stomach. "And what are your needs, Captain Mauser?"

Joe said evenly, "If I can bring this off, I'll be a fracas buff celebrity. I don't have any illusions about the fickleness of the Telly fans, but for a day or two I'll be on top. If at the same time I had your all out support, pulling what strings you could reach--"

"Why then, you'd be promoted to Upper, wouldn't you, captain?" Balt Haer finished for him, amusement in his voice.

"That's what I'm gambling on," Joe said evenly.

The younger Haer grinned at his father superciliously. "So our captain says he will defeat Stonewall Cogswell in return for you sponsoring his becoming a member of the nation's elite."

"Good Heavens, is the supposed cream of the nation now selected on no higher a level than this?" There was sarcasm in the words.

The three men turned. It was the girl Joe had bumped into the day before. The Haers didn't seem surprised at her entrance.

"Nadine," the older man growled. "Captain Joseph Mauser who has been given a commission in our forces."

Joe went through the routine of a Middle of officer's rank being introduced to a lady of Upper caste. She smiled at him, somewhat mockingly, and failed to make standard response.

Nadine Haer said, "I repeat, what is this service the captain can render the house of Haer so important that pressure should be brought to raise him to Upper caste? It would seem unlikely that he is a noted scientist, an outstanding artist, a great teacher--"

Joe said, uncomfortably, "They say the military is a science, too."

Her expression was almost as haughty as that of her brother. "Do they? I have never thought so."

"Really, Nadine," her father grumbled. "This is hardly your affair."

"No? In a few days I shall be repairing the damage you have allowed, indeed sponsored, to be committed upon the bodies of possibly thousands of now healthy human beings."

Balt said nastily, "Nobody asked you to join the medical staff, Nadine. You could have stayed in your laboratory, figuring out new methods of preventing the human race from replenishing itself."

The girl was obviously not the type to redden, but her anger was manifest. She spun on her brother. "If the race continues its present maniac course, possibly more effective methods of birth control are the most important development we could make. Even to the ultimate discovery of preventing all future conception."

Joe caught himself in mid-chuckle.

But not in time. She spun on him in his turn. "Look at yourself in that silly skirt. A professional soldier! A killer! In my opinion the most useless occupation ever devised by man. Parasite on the best and useful members of society. Destroyer by trade!"

Joe began to open his mouth, but she overrode him. "Yes, yes. I know. I've read all the nonsense that has accumulated down through the ages about the need for, the glory of, the sacrifice of the professional soldier. How they defend their country. How they give all for the common good. Zen! What nonsense."

Balt Haer was smirking sourly at her. "The theory today is, Nadine, old thing, that professionals such as the captain are gathering experience in case a serious fracas with the Sovs ever develops. Meanwhile his training is kept at a fine edge fighting in our inter-corporation, inter-union, or union-corporation fracases that develop in our private enterprise society."

* * * * *
She laughed her scorn. "And what a theory! Limited to the weapons which prevailed before 1900. If there was ever real conflict between the Sov-world and our own, does anyone really believe either would stick to such arms? Why, aircraft, armored vehicles, yes, and nuclear weapons and rockets, would be in overnight use."

Joe was fascinated by her furious attack. He said, "Then, what would you say was the purpose of the fracases, Miss--"

"Circuses," she snorted. "The old Roman games, all over again, and a hundred times worse. Blood and guts sadism. The quest of a frustrated person for satisfaction in another's pain. Our Lows of today are as useless and frustrated as the Roman proletariat and potentially they're just as dangerous as the mob that once dominated Rome. Automation, the second industrial revolution, has eliminated for all practical purposes the need for their labor. So we give them bread and circuses. And every year that goes by the circuses must be increasingly sadistic, death on an increasing scale, or they aren't satisfied. Once it was enough to have fictional mayhem, cowboys and Indians, gangsters, or G.I.s versus the Nazis, Japs or Commies, but that's passed. Now we need real blood and guts."

Baron Haer snapped finally, "All right, Nadine. We've heard this lecture before. I doubt if the captain is interested, particularly since you don't seem to be able to get beyond the protesting stage and have yet to come up with an answer."

"I have an answer!"

"Ah?" Balt Haer raised his eyebrows, mockingly.

"Yes! Overthrow this silly status society. Resume the road to progress. Put our people to useful endeavor, instead of sitting in front of their Telly sets, taking trank pills to put them in a happy daze and watching sadistic fracases to keep them in thrills, and their minds from their condition."

Joe had figured on keeping out of the controversy with this firebrand, but now, really interested, he said, "Progress to where?"

She must have caught in his tone that he wasn't needling. She frowned at him. "I don't know man's goal, if there is one. I'm not even sure it's important. It's the road that counts. The endeavor. The dream. The effort expended to make a world a better place than it was at the time of your birth."

In the outer offices, when he had closed the door behind him, he rolled his eyes upward in mute thanks to whatever powers might be. He had somehow gained the enmity of Balt, his immediate superior, but he'd also gained the support of Baron Haer himself, which counted considerably more.

He considered for a moment, Nadine Haer's words. She was obviously a malcontent, but, on the other hand, her opinions of his chosen profession weren't too different than his own. However, given this victory, this upgrading in caste, and Joe Mauser would be in a position to retire.

The door opened and shut behind him and he half turned.

Nadine Haer, evidently still caught up in the hot words between herself and her relatives, glared at him. All of which stressed the beauty he had noticed the day before. She was an almost unbelievably pretty girl, particularly when flushed with anger.

It occurred to him with a blowlike suddenness that, if his caste was raised to Upper, he would be in a position to woo such as Nadine Haer.

He looked into her furious face and said, "I was intrigued, Miss Haer, with what you had to say, and I'd like to discuss some of your points. I wonder if I could have the pleasure of your company at some nearby refreshment--"

"My, how formal an invitation, captain. I suppose you had in mind sitting and flipping back a few trank pills."

Joe looked at her. "I don't believe I've had a trank in the past twenty years, Miss Haer. Even as a boy, I didn't particularly take to having my senses dulled with drug-induced pleasure."

Some of her fury was abating, but she was still critical of the professional mercenary. Her eyes went up and
down his uniform in scorn. "You seem to make pretenses of being cultivated, captain. Then why your chosen profession?"

He'd had the answer to that for long years. He said now, simply, "I told you I was born a Lower. Given that, little counts until I fight my way out of it. Had I been born in a feudalist society, I would have attempted to batter myself into the nobility. Under classical capitalism, I would have done my utmost to accumulate a fortune, enough to reach an effective position in society. Now, under People's Capitalism ..."

She snorted, "Industrial Feudalism would be the better term."

"... I realize I can't even start to fulfill myself until I am a member of the Upper caste."

Her eyes had narrowed, and the anger was largely gone. "But you chose the military field in which to better yourself?"

"Government propaganda to the contrary, it is practically impossible to raise yourself in other fields. I didn't build this world, possibly I don't even approve of it, but since I'm in it I have no recourse but to follow its rules."

Her eyebrows arched. "Why not try to change the rules?"

Joe blinked at her.

Nadine Haer said, "Let's look up that refreshment you were talking about. In fact, there's a small coffee bar around the corner where it'd be possible for one of Baron Haer's brood to have a cup with one of her father's officers of Middle caste."

VI

The following morning, hands on the pillow beneath his head, Joe Mauser stared up at the ceiling of his room and rehashed his session with Nadine Haer. It hadn't taken him five minutes to come to the conclusion that he was in love with the girl, but it had taken him the rest of the evening to keep himself under rein and not let the fact get through to her.

He wanted to talk about the way her mouth tucked in at the corners, but she was hot on the evolution of society. He would have liked to have kissed that impossibly perfectly shaped ear of hers, but she was all for exploring the reasons why man had reached his present impasse. Joe was for holding hands, and staring into each other's eyes, she was for delving into the differences between the West-world and the Sov-world and the possibility of resolving them.

Of course, to keep her company at all it had been necessary to suppress his own desires and to go along. It obviously had never occurred to her that a Middle might have romantic ideas involving Nadine Haer. It had simply not occurred to her, no matter the radical teachings she advocated.

Most of their world was predictable from what had gone before. In spite of popular fable to the contrary, the division between classes had become increasingly clear. Among other things, tax systems were such that it became all but impossible for a citizen born poor to accumulate a fortune. Through ability he might rise to the point of earning fabulous sums--and wind up in debt to the tax collector. A great inventor, a great artist, had little chance of breaking into the domain of what finally became the small percentage of the population now known as Uppers. Then, too, the rising cost of a really good education became such that few other than those born into the Middle or Upper castes could afford the best of schools. Castes tended to perpetuate themselves.

Politically, the nation had fallen increasingly deeper into the two-party system, both parties of which were tightly controlled by the same group of Uppers. Elections had become a farce, a great national holiday in which stereotyped patriotic speeches, pretenses of unity between all castes, picnics, beer busts and trank binges predominated for one day.

Economically, too, the augurs had been there. Production of the basics had become so profuse that poverty in the old sense of the word had become nonsensical. There was an abundance of the necessities of life for all. Social security, socialized medicine, unending unemployment insurance, old age pensions, pensions for veterans, for widows and children, for the unfit, pensions and doles for this, that and the other, had doubled, and doubled again, until everyone had security for life. The Uppers, true enough, had opulence far beyond that known by the Middles and lived like Gods compared to the Lowers. But all had security. They had agreed, thus far, Joe and Nadine. But then had come debate.

* * * * *

"Then why," Joe had asked her, "haven't we achieved what your brother called it? Why isn't this Utopia? Isn't it what man has been yearning for, down through the ages? Where did the wheel come off? What happened to the dream?"

Nadine had frowned at him--beautifully, he thought. "It's not the first time man has found abundance in a society, though never to this degree. The Incas had it, for instance."

"I don't know much about them," Joe admitted. "An early form of communism with a sort of military-priesthood at the top."
She had nodded, her face serious, as always. "And for themselves, the Romans more or less had it—at the expense of the nations they conquered, of course."

"And—" Joe prodded.

"And in these examples the same thing developed. Society ossified. Joe," she said, using his first name for the first time, and in a manner that set off a new count down in his blood, "a ruling caste and a socio-economic system perpetuates itself, just so long as it ever can. No matter what damage it may do to society as a whole, it perpetuates itself even to the point of complete destruction of everything.

"Remember Hitler? Adolf the Aryan and his Thousand Year Reich? When it became obvious he had failed, and the only thing that could result from continued resistance would be destruction of Germany's cities and millions of her people, did he and his clique resign or surrender? Certainly not. They attempted to bring down the whole German structure in a Götterdammerung."

Nadine Haer was deep into her theme, her eyes flashing her conviction. "A socio-economic system reacts like a living organism. It attempts to live on, indefinitely, agonizingly, no matter how antiquated it might have become. The Roman politico-economic system continued for centuries after it should have been replaced. Such reformers as the Gracchus brothers were assassinated or thrust aside so that the entrenched elements could perpetuate themselves, and when Rome finally fell, darkness descended for a thousand years on Western progress."

Joe had never gone this far in his thoughts. He said now, somewhat uncomfortably, "Well, what would replace what we have now? If you took power from you Uppers, who could direct the country? The Lowers? That's not even funny. Take away their fracases and their trank pills and they'd go berserk. They don't want anything else."

Her mouth worked. "Admittedly, we've already allowed things to deteriorate much too far. We should have done something long ago. I'm not sure I know the answer. All I know is that in order to maintain the status quo, we're not utilizing the efforts of more than a fraction of our people. Nine out of ten of us spend our lives sitting before the Telly, sucking tranks. Meanwhile, the motivation for continued progress seems to have withered away. Our Upper political circles are afraid some seemingly minor change might avalanche, so more and more we lean upon the old way of doing things."

Joe had put up mild argument. "I've heard the case made that the Lowers are fools and the reason our present socio-economic system makes it so difficult to rise from Lower to Upper is that you cannot make a fool understand he is one. You can only make him angry. If some, who are not fools, are allowed to advance from Lower to Upper, the vast mass who are fools will be angry because they are not allowed to. That's why the Military Category is made a channel of advance. To take that road, a man gives up his security and he'll die if he's a fool."

Nadine had been scornful. "That reminds me of the old contention by racial segregationalists that the Negroes smelled bad. First they put them in a position where they had insufficient bathing facilities, their diet inadequate, and their teeth uncared for, and then protested that they couldn't be associated with because of their odor. Today, we are born within our castes. If an Upper is inadequate, he nevertheless remains an Upper. An accident of birth makes him an aristocrat; environment, family, training, education, friends, traditions and laws maintain him in that position. But a Lower who potentially has the greatest of value to society, is born handicapped and he's hard put not to wind up before a Telly, in a mental daze from trank. Sure he's a fool, he's never been allowed to develop himself."

Yes, Joe reflected now, it had been quite an evening. In a life of more than thirty years devoted to rebellion, he had never met anyone so outspoken as Nadine Haer, nor one who had thought it through as far as she had. He grunted. His own revolt was against the level at which he had found himself in society, not the structure of society itself. His whole raison d'etre was to lift himself to Upper status. It came as a shock to him to find a person he admired who had been born into Upper caste, desirous of tearing the whole system down.

His thoughts were interrupted by the door opening and the face of Max Mainz grinning in at him. Joe was mildly surprised at his orderly not knocking before opening the door. Max evidently had a lot to learn.

The little man blurted, "Come on, Joe. Let's go out on the town!"

"Joe?" Joe Mauser raised himself to one elbow and stared at the other. "Leaving aside the merits of your suggestion for the moment, do you think you should address an officer by his first name?"

Max Mainz came fully into the bedroom, his grin still wider. "You forgot! It's election day!"

"Oh." Joe Mauser relaxed into his pillow. "So it is. No duty for today, eh?"

"No duty for anybody," Max crowed. "What'd you say we go into town and have a few drinks in one of the Upper bars?"

Joe grunted, but began to arise. "What'll that accomplish? On election day, most of the Uppers get done up in their oldest clothes and go slumming down in the Lower quarters."

Max wasn't to be put off so easily. "Well, wherever we go, let's get going. Zen! I'll bet this town is full of fracas buffs from as far as Philly. And on election day, to boot. Wouldn't it be something if I found me a real fracas fan,
Joe laughed at him, even as he headed for the bathroom. As a matter of fact, he rather liked the idea of going into town for the show. "Max," he said over his shoulder, "you're in for a big disappointment. They're all the same. Upper, Lower, or Middle."

"Yeah?" Max grinned back at him. "Well, I'd like the pleasure of finding out if that's true by personal experience."

VII

In a far away past, Kingston had once been the capital of the United States. For a short time, when Washington's men were in flight after the debacle of their defeat in New York City, the government of the United Colonies had held session in this Hudson River town. It had been its one moment of historic glory, and afterward Kingston had slipped back into being a minor city on the edge of the Catskills, approximately halfway between New York and Albany.

Of most recent years, it had become one of the two recruiting centers which bordered the Catskill Military Reservation, which in turn was one of the score or so population cleared areas throughout the continent where rival corporations or unions could meet and settle their differences in combat--given permission of the Military Category Department of the government. And permission was becoming ever easier to acquire.

It had slowly evolved, the resorting to trial by combat to settle disputes between competing corporations, disputes between corporations and unions, disputes between unions over jurisdiction. Slowly, but predictably. Since the earliest days of the first industrial revolution, conflict between these elements had often broken into violence, sometimes on a scale comparable to minor warfare. An early example was the union organizing in Colorado when armed elements of the Western Federation of Miners shot it out with similarly armed "detectives" hired by the mine owners, and later with the troops of an unsympathetic State government.

By the middle of the Twentieth-Century, unions had become one of the biggest businesses in the country, and by this time a considerable amount of the industrial conflict had shifted to fights between them for jurisdiction over dues-paying members. Battles on the waterfront, assassination and counter-assassination by gun-toting goon squads dominated by gangsters, industrial sabotage, frays between pickets and scabs--all were common occurrences.

But it was the coming of Telly which increasingly brought such conflicts literally before the public eye. Zealous reporters made ever greater effort to bring the actual mayhem before the eyes of their viewers, and never were their efforts more highly rewarded.

A society based upon private endeavor is as jealous of a vacuum as is Mother Nature. Give a desire that can be filled profitably, and the means can somehow be found to realize it.

* * *

At one point in the nation's history, the railroad lords had dominated the economy, later it became the petroleum princes of Texas and elsewhere, but toward the end of the Twentieth Century the communications industries slowly gained prominence. Nothing was more greatly in demand than feeding the insatiable maw of the Telly fan, nothing, ultimately, became more profitable.

And increasingly, the Telly buff endorsed the more sadistic of the fictional and nonfictional programs presented him. Even in the earliest years of the industry, producers had found that murder and mayhem, war and frontier gunfights, took precedence over less gruesome subjects. Music was drowned out by gunfire, the dance replaced by the shuffle of cowboy and rustler advancing down a dusty street toward each other, their fingertips brushing the grips of their six-shooters, the comedian's banter fell away before the chatter of the gangster's tommy gun.

And increasing realism was demanded. The Telly reporter on the scene of a police arrest, preferably a murder, a rumble between rival gangs of juvenile delinquents, a longshoreman's fray in which scores of workers were hospitalized. When attempts were made to suppress such broadcasts, the howl of freedom of speech and the press went up, financed by tycoons clever enough to realize the value of the subjects they covered so adequately.

The vacuum was there, the desire, the need. Bread the populace had. Trank was available to all. But the need was for the circus, the vicious, sadistic circus, and bit by bit, over the years and decades, the way was found to circumvent the country's laws and traditions to supply the need.

Aye, a way is always found. The final Universal Disarmament Pact which had totally banned all weapons invented since the year 1900 and provided for complete inspection, had not ended the fear of war. And thus there was excuse to give the would-be soldier, the potential defender of the country in some future inter-nation conflict, practical experience.

Slowly tolerance grew to allow union and corporation to fight it out, hiring the services of mercenaries. Slowly rules grew up to govern such fracases. Slowly a department of government evolved. The Military Category became as acceptable as the next, and the mercenary a valued, even idolized, member of society. And the field became practically the only one in which a status quo orientated socio-economic system allowed for advancement in caste.
Joe Mauser and Max Mainz strolled the streets of Kingston in an extreme of atmosphere seldom to be enjoyed. Not only was the advent of a divisional magnitude fracas only a short period away, but the freedom of an election day as well. The carnival, the Mardi Gras, the fete, the fiesta, of an election. Election Day, when each aristocrat became only a man, and each man an aristocrat, free of all society's artificially conceived, caste-perpetuating rituals and taboos.

Carnival! The day was young, but already the streets were thick with revelers, with dancers, with drunks. A score of bands played, youngsters in particular ran about attired in costume, there were barbeques and flowing beer kegs. On the outskirts of town were roller coasters and ferris wheels, fun houses and drive-it-yourself miniature cars. Carnival!

Max said happily, "You drink, Joe? Or maybe you like trank, better." Obviously, he loved to roll the other's first name over his tongue.

Joe wondered in amusement how often the little man had found occasion to call a Mid-Middle by his first name. "No trank," he said. "Alcohol for me. Mankind's old faithful."

"Well," Max debated, "get high on alcohol and bingo, a hangover in the morning. But trank? You wake up with a smile."

"And a desire for more trank to keep the mood going," Joe said wryly. "Get smashed on alcohol and you suffer for it eventually."

"Well, that's one way of looking at it," Max argued happily. "So let's start off with a couple of quick ones in this here Upper joint."

Joe looked the place over. He didn't know Kingston overly well, but by the appearance of the building and by the entry, it was probably the swankiest hotel in town. He shrugged. So far as he was concerned, he appreciated the greater comfort and the better service of his Middle caste bars, restaurants and hotels over the ones he had patronized when a Lower. However, his wasn't an immediate desire to push into the preserves of the Uppers; not until he had won rightfully to their status.

But on this occasion the little fellow wanted to drink at an Upper bar. Very well, it was election day. "Let's go," he said to Max.

In the uniform of a Rank Captain of the Military Category, there was little to indicate caste level, and ordinarily given the correct air of nonchalance, Joe Mauser, in uniform, would have been able to go anywhere, without so much as a raised eyebrow--until he had presented his credit card, which indicated his caste. But Max was another thing. He was obviously a Lower, and probably a Low-Lower at that.

But space was made for them at a bar packed with election day celebrants, politicians involved in the day's speeches and voting, higher ranking officers of the Haer forces, having a day off, and various Uppers of both sexes in town for the excitement of the fracas to come.

"Beer," Joe said to the bartender.

"Not me," Max crowed. "Champagne. Only the best for Max Mainz. Give me some of that champagne liquor I always been hearing about."

Joe had the bill credited to his card, and they took their bottles and glasses to a newly abandoned table. The place was too packed to have awaited the services of a waiter, although poor Max probably would have loved such attention. Lower, and even Middle bars and restaurants were universally automated, and the waiter or waitress a thing of yesteryear.

Max looked about the room in awe. "This is living," he announced. "I wonder what they'd say if I went to the desk and ordered a room."

Joe Mauser wasn't as highly impressed as his batman. In fact, he'd often stayed in the larger cities, in hostelries as sumptuous as this, though only of Middle status. Kingston's best was on the mediocre side. He said, "They'd probably tell you they were filled up."

Max was indignant. "Because I'm a Lower? It's election day."

Joe said mildly, "Because they probably are filled up. But for that matter, they might brush you off. It's not as though an Upper went to a Middle or Lower hotel and asked for accommodations. But what do you want, justice?"

Max dropped it. He looked down into his glass. "Hey," he complained, "what'd they give me? This stuff tastes like weak hard cider."

A voice said, dryly, "Your companion doesn't seem to be a connoisseur of the French vintages, captain."

Joe turned. Balt Haer and two others occupied the table next to them.
Joe chuckled amiably and said, "Truthfully, it was my own reaction, the first time I drank sparkling wine, sir."

"Indeed," Haer said. "I can imagine." He fluttered a hand. "Lieutenant Colonel Paul Warren of Marshal Cogswell's staff, and Colonel Lajos Arpàd, of Budapest--Captain Joseph Mauser."

Joe Mauser came to his feet and clicked his heels, bowing from the waist in approved military protocol. The other two didn't bother to come to their feet, but did condescend to shake hands.

The Sov officer said, disinterestedly, "Ah yes, this is one of your fabulous customs, isn't it? On an election day, everyone is quite entitled to go anywhere. Anywhere at all. And, ah"--he made a sound somewhat like a giggle--"associate with anyone at all."

Joe Mauser resumed his seat then looked at him. "That is correct. A custom going back to the early history of the country when all men were considered equal in such matters as law and civil rights. Gentlemen, may I present Rank Private Max Mainz, my orderly."

Balt Haer, who had obviously already had a few, looked at him dourly. "You can carry these things to the point of the ludicrous, captain. For a man with your ambitions, I'm surprised."

The infantry officer the younger Haer had introduced as Lieutenant Colonel Warren, of Stonewall Cogswell's staff, said idly, "Ambitions? Does the captain have ambitions? How in Zen can a Middle have ambitions, Balt?" He stared at Joe Mauser superciliously, but then scowled. "Haven't I seen you somewhere before?"

Joe said evenly, "Yes, sir. Five years ago we were both with the marshals in a fracas on the Little Big Horn reservation. Your company was pinned down on a knoll by a battery of field artillery. The Marshal sent me to your relief. We sneaked in, up an arroyo, and were able to get most of you out."

"I was wounded," the colonel said, the superciliousness gone and a strange element in his voice above the alcohol there earlier.

Joe Mauser said nothing to that. Max Mainz was stirring unhappily now. These officers were talking above his head, even as they ignored him. He had a vague feeling that he was being defended by Captain Mauser, but he didn't know how, or why.

Balt Haer had been occupied in shouting fresh drinks. Now he turned back to the table. "Well, colonel, it's all very secret, these ambitions of Captain Mauser. I understand he's been an aide de camp to Marshal Cogswell in the past, but the marshal will be distressed to learn that on this occasion Captain Mauser has a secret by which he expects to rout your forces. Indeed, yes, the captain is quite the strategist." Balt Haer laughed abruptly. "And what good will this do the captain? Why on my father's word, if he succeeds, all efforts will be made to make the captain a caste equal of ours. Not just on election day, mind you, but all three hundred sixty-five days of the year."

Joe Mauser was on his feet, his face expressionless. He said, "Shall we go, Max? Gentlemen, it's been a pleasure. Colonel Arpàd, a privilege to meet you. Colonel Warren, a pleasure to renew acquaintance." Joe Mauser turned and, trailed by his orderly, left.

* * * * *

Lieutenant Colonel Warren, pale, was on his feet too.

Balt Haer was chuckling. "Sit down, Paul. Sit down. Not important enough to be angry about. The man's a clod."

Warren looked at him bleakly. "I wasn't angry, Balt. The last time I saw Captain Mauser I was slung over his shoulder. He carried, tugged and dragged me some two miles through enemy fire."

Balt Haer carried it off with a shrug. "Well, that's his profession. Category Military. A mercenary for hire. I assume he received his pay."

"He could have left me. Common sense dictated that he leave me."

Balt Haer was annoyed. "Well, then we see what I've contended all along. The ambitious captain doesn't have common sense."

Colonel Paul Warren shook his head. "You're wrong there. Common sense Joseph Mauser has. Considerable ability, he has. He's one of the best combat men in the field. But I'd hate to serve under him."

The Hungarian was interested. "But why?"

"Because he doesn't have luck, and in the dill you need luck." Warren grunted in sour memory. "Had the Telly cameras been focused on Joe Mauser, there at the Little Big Horn, he would have been a month long sensation to the Telly buffs, with all that means." He grunted again. "There wasn't a Telly team within a mile."

"The captain probably didn't realize that," Balt Haer snorted. "Otherwise his heroics would have been modified."

Warren flushed his displeasure and sat down. He said, "Possibly we should discuss the business before us. If your father is in agreement, the fracas can begin in three days." He turned to the representative of the Sov-world. "You have satisfied yourselves that neither force is violating the Disarmament Pact?"

Lajos Arpàd nodded. "We will wish to have observers on the field, itself, of course. But preliminary
observation has been satisfactory." He had been interested in the play between these two and the lower caste officer. He said now, "Pardon me. As you know, this is my first visit to the, uh West. I am fascinated. If I understand what just transpired, our Captain Mauser is a capable junior officer ambitious to rise in rank and status in your society." He looked at Balt Haer. "Why are you opposed to his so rising?"

Young Haer was testy about the whole matter. "Of what purpose is an Upper caste if every Tom, Dick and Harry enters it at will?"

Warren looked at the door through which Joe and Max had exited from the cocktail lounge. He opened his mouth to say something, closed it again, and held his peace.

[Illustration]

The Hungarian said, looking from one of them to the other, "In the Sov-world we seek out such ambitious persons and utilize their abilities."

Lieutenant Colonel Warren laughed abruptly. "So do we here theoretically. We are free, whatever that means. However," he added sarcastically, "it does help to have good schooling, good connections, relatives in positions of prominence, abundant shares of good stocks, that sort of thing. And these one is born with, in this free world of ours, Colonel Arpàd."

The Sov military observer clucked his tongue. "An indication of a declining society."

Balt Haer turned on him. "And is it any different in your world?" he said sneeringly. "Is it merely coincidence that the best positions in the Sov-world are held by Party members, and that it is all but impossible for anyone not born of Party member parents to become one? Are not the best schools filled with the children of Party members? Are not only Party members allowed to keep servants? And isn't it so that--"

Lieutenant Colonel Warren said, "Gentlemen, let us not start World War Three at this spot, at this late occasion."

VIII

Baron Malcolm Haer's field headquarters were in the ruins of a farm house in a town once known as Bearsville. His forces, and those of Marshal Stonewall Cogswell, were on the march but as yet their main bodies had not come in contact. Save for skirmishes between cavalry units, there had been no action. The ruined farm house had been a victim of an earlier fracas in this reservation which had seen in its comparatively brief time more combat than Belgium, that cockpit of Europe.

There was a sheen of oily moisture on the Baron's bulletlike head and his officers weren't particularly happy about it. Malcolm Haer characteristically went into a fracas with confidence, an aggressive confidence so strong that it often carried the day. In battles past, it had become a tradition that Haer's morale was worth a thousand men; the energy he expended was the despair of his doctors who had been warning him for a decade. But now, something was missing.

A forefinger traced over the military chart before them. "So far as we know, Marshal Cogswell has established his command here in Saugerties. Anybody have any suggestions as to why?"

A major grumbled, "It doesn't make much sense, sir. You know the marshal. It's probably a fake. If we have any superiority at all, it's our artillery."

"And the old fox wouldn't want to join the issue on the plains, down near the river," a colonel added. "It's his game to keep up into the mountains with his cavalry and light infantry. He's got Jack Alshuler's cavalry. Most experienced veterans in the field."

"I know who he's got," Haer growled in irritation. "Stop reminding me. Where in the devil is Balt?"

"Coming up, sir," Balt Haer said. He had entered only moments ago, a sheaf of signals in his hand. "Why didn't they make that date 1910, instead of 1900? With radio, we could speed up communications--"

His father interrupted testily. "Better still, why not make it 1945? Then we could speed up to the point where we could polish ourselves off. What have you got?"

Balt Haer said, his face in sulk, "Some of my lads based in West Hurley report concentrations of Cogswell's infantry and artillery near Ashokan reservoir."

"Nonsense," somebody snapped. "We'd have him."

The younger Haer slapped his swagger stick against his bare leg and kilt. "Possibly it's a feint," he admitted.

"How much were they able to observe?" his father demanded.

"Not much. They were driven off by a superior squadron. The Hovercraft forces are screening everything they do with heavy cavalry units. I told you we needed more--"

"I don't need your advice at this point," his father snapped. The older Haer went back to the map, scowling still. "I don't see what he expects to do, working out of Saugerties."

A voice behind them said, "Sir, may I have your permission--"

Half of the assembled officers turned to look at the newcomer.
Balt Haer snapped, "Captain Mauser. Why aren't you with your lads?"
"Turned them over to my second in command, sir," Joe Mauser said. He was standing to attention, looking at Baron Haer.

The Baron glowered at him. "What is the meaning of this cavalier intrusion, captain? Certainly, you must have your orders. Are you under the illusion that you are part of my staff?"
"No, sir," Joe Mauser clipped. "I came to report that I am ready to put into execution--"
"The great plan!" Balt Haer ejaculated. He laughed brittlely. "The second day of the fracas, and nobody really knows where old Cogswell is, or what he plans to do. And here comes the captain with his secret plan."

Joe looked at him. He said, evenly, "Yes, sir."

The Baron's face had gone dark, as much in anger at his son, as with the upstart cavalry captain. He began to growl ominously, "Captain Mauser, rejoin your command and obey your orders."

Joe Mauser's facial expression indicated that he had expected this. He kept his voice level however, even under the chuckling scorn of his immediate superior, Balt Haer.

He said, "Sir, I will be able to tell you where Marshal Cogswell is, and every troop at his command."

For a moment there was silence, all but a stunned silence. Then the major who had suggested the Saugerties field command headquarters were a fake, blurted a curt laugh.

"This is no time for levity, captain," Balt Haer clipped. "Get to your command."

A colonel said, "Just a moment, sir. I've fought with Joe Mauser before. He's a good man."

"Not that good," someone else huffed. "Does he claim to be clairvoyant?"

Joe Mauser said flatly. "Have a semaphore man posted here this afternoon. I'll be back at that time." He spun on his heel and left them.

Balt Haer rushed to the door after him, shouting, "Captain! That's an order! Return--"

But the other was obviously gone. Enraged, the younger Haer began to shrill commands to a noncom in the way of organizing a pursuit.

His father called wearily, "That's enough, Balt. Mauser has evidently taken leave of his senses. We made the initial mistake of encouraging this idea he had, or thought he had."

"We?" his son snapped in return. "I had nothing to do with it."

"All right, all right. Let's tighten up, here. Now, what other information have your scouts come up with?"

IX

At the Kingston airport, Joe Mauser rejoined Max Mainz, his face drawn now.

"Everything go all right?" the little man said anxiously.

"I don't know," Joe said. "I still couldn't tell them the story. Old Cogswell is as quick as a coyote. We pull this little caper today, and he'll be ready to meet it tomorrow."

He looked at the two-place sailplane which sat on the tarmac. "Everything all set?"

"Far as I know," Max said. He looked at the motorless aircraft. "You sure you been checked out on these things, captain?"

"Yes," Joe said. "I bought this particular soaring glider more than a year ago, and I've put almost a thousand hours in it. Now, where's the pilot of that light plane?"

A single-engined sports plane was attached to the glider by a fifty-foot nylon rope. Even as Joe spoke, a youngster poked his head from the plane's window and grinned back at them. "Ready?" he yelled.

"Come on, Max," Joe said. "Let's pull the canopy off this thing. We don't want it in the way while you're semaphoring."

A figure was approaching them from the Administration Building. A uniformed man, and somehow familiar.

"A moment, Captain Mauser!"

Joe placed him now. The Sov-world representative he'd met at Balt Haer's table in the Upper bar a couple of days ago. What was his name? Colonel Arpàd. Lajos Arpàd.

The Hungarian approached and looked at the sailplane in interest. "As a representative of my government, a military attache checking upon possible violations of the Universal Disarmament Pact, may I request what you are about to do, captain?"

Joe Mauser looked at him emptily. "How did you know I was here and what I was doing?"

The Sov colonel smiled gently. "It was by suggestion of Marshal Cogswell. He is a great man for detail. It disturbed him that an ... what did he call it? ... an old pro like yourself should join with Vacuum Tube Transport, rather than Continental Hovercraft. He didn't think it made sense and suggested that possibly you had in mind some scheme that would utilize weapons of a post 1900 period in your efforts to bring success to Baron Haer's forces. So I have investigated, Captain Mauser."

"And the marshal knows about this sail plane?" Joe Mauser's face was blank.
"I didn't say that. So far as I know, he doesn't."
"Then, Colonel Arpàd, with your permission, I'll be taking off."
The Hungarian said, "With what end in mind, captain?"
"Using this glider as a reconnaissance aircraft."
"Captain, I warn you! Aircraft were not in use in warfare until--"
But Joe Mauser cut him off, equally briskly. "Aircraft were first used in combat by Pancho Villa's forces a few
years previous to World War I. They were also used in the Balkan Wars of about the same period. But those were
powered craft. This is a glider, invented and in use before the year 1900 and hence open to utilization."
The Hungarian clipped, "But the Wright Brothers didn't fly even gliders until--"
Joe looked him full in the face. "But you of the Sov-world do not admit that the Wrights were the first to fly, do
you?"
The Hungarian closed his mouth, abruptly.
Joe said evenly, "But even if Ivan Ivanovitch, or whatever you claim his name was, didn't invent flight of
heavier than air craft, the glider was flown variously before 1900, including Otto Lilienthal in the 1890s, and was
designed as far back as Leonardo da Vinci."
The Sov-world colonel stared at him for a long moment, then gave an inane giggle. He stepped back and
flicked Joe Mauser a salute. "Very well, captain. As a matter of routine, I shall report this use of an aircraft for
reconnaissance purposes, and undoubtedly a commission will meet to investigate the propriety of the departure.
Meanwhile, good luck!"
* * * * *
Joe returned the salute and swung a leg over the cockpit's side. Max was already in the front seat, his
semaphore flags, maps and binoculars on his lap. He had been staring in dismay at the Sov officer, now was relieved
that Joe had evidently pulled it off.
Joe waved to the plane ahead. Two mechanics had come up to steady the wings for the initial ten or fifteen feet
of the motorless craft's passage over the ground behind the towing craft.
Joe said to Max, "did you explain to the pilot that under no circumstances was he to pass over the line of the
military reservation, that we'd cut before we reached that point?"
"Yes, sir," Max said nervously. He'd flown before, on the commercial lines, but he'd never been in a glider.
They began lurching across the field, slowly, then gathering speed. And as the sailplane took speed, it took
grace. After it had been pulled a hundred feet or so, Joe eased back the stick and it slipped gently into the air, four or
five feet off the ground. The towing airplane was still taxiing, but with its tow airborne it picked up speed quickly.
Another two hundred feet and it, too, was in the air and beginning to climb. The glider behind held it to a speed of
sixty miles or so.
At ten thousand feet, the plane leveled off and the pilot's head swiveled to look back at them. Joe Mauser
waved to him and dropped the release lever which ejected the nylon rope from the glider's nose. The plane dove
away, trailing the rope behind it. Joe knew that the plane pilot would later drop it over the airport where it could
easily be retrieved.
In the direction of Mount Overlook he could see cumulus clouds and the dark turbulence which meant strong
updraft. He headed in that direction.
Except for the whistling of wind, there is complete silence in a soaring glider. Max Mainz began to call back to
his superior, was taken back by the volume, and dropped his voice. He said, "Look, captain. What keeps it up?"
Joe grinned. He liked the buoyance of glider flying, the nearest approach of man to the bird, and thus far
everything was going well. He told Max, "An airplane plows through the air currents, a glider rides on top of them."
"Yeah, but suppose the current is going down?"
"Then we avoid it. This sailplane only has a gliding angle ratio of one to twenty-five, but it's a workhorse with
a payload of some four hundred pounds. A really high performance glider can have a ratio of as much as one to
forty."
Joe had found a strong updraft where a wind ran up the side of a mountain. He banked, went into a circling
turn. The gauge indicated they were climbing at the rate of eight meters per second, nearly fifteen hundred feet a
minute.
Max hadn't got the rundown on the theory of the glider. That was obvious in his expression.
Joe Mauser, even while searching the ground below keenly, went into it further. "A wind up against a mountain
will give an updraft, storm clouds will, even a newly plowed field in a bright sun. So you go from one of these to the
next."
"Yeah, great, but when you're between," Max protested.
"Then, when you have a one to twenty-five ratio, you go twenty-five feet forward for each one you drop. If you
started a mile high, you could go twenty-five miles before you touched ground." He cut himself off quickly. "Look, what's that, down there? Get your glasses on it."

Max caught his excitement. His binoculars were tight to his eyes. "Sojers. Cavalry. They sure ain't ours. They must be Hovercraft lads. And look, field artillery."

Joe Mauser was piloting with his left hand, his right smoothing out a chart on his lap. He growled, "What are they doing there? That's at least a full brigade of cavalry. Here, let me have those glasses."

With his knees gripping the stick, he went into a slow circle, as he stared down at the column of men. "Jack Alshuler," he whistled in surprise. "The marshal's crack heavy cavalry. And several batteries of artillery." He swung the glasses in a wider scope and the whistle turned into a hiss of comprehension. "They're doing a complete circle of the reservation. They're going to hit the Baron from the direction of Phoenixia."

X

Marshal Stonewall Cogswell directed his old fashioned telescope in the direction his chief of staff indicated.

"What is it?" he grunted.

"It's an airplane, sir."

"Over a military reservation with a fracas in progress?"

"Yes, sir." The other put his glasses back on the circling object. "Then what is it, sir? Certainly not a free balloon."

"Balloons," the marshal snorted, as though to himself. "Legal to use. The Union forces had them toward the end of the Civil War. But practically useless in a fracas of movement."

They were standing before the former resort hotel which housed the marshal's headquarters. Other staff members were streaming from the building, and one of the ever-present Telly reporting crews were hurriedly setting up cameras.

The marshal turned and barked, "Does anybody know what in Zen that confounded thing, circling up there, is?"

Baron Zwerdling, the aging Category Transport magnate, head of Continental Hovercraft, hobbled onto the wooden veranda and stared with the others. "An airplane," he croaked. "Haer's gone too far this time. Too far, too far. This will strip him. Strip him, understand." Then he added, "Why doesn't it make any noise?"

Lieutenant Colonel Paul Warren stood next to his commanding officer. "It looks like a glider, sir."

Cogswell glowered at him. "A what?"

"A glider, sir. It's a sport not particularly popular these days."

"What keeps it up, confound it?"

Paul Warren looked at him. "The same thing that keeps a hawk up, an albatross, a gull--"

"A vulture, you mean," Cogswell snarled. He watched it for another long moment, his face working. He whirled on his chief of artillery. "Jed, can you bring that thing down?"

The artillery man was shaking his head. "We could mount some Maxim guns on wagon wheels, or something. Keep him from coming low."

"He doesn't have to come low," Cogswell growled unhappily. He spun on Lieutenant Colonel Warren again. "When were they invented?" He jerked his thumb upward. "Those things."

Warren was twisting his face in memory. "Some time about the turn of the century."

"How long can the things stay up?"

Warren took in the surrounding mountainous countryside. "Indefinitely, sir. A single pilot, as long as he is physically able to operate. If there are two pilots up there to relieve each other, they could stay until food and water ran out."

"How much weight do they carry?"

"I'm not sure. One that size, certainly enough for two men and any equipment they'd need. Say, five hundred pounds."

Cogswell had his telescope glued to his eyes again, he muttered under his breath, "Five hundred pounds! They could even unload dynamite over our horses. Stampede them all over the reservation."

"What's going on?" Baron Zwerdling shrialled. "What's going on Marshal Cogswell?"

Cogswell ignored him. He watched the circling, circling craft for a full five minutes, breathing deeply. Then he lowered his glass and swept the assembled officers of his staff with an indignant glare. "Ten Eyck!" he grunted.

An infantry colonel came to attention. "Yes, sir."

Cogswell said heavily, deliberately. "Under a white flag. A dispatch to Baron Haer. My compliments and request for his terms. While you're at it, my compliments also to Captain Joseph Mauser."
Zwerdling was bug-eyeing him. "Terms!" he rasped.
The marshal turned to him. "Yes, sir. Face reality. We're in the dill. I suggest you sue for terms as short of
complete capitulation as you can make them."
"You call yourself a soldier--!" the transport tycoon began to shrill.
"Yes, sir," Cogswell snapped. "A soldier, not a butcher of the lads under me." He called to the Telly reporter
who was getting as much of this as he could. "Mr. Soligen, isn't it?"

* * *
The reporter scurried forward, flicking signals to his cameramen for proper coverage. "Yes, sir. Freddy Soligen,
marshal. Could you tell the Telly fans what this is all about, Marshal Cogswell? Folks, you all know the famous
marshal. Marshal Stonewall Cogswell, who hasn't lost a fracas in nearly ten years, now commanding the forces of
Continental Hovercraft."
"I'm losing one now," Cogswell said grimly. "Vacuum Tube Transport has pulled a gimmick out of the hat and
things have pickled for us. It will be debated before the Military Category Department, of course, and undoubtedly
the Sov-world military attaches will have things to say. But as it appears now, the fracas as we have known it, has
been revolutionized."
"Revolutionized?" Even the Telly reporter was flabbergasted. "You mean by that thing?" He pointed upward,
and the lenses of the cameras followed his finger.
"Yes," Cogswell growled unhappily. "Do all of you need a blueprint? Do you think I can fight a fracas with that
thing dangling above me, throughout the day hours? Do you understand the importance of reconnaissance in
warfare?" His eyes glowered. "Do you think Napoleon would have lost Waterloo if he'd had the advantage of perfect
reconnaissance such as that thing can deliver? Do you think Lee would have lost Gettysburg? Don't be ridiculous."
He spun on Baron Zwerdling, who was stuttering his complete confusion.
"As it stands, Baron Haer knows every troop dispensation I make. All I know of his movements are from my
cavalry scouts. I repeat, I am no butcher, sir. I will gladly cross swords with Baron Haer another day, when I, too,
have ... what did you call the confounded things, Paul?"
"Gliders," Lieutenant Colonel Warren said.

XI
Major Joseph Mauser, now attired in his best off-duty Category Military uniform, spoke his credentials to the
receptionist. "I have no definite appointment, but I am sure the Baron will see me," he said.
"Yes, sir." The receptionist did the things that receptionists do, then looked up at him again. "Right through that
door, major."
Joe Mauser gave the door a quick double rap and then entered before waiting an answer.
Balt Haer, in mufti, was standing at a far window, a drink in his hand, rather than his customary swagger stick.
Nadine Haer sat in an easy-chair. The girl Joe Mauser loved had been crying.
Joe Mauser, suppressing his frown, made with the usual amenities.
Balt Haer without answering them, finished his drink in a gulp and stared at the newcomer. The old stare, the
aloof stare, an aristocrat looking at an underling as though wondering what made the fellow tick. He said, finally, "I
see you have been raised to Rank Major."
"Yes, sir," Joe said.
"We are obviously occupied, major. What can either my sister or I possibly do for you?"
Joe kept his voice even. He said, "I wanted to see the Baron."
Nadine Haer looked up, a twinge of pain crossing her face.
"Indeed," Balt Haer said flatly. "You are talking to the Baron, Major Mauser."
Joe Mauser looked at him, then at his sister, who had taken to her handkerchief again. Consternation ebbed up
and over him in a flood. He wanted to say something such as, "Oh no," but not even that could he utter.
Haer was bitter. "I assume I know why you are here, major. You have come for your pound of flesh,
undoubtedly. Even in these hours of our grief--"
"I ... I didn't know. Please believe ..."
"... You are so constituted that your ambition has no decency. Well, Major Mauser, I can only say that your
arrangement was with my father. Even if I thought it a reasonable one, I doubt if I would sponsor your ambitions
myself."

Nadine Haer looked up wearily. "Oh, Balt, come off it," she said. "The fact is, the Haer fortunes contracted a
debt to you, major. Unfortunately, it is a debt we cannot pay." She looked into his face. "First, my father's
governmental connections do not apply to us. Second, six months ago, my father, worried about his health and
attempting to avoid certain death taxes, transferred the family stocks into Balt's name. And Balt saw fit, immediately
before the fracas, to sell all Vacuum Tube Transport stocks, and invest in Hovercraft."
"That's enough, Nadine," her brother snapped nastily.
"I see," Joe said. He came to attention. "Dr. Haer, my apologies for intruding upon you in your time of bereavement." He turned to the new Baron. "Baron Haer, my apologies for your bereavement."

Balt Haer glowered at him.

Joe Mauser turned and marched for the door which he opened then closed behind him.

On the street, before the New York offices of Vacuum Tube Transport, he turned and for a moment looked up at the splendor of the building.

Well, at least the common shares of the concern had skyrocketed following the victory. His rank had been upped to Major, and old Stonewall Cogswell had offered him a permanent position on his staff in command of aerial operations, no small matter of prestige. The difficulty was, he wasn't interested in the added money that would accrue to him, nor the higher rank--nor the prestige, for that matter.

He turned to go to his hotel.

An unbelievably beautiful girl came down the steps of the building. She said, "Joe."

He looked at her. "Yes?"

She put a hand on his sleeve. "Let's go somewhere and talk, Joe."

"About what?" He was infinitely weary now.

"About goals," she said. "As long as they exist, whether for individuals, or nations, or a whole species, life is still worth the living. Things are a bit bogged down right now, but at the risk of sounding very trite, there's tomorrow."
The epic exploit of one who worked in the dark and alone, behind the enemy lines, in the great Last War.

We sat, Eric Bolton and I, at a parapet table atop the 200-story General Aviation Building. The efficient robot waiter of the Sky Club had cleared away the remnants of an epicurean meal. Only a bowl of golden fruit remained--globes of nectar picked in the citrus groves of California that morning.

My eye wandered over the scene spread before us, the vast piling of masonry that is New York. The dying beams of the setting sun glinted golden from the roofs of the pleasure palaces topping the soaring structures. Lower, amid interlacing archings of the mid-air thoroughfares, darkness had already piled its blackness. Two thousand feet below, in the region of perpetual night, the green-blue factory lights flared.

On three sides, the unbroken serration of the Empire City's beehives stretched in a semicircle of twenty miles radius. Long since, the rivers that had made old Manhattan an island had been roofed over. But, to the east, the heaving sea still stretched its green expanse. On the horizon a vast cloud mountain billowed upward from the watery surface, white, and pink and many shades of violet.

"That's just the way it looked," Bolton muttered, as he drew my attention to the cloud mass. "See that air-liner just diving into it? Just so I saw the New York--five thousand men--pride of the Air Service--dive into that mountain of smoke. And she never came out! Gone--like that!" And he snapped his fingers.

He fell silent again, gazing dreamily at the drifting rings of pipe smoke. He smiled, the twisted smile which was the sole indication that one side of his face was the master work of a great surgeon-sculptor. A marvelous piece of work, that, but no less marvelous than the protean changes that Bolton himself could make in his appearance. It was this genius at impersonation that had won Bolton his commission in the Intelligence Service, when, in 1992, the world burst into flame.

"Would you like to hear about it?" The obtuseness of the man!

"If you'd care to tell me." I spoke off-handedly. This was like hunting birds on the wing: too abrupt a movement of the glider, and the game was lost.

This is the story he told me, in the low, modulated voice of the trained actor. He told it simply, with no dramatic tricks, no stressing, no climatic crescendos. But I saw the scenes he described, dodged with him through black caverns of dread, felt an icy hand clutch my heart as the Ferret stared at me with his baleful glance; was deafened, and stunned, and crushed by that final tremendous down pouring of the waters.

I was standing--he began--on one of our rafts, watching the installation of a new ray machine. A storm was raging, but the great raft, the thousand feet long, and five hundred wide, was as steady as a rock. We were 700 miles out; the great push of '92, that drove us back to within 150 miles of our coast and almost ended the war, was still eleven weeks off.

Suddenly the buzzer of my radio-receiver whirred against my chest. "2--6--4"--my personal call. "2--2"--"Go to nearest communications booth." "A--4"--"Use Intelligence Service intermitter 4." The secret of that was known only to a half-dozen men in the field. Headquarters wanted to talk to me on a supremely important matter.

There was a booth only a short distance away. I stepped to it and identified myself to the guard. In a moment I was within and had swung shut and sealed the sound-proof door. I set the intermitter switches to the A--4 combination. Not even our own control officers could eavesdrop now. Then I switched off the light, and waited.

A green glow grew out of the darkness. I was being inspected. Headquarters was taking no chances. Out of the green haze before me the general himself materialized. I could count every hair in his grizzled beard. The little scar at the corner of his left eye fascinated me with its distinctness.

I saluted. "Captain Bolton reporting, sir."

"At ease!" General Sommers' voice snapped with military precision. The general was standing in his private office in Washington. I could see his desk in the corner, and the great operations map on the wall. There were new lines of worry in the general's grim face.

He went straight to the point. "Captain Bolton, we are confronted with a problem that must be solved at once. While our information is meagre, the Staff is convinced that a great danger menaces us. Of its precise nature, or how it is to be combatted, we are unaware. I am assigning you to secure the answer to these two questions."
"A week ago there appeared, ten miles east of the enemies' first line, and directly opposite our raft 1264, what seemed at first to be merely a peculiar cloud formation. It rose directly from the surface of the water, and was shaped roughly like half an egg. The greatest dimension, lying along the water, parallel to the battle line, was about 5 miles; the height approximately a mile.

"When two or three days had passed, and no change in the shape or dimensions of the strange mass had taken place, although wind and weather conditions had been varied, we determined to investigate. This was undoubtedly an artificial, not a natural, phenomenon. It was then that we discovered that there was a concentration of defenses along this portion of the front. Our scouts were unable to find any of the usual gaps in either the ray network in the upper air, or the gyro-knife barrier beneath the surface. At the same time, from scouting parties and deserters at other points we learned that rumors are rife throughout the enemy forces of some scheme now on foot that will overwhelm us within a very short time. No details have been given, but so widespread is the gossip, and so consistent, that we have been forced to the conclusion that it cannot be reasonably dismissed as mere morale-supporting propaganda.

"We have secretly developed a method of so equipping aircraft as to render them immune to the enemy death ray. The device is complicated and requires time to manufacture and install. After careful consideration, we decided that the situation was sufficiently grave to warrant revealing to the enemy our possession of this new device.

"The battle-airship New York has been equipped with the new protective equipment. To-morrow at sunrise she will make an attack in force on whatever lies behind that screen.

"Your orders are these. You will proceed at once to raft 1264. You will observe the attack made by the New York. If she fails, you will then find some way to enter that area, discover what is going on behind the screen, hamper or destroy the enemy plans if possible and report back to me personally."

* * * * *

The general's face suddenly softened. His tones lost their military precision. "I am afraid, Captain, that I am sending you to your death. But--we must know what is going on. If the New York fails, the task will appear impossible, but you have already done the impossible."

The grim mask dropped again over the chief's features; again he became the perfect military machine. "You will call on any officer of our forces for whatever you may need. Here is your authority." He stepped aside, and I heard the low burr of the tel-autograph at the side of the screen before me. A moment, and the general was again visible.

"That will be all." Once more the momentary softening. "Good luck, my boy." A final exchange of salutes, and the screen went blank.

I switched on the light. There in the little machine was a slip of paper. I extracted it. The lines of type, the scrawled signature, burned into my brain like letters of fire.

"To: All Officers of the Military Forces of the Americas.
Subject: Military Assistance. Eric Bolton, Captain M.I.S., M.F.A. is authorized to call upon you for any assistance. You will comply with his requests.

Alton Sommers, Lieut. General Commanding M.I.S., M.F.A.
By authority of the Commander in Chief."

In the corner appeared my thumb-print.

I stood there for a long time, mulling the thing over. The Staff was laying tremendous stress on the enemy's strange cloud formation, even to the extent of disclosing the secret of the new defensive device. The Easterners, too, had something novel, something that would cut off absolutely the transmission of ether waves. Nothing either side had yet produced would do that. What was happening behind that screen? Would they break through our defenses at last?

A vision arose before me. Hordes of yellow men, of black, of white renegades from the nations where the red flag waved dominant, pouring over the Americas. The horrors that Britain had undergone, the last European nation to hold out against the Red horde, flashed into my mind. I shuddered. Never. It must not be.

* * * * *

I was hurled from my feet by an electric shock. A great flood of sunlight burst in on me. A corner of the booth, three-foot concrete, had been sheared away, whiffed into nothingness! I arose and dashed into the open. A raid was in progress. The air was electric with the clashing of opposing barrages. The terrible silence of the pitched battles of that war oppressed me. I saw a squad, caught in the beam of an Eastern ray-projector, destroyed. The end man must have been just on the edge of the beams--half his right side lay twitching on the ground. The rest of him, and the seven others, were smoking heaps of blackened cinders.

High over No Man's Land--queer how those old phrases last--a covey of enemy helicopters hung, waiting for the barrage to lift. A black hulk broke the surface of the water, split open: then another. Enemy sub-surface craft. The fight was being waged under water, too. A green mass spilled its contents as it leaped over the waves and fell
back. One of ours.

A huge buzzing came from behind me. A cloud of wasplike forms flew high overhead. It was reserve aircraft, hurrying up from the second line raft, ten miles west.

But this was no affair of mine. I had my orders. I must be in the North Atlantic by daybreak. I looked around. There at the further edge my little Zephyr rested, intact. I hurried to her and sprang into the cockpit. I was off the coast of Chile. Twelve thousand feet would clear the highest range between. I set the height control. Today you don't have to do that, but Mason hadn't perfected his automatic elevator then. The starting indicator was already set for my position. I adjusted the direction disk. The little green light showed that the power broadcast was in operation. I snapped over the starting switch and the whir of the helicopter vanes overhead told me all was well. The machine leaped into the air. Nothing to do now till the warning bell told me I was within a hundred miles of my destination. The battle shot away from me, far below.

Darkness came swiftly. I was shooting into the eye of the sun at three hundred miles an hour. I swallowed a few pellets of concentrated food, then curled up in my bunk. There was no knowing how many hours would pass till I slept again.

I fell asleep at once.

* * * * *

The strident clamor of the alarm bell woke me. Dawn was just breaking. Far below me I could make out the heaving Atlantic, calm and peaceful. A long line of the huge second-line rafts just underneath, stretching north and south till it curved over the horizon. A bugle's clear notes came drifting up to me, reveille. Then I was hovering over my goal, raft 1264. The black rectangle was alive with activity unwonted at this early hour. I took over the controls from the mechanical pilot, sent my recognition signal and drifted downward.

The Zephyr settled on the raft with a soft hiss of the compressed air shock absorbers. A guard came hurrying up. My credentials passed upon, I alighted. Momentarily, it was getting brighter. I was just in time.

I looked eastward, toward the enemy rafts. Beyond them, there it was, just as General Sommers had described it--a mountain of vapor, gleaming white in the gathering light. Not at all disquieting; merely a shifting, billowing cloud mass. Rather pretty. The rest of the sky was clear, unspecked.

As I gazed a line of red fire ran around the edge of the cloud. A violet glow suffused the whole, faded swiftly into pink. The sun was rising. Behind me I heard a huge whirring. Turning, I saw her, just rising, all the beautiful trim length of her. The New York! Pride of our air fleet!

Fifty paces to my right a little knot of officers caught my attention. I recognized Jim Bradley. I remembered, someone had told me he was a major, and was commanding a raft. Good. Jim would work with me as he had in the old days at Stanford U., when I coached the air polo team that he captained. I walked over.

Time for only a hurried handclasp. The signal corps sergeant, earphones clamped to his head, was intoning the airship's messages. "We have reached the thousand-foot level. Will now head for the objective. All well."

We watched her. She was through our barrage-line. A snapped order from Jim restored the barrier, momentarily lifted to let her pass. A curious shimmering blurred the ship's outlines. I called Jim's attention to it. "That's the new device, a network of fine wires, charged with neutralising vibrations. Worked like a charm in the tests. But there's no telling how effective it is in actual service."

* * * * *

A cold shiver ran up my spine. Many a fine ship I had seen strike that invisible network of rays, and puff into smoke. Was that to be the New York's fate?

"We are about to pass through the enemy barrage. All well," came the sergeant's unemotional monotone, repeating the voice in his ears. I knew that voice was being listened to in Washington by a little group whose every shoulder bore the stars of high command. My thoughts flashed to them, gazing breathless at the screen that imaged the very scene before us.

My breath stopped. Now! She must be in it now. The next second would tell the tale. A faint coruscation of sparks ran along the network, but the craft kept steadily onward. Thank God!

"We have passed through the enemy first-line barrage. All well."

A faint whistling of released breath came from all about me. I was not the only one who had agonised at that moment. The first test had been passed; would the other be as successful?

"We are increasing our speed to the maximum. Objective dead ahead. All well."

I saw the ship fairly leap through the sky. Five hundred miles an hour was her greatest speed. Another moment--

"We are entering the cloud. Bow is invisible. All--"
slightly. Twirled again. We were knotted around him, our faces bloodless. He looked up. "The last sentence was cut off sharp, sir. I can hear nothing more. Even the carrier wave is dead."

Jim ripped out an oath, snatched the phones, and clamped them over his own ears. Dead silence.

At last he looked up. "Nothing, gentlemen."

* * * * *

We looked at each other, appalled.

Bradley handed the apparatus back to the sergeant. "Remain here, listening carefully. Let me know at once if you hear anything." The sergeant saluted.

Out there the white cloud billowed and gleamed in the sunlight. But there was something ominous in its calm beauty now.

A thought struck me. I spoke, and my voice sounded flat, dead. "Perhaps it's only the radio waves that are cut off. Maybe she's all right, fighting there inside, smashing them." But I knew that it was all over.

"God, I hope you're right. Five thousand men aboard her." Bradley's lips were white, his hands trembling. "Come to my office, Eric; we'll wait there. To your posts, gentlemen. Each of you will detail a man to watch that cloud bank, and report to me any change in its appearance, even the slightest."

We walked back to the concrete command-post. We didn't talk, though it had been years since we had seen each other. My brain was numbed, I know. I had seen plenty of fighting, watched many a man go to his death in the seven months since the war began. But this, somehow, was different.

An hour passed. Jim busied himself with routine paper work. At least he had that relief. I paced about his tiny office. Already I was making plans. Force had failed. Strategy must take its place. I must get in there. But how?

Bradley looked up from his work, his face grim. "No news, Eric. If you were right we should have heard something from the New York by this time. They're gone, all right."

"Yes, they're gone," I answered. "It's up to me, then."

* * * * *

He stared in surprise. "Up to you? What do you mean?"

"Just that. I'm going in there, God helping." I made sure the room was shut tight against eavesdroppers. Then, briefly as I could, I told him of my orders, showing him the document I had received the day before. He shook his head.

"But it's impossible. Their ray network, and the undersea barrier, are absolutely solid here. I don't think even a mouse could get through. And even if you did get behind their lines, how on earth are you going to get into the area underneath that devilish cloud. You saw what happened to the New York, protected as she was."

"Yes. I know all that. Nevertheless it's got to be done." Just then I got the glimmering of an idea. "Tell me, Jim, are they doing much scouting here. Undersea, I mean."

"The usual one-man shell, radio-propelled. We get one once in a while. Most of them, however, even if we do smash them, are pulled back on the wave before we can grab them. It's a bit easier than most places, though: our depth's only about six hundred feet."

"What! Why, I thought the bottom averaged three thousand all along the line."

"It does. But what would be a mountain ridge, if this were dry land, runs out from the mainland. We're over a big plateau here. It goes on east another twenty-five miles, or so. See, here's the chart."

A warning bell seemed to ring somewhere within me. Had this peculiar formation of the ocean bed anything to do with the problem at hand? But I kept to the immediate step. My plan was rapidly taking shape in my mind.

"What are the scouts--black, yellow, or--"

"Russians, mostly."

"Good. Now listen, Jim. Send down word that the next scout-sub that is caught is not to be ripped, but simply held against the attraction of the return wave. The television eye is to be smashed at once, and radio communication jammed. Can you do it as if something had happened to the shell?"

"Sure thing, but what's the big idea?"

"You'll see. I've worked the thing out now."

Just then a red light on Bradley's desk winked three times. "There's one between the lines now!" he exclaimed.

"Quick, man, shoot my orders down."

He pressed a yellow button and spoke quietly but emphatically into a mouth piece. "O.K. They understand."

"Now take me down."

He looked at me as if I had taken leave of my senses, but complied.

* * * * *

The door of the elevator that lowered us from the surface clanged open. We stepped out on a balcony that ran around a large, steel-lined room. The walls were dripping, and on the floor, twenty feet beneath, a black pool
sloshed about with the heaving of the raft, in whose interior we were. Rubber-clad soldiers moved about in the blue
glow of the globes sending down their heatless light from the ceiling. One sat at a desk near the elevator. As I spied
him a green light glowed in front of him twice.
"They've got him, sir, bringing him in."
A low-toned order. The soldiers sprang to their post. A whirring signal. At the other end of the room the steel
wall began to move upward, and water rushed in. A tremendous vibration shook the chamber: a ponderous thudding.
The water rose to the level of the balcony and stopped. I looked at Bradley.
"We're beneath the surface, aren't we?" I asked. "How is it that the water doesn't fill the room?"
"Pumps," he replied. "Tremendous pumps that draw the water out just as fast as it comes in, and shoot it out
again into the sea. We can maintain any desired level in here."
Then I noticed that the black flood was rushing by beneath me at a terrific rate.
Something bulked in the opening. Two tiny subs drew in, a black and a green. The steel wall rushed down
again, and the vibration ceased. From the green craft heavy grapples extended, clutching the black, enemy scout. I
saw a gaping hole in the black boat's nose, where its eye had been smashed.
Men were clambering over both vessels' hulls, tugging at the hatchway fastenings. The black one flew open. I
leaped to the deck. Bradley after me, and jumped down into the hold.
In the little cubby-hole that was all the machinery left space for, a pale-faced form in green-gray crouched
against the wall. His eyes stared in fear. A Russian, praise be. And not far from my size and build.
"Off with his clothes, quick!" I yelled, stripping mine as I spoke. Bradley looked at me queerly, and shrugged
his shoulders. "Quick, man! Everything depends on speed!"
He shook his head, as one who listens to the vaporings of an imbecile, but turned to obey. I was standing there-
naked, studying the Easterner's face, his body. No scars. Good.
* * * * *
Jim turned to me, the prisoner's clothing in his hands. An exclamation burst from him. He looked back at the
trembling Russ, then at me. "My God, Eric, how did you do it?" he asked.
I smiled. "All right, is it?"
"You're his twin; no, you're himself! If I'd had a drink to-day I'd be sure I was seeing double. How on earth--
you had no make-up, no time--"
I was sliding into the Red's gear as I talked! "I've trained all the little muscles in my face--muscles you others
don't even know you have. Started when I was a kid, then made a good living at it, acting. Comes in handy now,
darn handy. I can make anything of my face, and hold it forever if I have to. Chink, Russ--anything. Distort my
limbs too, and change my voice. That won't be necessary now. Simple, but it takes a lot of practice."
I was dressed by then, a counterpart of the enemy officer--I hoped. If I wasn't--well, I wouldn't live much
longer.
"Now, out with the Russ and my clothes. Don't leave a bit, if you value my life."
A light of comprehension illumined Jim's face. "You're going to pass yourself off as this man? You've got your
nerve with you!" he exclaimed.
"Exactly." The cubby-hole was clear now. "Now take that spanner, and bang me over the head. Not too hard; I
don't want a cracked skull, only a splashed scalp. Then pile me where it will seem I crashed against a projection of
some kind when the grapples took hold. That bunk edge will do. Batten the hatch, and cast off the grapples. I hope
their automatic control is still working, otherwise my scheme's gaffooey."
Jim stuck out his great paw. "Good luck, Eric," he said, simply. Then he clutched the spanner. I saw it go over
my head....
* * * * *
Voices around me, harsh, guttural voices. Russian! By the Nine Dogs of War, I had pulled it off! But what were
they saying? I was inside the lines, but was my deception successful? Or had my face relaxed with the shock of the
blow? I thanked my Russian grandmother then for all the time she had spent teaching me her mother tongue.
"Boszhe moi, the poor fellow must have had an awful smash. He hasn't come to yet."
"The doctor will be here in a minute. He'll revive him."
I breathed a prayer of gratitude. They didn't suspect! But I didn't like this doctor business. Well, I'd have to stall
through that as best I could.
I seemed to be lying on hard rock. I opened my eyes, staring blankly, straight up. A bearded face was bending
over me, the captain's crossed sickles on the shoulder straps just within my vision. Behind, and above him, towering
straight up--my God!--what was it? A green wall, a vertical green wall, going up and up! It looked like--but no: how
could water stand straight up like that, for hundreds of feet?
I almost betrayed myself with a gasp! A dim bulk showed in the translucent depths of the wall. It rushed toward
me, took form. A fish, a huge, blind fish, its cavernous mouth stretched wide. It came straight for me, just above. In a second it would leap through. A scream of terror trembled in my throat. Then it hit the edge of the translucent green wall—and vanished! Was I dreaming? Had Jim hit me too hard?

Something stirred in the back of my mind. I sensed dimly that here lay the explanation of the disappearance of the New York, the very mystery that I had come to solve. Almost I had it; then it slipped away.

* * * * *

"Here's the doctor!" someone said. There was a little stir of activity about me. I allowed my eyes to close, as if in utter weariness.

"What's all this? What have you got here?" A gruff voice, intolerant.

"One of our sub-sea scouts, sir. Just come back, after some delay. Her eye was smashed, and there are grapple marks on her. Must have been caught, and then slipped away. She was leaking badly. We got her through the lock just in time." Jim had evidently added a few touches of his own. "Comrade Pauloff seems to have been seriously injured. He's got a bad cut on his scalp, and was unconscious till a moment ago. Opened his eyes just as you came along."

"Hm. Let's see." I felt a none too gentle hand finger my wound. It throbbed maddeningly. The doctor spoke again. "A nasty crack, but no fracture. Here, you—wake up." I made no move. "Come on, wake up!" I heard the plop of a cork being drawn from a bottle; a pungent odor assailed my nostrils, choked me. I writhed, pulled at the hand holding the bottle to my nose and opened my eyes.

"That's better. How do you feel now?"

I raised a hand to my injury and muttered, in Russian. "Hurts, papashka." I kept my expression as blank, as uncomprehending, as I could.

The doctor flashed an understanding glance at the captain, then turned back to me. "What's your name?"

Memories of my grandmother's tales of her youth came flooding back to me. "Pavel, son of Pauloff."

It was the formula of the Russian student, in his teens.

"Your rank?"

"Second year. Petrovski Gymnasium."

The physician turned away. "No use bothering him now. A clear case of amnesia. He's been thrown back to his high school days. I've had a number of cases like that among your scouts lately."

Blessed inspiration! "Only cure is rest. Get him over to the infirmary. We'll evacuate him to a base hospital tomorrow."

* * * * *

I was in a cool white bed, in a low ceilinged room, white painted. There were other beds, vacant. A uniformed male nurse pattered around. There was an elusive green tinge to the light that poured in through the one window.

The door opened and a sergeant came in. "Comrade Alexis!"

"Well, what is it now? Have they found another gold-bricking officer to mess up my clean beds?"

"A party from corps headquarters will be here in fifteen minutes for inspection."

"Let them come. They won't find any specks of rust on my instruments, like they did on Comrade Borisoff's."

"They'd better not. You know what happened to him."

"Yeah. Chucked into the ray. Well, he didn't give the burial squad any work." And the two laughed, a laugh that had more than a hint of sadistic cruelty in it. "If I had my way," the nurse went on, "I'd do the same with all these nuts that come back from the scout ships raving of home and mother. It's my idea that they're all bluffing. It's a good way to be shipped to the rear, where the captured dames are. Say, did I tell you about the last time I was on leave—"

The two whispered, their heads close together. My brain was working frantically. Things had gone well so far, but I had to get out of here before the morning, or I'd be sent to the base and lose all that I had gained by my daring.

The door snapped open. "Smirnow!" (Atten-shun!)

* * * * *

I was on my side, facing away from the wall. I remained so, staring blankly across the room. I hoped the inspection would be over quickly. The fewer the enemy officers I had looking me over, the better. Someone back there was snapping questions. That voice—where had I heard it before?

"Your patient. What's his trouble?"

"Amnesia, sir. One of the scouts."

"Oh, yes. Let's look at him."

Someone was walking across the room, then standing above me. His hand was just at the level of my eyes—a hand with the little finger twisted queerly into the palm. I knew that hand: it was the Ferret's! A cold shiver ran up my back. I almost stopped breathing.

Of all the infernal luck in the world, to have the Ferret walk in here! He was chief of the Red's Intelligence
Service, the shrewdest, sharpest, cruelest of them all. Many of our best men had gone west because of his uncanny instinct for piercing disguise. They said he could smell an American. And many of our most strictly guarded plans had been smashed through his infernally clever spying. Only a month before I had him in my clutches; saw the very rope around his neck. But he had slipped away, and left me empty-handed and kicking myself for an ass.

I held my breath as I felt those gimlet eyes of his boring into me. Would he sense who I was? Surely he could hear the pounding of my heart. How long he stood there I don't know. I tautened, waiting for him to call out, determined to sell my life as dearly as I could.

But for once the Ferret was fooled. He turned away. "Take us into your kitchen," he snapped at the nurse, then there was the tramping of feet and the slamming of a door.

* * * * *

The breath whistled from me in relief. I turned cautiously. I was alone. Now was my chance. I jumped from the bed and started toward the window. Once out, I'd find some place to hide. I let my face relax; there was no use for that particular disguise any longer. The window was up. I was on the sill. Another second and I'd be out in the open.

"Just where do you think you're going?" came the Ferret's silky, cruel voice. I whirled. There he was, just inside the door. His little black eyes glinted dangerously over his hooked nose and sharp chin.

"Oh--Bolton! Something made me turn back. Glad to see you."

His hand flashed to the ray-tube in his belt. At the same moment I left the window sill in a desperate leap. Clear across the room I sprang, and before he had time to pull his weapon I had one hand clamped around his wrist, the other clutching his throat. We crashed to the ground.

I was in pyjamas, barefooted, he fully clothed. His leather shoes drove into me viciously, even as his face turned purple. The pain was excruciating, but I dared not cry out. His left thumb found my eye, was digging in.

The crash of our fall must have been heard outside; another moment and all would be lost. I was momentarily on top as we rolled across the floor. With a supreme effort I pulled his head away from the floor, then crashed it down. He slumped; lay still.

The door knob was turning as I jumped frantically through the window. I heard a cry behind me. Rough, uneven ground. No one about. To my right was a rocky cliff, and at its base what looked like the mouth of a cave. Any port in a storm: I dived into it.

* * * * *

I crouched there, panting. It was beastly cold, and the dampness struck into my bones. I shivered, then laughed grimly. I wouldn't shiver long. When the Ferret came to and revealed that Eric Bolton was around, there wouldn't be a stone left unturned till I was found. Those birds had good cause to want me rubbed out.

Already I could hear faint shouts from without. The chase was on. I was caught, right enough. Trapped like any rat.

I felt around me in the darkness and my hand lighted on a round stone. It just fitted my fist. Well, I'd get one of them, anyway, when they found me. Cold comfort in that, but I didn't feel like giving in tamely.

Footsteps sounded out at the tunnel end. So soon! I gripped my rock tightly, and waited.

But—it sounded like only one man. I drew myself together. Maybe I had a chance. A dim glow showed where the passage curved, then a disk of light flashed on the wall and flitted about. The fool!

The steps came on, slowly, stumblingly. The disk of light grew smaller as its source drew nearer. Then he was around the corner, bulked for a moment against his own light as it was reflected from the wet wall. That moment was enough! The stone left my hand with all the force I possessed. It went straight to its mark: a sickening thud told me that. The form dropped, and the flashlight clinked on the rocks.

I listened. Still the shouts from without, but no steps inside. I was safe for a time. But the searcher would surely be missed, and others would come looking for him. I had only one chance. I shrugged my shoulders. I couldn't lose anything. If I stayed here my goose was cooked.

By the light of the flashlight I examined my quarry. A renegade Frenchman, apparently. A private. In a trice I had his uniform on me and had twisted my features to match his. Little did I think when I acted under the Klieg lights that the fate of two continents would some day depend on this gift of mine.

He stirred; groaned. I hesitated. Then—well, I couldn't chance his crawling out. His ray-tube was newly charged. I left a heap of ashes there as I walked away....

* * * * *

I was outside the cave. I darted a glance around. My refuge was not the only hole in sheer rock; it was literally honeycombed. From one, then another of the cavern mouths a soldier emerged. Each strode across the uneven, rocky plain to where an officer stood with what was apparently a map in his hand. As each searcher saluted and reported,
the officer made a mark on the map. Someone came out from the cave-mouth next to mine. I fell in behind him.

"No one in cave twenty-one, sir."

"To your post."

The private turned on his heel and marched off to take his place in a company formation that was rapidly taking shape near by. My turn was next. What was the number of my cave? A mistake now, and I was through.

I saluted. "No one in cave twenty, sir."

"To your post."

Had I hit it? When the final check-up came would there be two reports for one cave, none for another?

A front rank man moved aside. Good: that meant my place was just behind him. My luck was holding. And never did a man need luck more!

Now was my first chance to look about, to discover what sort of place this was. It was an oval plain, roughly a mile wide by five miles long. Buildings, squat structures of corrugated iron, were scattered here and there. In the distance, to my left, what seemed a great hole in the ground glowed; a huge disk of light.

Dry land, here, where there should be nothing but a waste of waters!

* * * * *

Puzzled, I strained to see what bordered the plain. It was a tall cliff, running all around, and towering high in the air. But it wasn't rock, for it glowed strangely green in the flood of light that illumined the place. And it was clean cut, rising sheer from the unevenness of the ground.

Then I remembered. The vertical green wall that soared above me as I lay dazed from Jim's blow. The translucent green wall in whose depths I had seen the blind fish rushing toward me. Water! The sea! Impossible!

There were scientific miracle-workers in the enemy's ranks, but they couldn't have hollowed out a pit such as this in mid-ocean; forced back the very ocean to create this amphitheatre, this dry plain on the Atlantic's very bottom: held back the unthinkable weight of Earth's waters by a nothingness. Incredible!

Yet the accomplished fact stared me in the face.

My eyes traveled up that impossible wall. It must have been at least six hundred feet high. At its summit, in a murky haze that heaved and billowed, I made out strange, dim bulks that hung, unsupported. A long line of them, a long ellipse following closely the curving of the cliff. Underneath the nearest, barely perceptible, I could make out a lens-shaped cage of wire. I began to understand.

Overarching everything was a great dome of heaving cloud.

"Smirn-ow!"

The long line snapped into immobility.

"By the left flank, march!"

We were moving, marching. Then my ruse had succeeded. I had chosen the right cave number. I breathed a sigh of relief.

* * * * *

The command for route order was given, and at once a buzz of talk broke out around me. "Damn them, they're sending us right off to work! We missed our mess, hunting for that damned spy. But that don't mean anything. It's back to the tunnel for ours."

"Oh, quit your bellyaching, Andreyeff. Another week, and we'll be in New York. Just think of it, the richest city in the world to loot! And women! Why, they tell me the American women are to the Frenchies and the cold English-women as the sun is to the stars. What's a meal more or less when you think of that?"

An obscene laugh swept through the ranks. Guttural voices boasted of past exploits--black deeds and sadistic cruelties that had marked the trail of the hordes sweeping over Europe from the windy Asiatic steppes.

As we marched, I noticed a peculiarity of the rocky floor. There were no sharp edges, no sudden cleavages in the uneven terrain. It looked, for all the world, as though the stone had been melted, then frozen again in a moment. An unbelievable pattern was forming itself in my mind. If what I thought were true--!

The command came to halt.

We had reached the blazing disk I had seen from afar. It was a tremendous shaft, dropping straight into the very bowels of the earth. Two hundred feet across, a blinding glare streamed up from the pit. From far beneath came shoutings, the clank of machinery, a growling roar.

Other companies marched up and halted at the pit edge. My outfit were whites--Russians, French, Germans. But the others were black, brown, yellow--all the motley aggregation of races that formed the Red cohorts, the backbone of the Great Uprising. As the "At ease" order snapped out a babel of tongues rose on the air. Every language of Earth was there save English. The Anglo-Saxons had chosen tortured death rather than submission to the commands of their conquerors.

A huge platform rose slowly up in the shaft and came to a stop at the ground level. It was solidly packed with
another throng of soldiers in the gray-green of the enemy. They marched off and we took their place.

* * * * *

Down, down, we went, till it seemed that our destination was the center of the earth. Louder and louder grew
the growling roar, the ponderous thud and clank of huge machines.

We were in a huge chamber, hallowed out of the solid rock. Thousands of men bustled out among great piles of
lumber and steel rails. Huge cranes rolled here and there, swinging their ponderous loads. Officers shouted crisp
orders. Green-uniformed privates sprang to obey.

But no time was given me to get more than a glimpse of all this activity. From out the gaping mouth of a
hundred-foot-wide tunnel a long train of flat cars came gliding. It halted and swayed on the single rail, and the whir
of the gyroscopic balancers filled the cavern. A sharp order, and my companions leaped for the cars, lay prone on
the steel car-beds, and passed their belts through projecting loops. I wondered, but imitated them. I buried my face in
my arms, as the others were doing.

There came the eery shriek of a siren: the train was moving. Swiftly it gathered speed till it seemed as though
my protesting body was being forced through a wall of air grown suddenly solid. Myriad fingers pulled at me, seeking
to hurl me to destruction. Even through my protecting arms my breath was forced back into my lungs, choking me.
The wind howled past with the wail of a thousand souls in torment.

Just as the limit of endurance was reached the terrific speed slackened, and the long train ground to a halt. "All
off! Lively now!" came the command.

* * * * *

We were at the rail-head, and before me was the face of the tunnel. Queer, hooded figures were there bending
over wheeled tripods, manipulating what appeared to be searchlights. But no shafts of light leaped from the lenses.

The tripods were rolling steadily forward.

I looked at the tunnel face again, then, startled, back to the hooded men. I rubbed my eyes. Was I seeing things?
No, by all that was holy, it was so! The distance between the machines and the end wall of the passage had not
changed, but men and rock were ten--fifteen--twenty feet away! They were boring; boring into the solid rock at
tremendous speed. And the rock was melting, vanishing, disappearing into nothingness in the awful blast projected
from those machines!

I gaped--my pose, my danger, forgotten. Almost as fast as a man could run, the tunnel extended itself. It was
phantasmal, incredible!

A rough hand seized me from behind. I whirled, my heart in my mouth. It was the burly sergeant. "What the
hell are you dreaming about, Renaud? Hop to it. Over there, on that shoring job. Get busy now, or--" The threat in
that unfinished sentence chilled me by its very vagueness.

My squad was hauling heavy timbers, setting them up where a fault showed in the rocky roof of the tunnel. I
joined them but my thoughts were a madly whirling chaos.

The pattern was complete now. The long, curving under-water ridge on Jim's chart--this tunnel was boring
through it. Whatever it was that those tripods projected--a new ray it must be--it was melting a passage six hundred
miles long. Under our rafts, under our fleets, under our coast defenses--to come up far behind our lines. The ridge
joined the coast just south of New York. Some night, while our generals slept in smug complacency, all that gray
green horde of wolves would belch forth--from the very earth.

And the Americans would follow Europe into hell!

* * * * *

Five minutes passed. I looked again at the face of the tunnel, drawn by an irresistible fascination. It had
advanced a full quarter of a mile. Like fog before a cloud-piercing searchlight, the age-old rock was dissolving
before the ray. At this rate America's doom would be sealed in a week. And I, alone among these thousands, was
helpless to avert the climaxing menace.

A howl of rage came from the sergeant. I turned. A diminutive German, his face pale green with fatigue, had
stumbled and fallen under the weight of a heavy timber.

The swarthy non-com was kicking him with a cruel boot. "Get up, you; get up before I brain you!"

The sprawling man looked up, fear staring from his deep-sunk eyes. "Aber, ich bin krank."--"I am sick; I can't
stand the work; it is too schwer, too heavy," he faltered.

"Sick?" the Russian roared. "Sick? I'll sick you! You're lazy, too damned lazy to do a little work. I'm tired of
this gold-bricking around here. I'm going to make an example of you that the rest of you dogs won't forget in a
hurry." His face was purple with rage. He bent, seized the fallen man and dragged him out from under the crushing
bulk. Then, raising the struggling wretch over his head as lightly as though he were an infant, he ran forward, toward
the ray projectors.

Shriek after shriek pierced the hot air, such howls of utter fear and agony, as I hope never to hear again. The
little figure, held high in the huge paws, writhed and tossed, to no avail.

The sergeant reached the nearest tripod. His brawny arms flexed; straightened. The German swept up and over the head of the operator, and dropped in front of the machine. Then--he vanished. Nothing, absolutely nothing, was there between projector and rapidly retreating wall!

A horrible retching tore my stomach; I swayed dizzily. The utter brutality, the finality of the thing! "And any more of you carrion that I catch slacking will get the same thing," the Russian said. "You, Renaud, I've got my eye on you. Watch out!" The sergeant's voice rasped through the mist about me. I shoved my shoulder under one end of an eight by eight and plunged into the back breaking labor. But one thought hammered at my reeling brain: "The New York! That's what happened to her!"

* * * * *

The long hours of toil at last ended. We were again in the entrance cavern, waiting for the elevator platform. It was unaccountably delayed: the last batch had gone up fifteen minutes before. The men about me chafed and swore. They were impatient for mess and bed.

Bit by bit I had reconstructed all the elements of this unprecedented operation. The ray, the blasting ray that whiffed into non-existence all that it touched, was the keynote. The great plain had been cleared by the ray. The dim shapes floating high in that far-circling ellipse were pouring down the dreadful vibrations, thus holding back the sea in a marvelous green wall. I remembered the sea-monster that had dashed at me and vanished. That proved it. The dome of cloud was camouflage, or the product of the processes of destruction going on underneath: it didn't matter. What mattered was that it was interlaced by a network of ray beams. It was an impenetrable wall, a perfect defense. BOXED in on all sides by such a barrier, how was I to get out word of the menace? How was it to be combated even if our forces knew of the danger? A hundred plans flooded my wearied brain, to be rejected one by one.

A mocking, ribald cheer arose from the men around me. The platform was ascending. Why the long delay? A premonition of disaster chilled me. I shrugged it aside.

We were at the top. A long line of soldiers curved about the mouth of the pit. The next shift waiting to go down? No--they made no move to approach. And each one was holding his ray-tube at the ready. This was the guard. At a table nearby a knot of officers was gathered. Papers of some sort were piled high on it. Again the icy finger of dread touched me. One of the officers moved aside, revealing the profile of his companion. The Ferret. Then I knew I was done for!

My eyes darted here and there, seeking escape. No hope--the heavily armed guard was all around; the platform blocked the shaft mouth. A dash would be self-betrayal--suicide.

* * * * *

Mechanically I obeyed the sergeant's barked commands. We were in single file. We were moving toward that ominous table where the Ferret stood, a sardonic smile on his sharp-featured face. I could make out a livid weal across his throat. I had left my mark on him. That was some satisfaction.

The head of the line reached the table. They were fingerprinting the leader! A lieutenant extracted a paper from the pile and handed it to the Ferret. He made momentary comparison of something on the paper with the mark the soldier had just made. Then the next man stepped up, while the first made off across the plain.

Of course! Simple: how very simple! And yet it had caught me! The service records of the men had their fingerprints, just as in our own forces. And each man in the area was being checked up. Trust the Ferret to think of that. He knew that I'd be somewhere in their ranks, impersonating one of their men. Well, I was in for it. The last trick in our long game was his.

My turn. No use going through the motions. I bent down a moment, then straightened. "Oh, hello, Bolton," the Ferret said, thrusting out his hand, the one with the twisted finger. I had resumed my own visage. "Didn't think you could get away with it, did you?"

Chagrined as I was, I put a good face on it. The Ferret and I had run up against each other many many times. Cheerfully, either of us would have cut the other's throat. But--we played the game.

"Hello, Rubinoff," I responded. "You seem to have me, just now. But try and hold me."

The Ferret threw back his head and laughed. "Oh, I think you'll find it a little difficult to get away this time." I thought so, too, but did not voice my thought.

The smile left Rubinoff's face. He snapped an order. A squad advanced from the guard. Handcuffs clicked around my wrists, the mates of each were fastened to the arms of two guardsmen. I was securely chained. They were taking no chances.

"Take him to the special cell in the guard-house." The lieutenant saluted. I was marched off. Then I was not to be summarily executed. I was not as much relieved as you might think. You see, I knew the Ferret. We had raided one of his hangouts once; just missed him. But we found an M.I.S. man there whom Rubinoff had been--questioning. We thanked God when he died.
We tramped across the plain. My eyes kept roving about: there wasn't much hope for me, but miracles have happened. Most of the scattered structures were hastily thrown together sheds of sheet iron. Barracks, they looked like. But, every so often I spied spheres of concrete, the wide open doors revealing yard-thick walls. What could be their purpose?

Something bothered me. Something about the ray projectors and the other machinery I had seen. I glanced up at one of the balloons floating high above. All these needed a power supply; tremendous power to accomplish what the ray was doing. And there were no cables running to them. How did the power get to them?

There was only one answer. Radio transmission. The required energy, perhaps the very ray vibrations themselves, were being broadcast to the points of projection. That meant a power-house and a control room somewhere in the area. The vulnerable points! Where were they?

I stumbled, and was jerked roughly to my feet. The lieutenant slapped me. "Scared, Americansky? You well may be. We'll have rare sport when they throw what the Ferret leaves of you into the ray." I shuddered. To go out that way! I'll be honest--I was horribly afraid. The men to whom I was shackled laughed.

A dull throbbing beat at my ears, a vibration just too low to be sound. I looked about for its source. It came from my left--a concrete building, low lying, about a hundred yards long by as many feet wide. At the further end a squat smokestack broke the flat line of the roof. Guards, many guards, were pacing their slow patrol about it. From the center of the side nearest me, cables thick as a man's trunk issued forth. I followed them with my eye. They ended in a marble slab on which rested a concrete sphere, somewhat larger than the others. The door of this one was closed. On the roof of the queer edifice was a peculiar arrangement of wires, gleaming in the artificial daylight. This building, too, was heavily guarded.

I had found what I sought--the power-house and the transmitting station. Much good it did me--now.

My warders turned sharply to the right. I glimpsed another concrete structure. A heavy steel door opened, then clanged shut, behind us. The fetid odor that means only one thing the world over, folded round me.

I sprawled on the steel floor of the cell into which I was thrust. The dim light filtering in from the tiny air-hole high up on one wall showed me that I was still alone. I lay, listening. There it was again, a wailing scream of agony that rose and fell and died away.

I heard a grating sound at the door, and it opened and shut. Rubinoff, the Ferret, had entered. "Comfortable, Captain Bolton?" he asked, and there was more than a hint of mockery in the velvety voice. In the hand with the twisted finger was his ray-tube. It pointed steadily at me.

I got to my feet. I was in no mood for trifling, for that scream had shaken me. "Cut the comedy, Rubinoff." I growled. "Kill me, and let's have done with it."

He raised a deprecating hand. "Oh, come now. There's really no absolute necessity for that. You can save yourself, very easily."

"What do you mean?"
"I can use you, if you're amenable to reason."
"I don't understand."
"You're the cleverest of the American Intelligence men. The rabble they give me are well-nigh useless. Cast your lot in with us, and in a week you'll have the riches of your greatest city to dip your hands in. It's easy. There is certain information we need. Give it to us. Then I'll get you back into your lines: we'll cook up a good tale for Sommers. You can resume your post and send us information only when it is of extreme importance. Come, now, be sensible."

At first blush this was an astounding proposal. But I knew my man. He needed to know something. Once he had extracted the knowledge he sought from me, I should be disposed of. He'd never let me get back into our lines with what I had found out. It might have been policy to play him--but what was the use?

"No, Rubinoff. You know I won't do it."

He sighed. "Just as I thought. Honor, country, and so on. Well, it's too bad. We should have made a wonderful team. However, you'll tell me what I want to know. What are the defenses within fifty miles of New York?"

I laughed derisively.
"You'll save yourself a lot of trouble if you tell me, Bolton. After all, death in the ray isn't so bad. Whiff--and
you're gone. Don't force me to other measures." There was a grim threat in his voice. But I simply shook my head.

"Stubborn, like all the other Anglo-Saxons. Well, I've got something to show you." He raised his weapon and glanced at it. "Pretty little thing, this. Not the ordinary ray-tube. Only field officers have these. Look."

He pointed it at the wall from behind which that scream had come and pressed the trigger button. A tiny round hole appeared in the steel.

"Neat, isn't it? Utilizes the same ray you saw at work in the tunnel. The Zeta-ray we call it. Just think what that would do to human flesh." I said nothing.

"But that isn't what I had in mind. Just look through that hole."

I wanted to see what was on the other side, so I obeyed. The Thing that lay on the floor within--could it ever have been a man? I whirled back to the Ferret in a fury, my fists clenched.

His infernal weapon was pointing straight at me. "Softly, Bolton, softly. You'd never get to me." I checked my spring, for he was right. "How'd you like that?" he purred.

"Some of your work, I suppose," I growled.

"The poor fool was fomenting a mutiny. We wanted to know the other plotters. He was stubborn. What would you? Necessity knows no law.... What are the defenses around New York?" He advanced menacingly.

No answer.

"Why be a fool? This ray hurts, I tell you, when it's properly applied. How would you like to be melted away, piece by little piece, till you're like that in there?"

I shrugged my shoulders, but kept silent.

"I tell you it hurts. You don't believe me? That in there is unconscious, seven-eighths dead. Listen."

He bored another hole in the steel, keeping his finger pressed on the trigger. Again that heart-rending scream of agony rang out, tearing its way through me. My brain exploded in red rage. I leaped for the fiend, reckless of consequences. My fist drove into the leering face with all the force of my spring, with all the insane fury that his heartless cruelty had roused in me. Smack!--he catapulted across the floor and crashed into the wall! I was on him, my hand clutching for his tube. But there was no need. He was out--dead to the world. So sudden, so unexpected was my mad attack that even he had not had time to meet it.

I worked fast. In a minute I was in Rubinoff's uniform and had assumed his face. I was a little taller; no matter. But the finger--that would be noticed immediately. There was only one thing to do. I stuck my little finger through one of the holes he had made in the wall and twisted. Crack! Beads of agony stood out on my forehead, but the break was just right. By bending the other fingers slightly I could hold that one in just the position of his.

I picked up the ray-tube with my left hand. If I went out through the guard-house entrance I might meet other officers and be engaged in conversation. That might lead to discovery. My cell was on the side of the prison away from the road; I'd chance it. Luck had been with me so far.

I carved out a hole in the wall pierced by the air-hole. It was like cutting through butter with a red hot knife. I stepped out.

There was no one about. I walked carefully around the corner of the building, my hand, holding the tube, buried deep in my pocket. Not far away was the spherical structure I had spotted as the control room. I returned salutes. No one stopped to talk to me. Would the guard before that building require a pass-word?

I heard a shout behind me. My escape was discovered! At once I broke into a run and dashed past the guard, shouting: "Prisoner escaped! Came this way!" The man gaped. The shouting behind me grew louder. I heard the thud of many feet, running. I flung open the door, slammed it shut behind me, and turned the key.

A long row of giant electrode bulbs, as tall as a man, stretched before me--the source of the Zeta-ray. From here came the power that held back the waters, that bored the tunnel. A thunderous knocking shook the door. Someone at a huge switchboard turned toward me. Instantly my hand was out of my pocket, and the ray-tube leveled at the nearest bulb. I pressed the trigger. The bulb crashed. I swept down the line. Crash, crash, crash--they were all gone.

I whirled to meet the expected attack. It was wholly instinctive, for in a second we'd all be dead anyway. The waters would be down on us.

But the switchboard operator wasn't springing at me. Instead, he was tugging frantically, at a long lever that came down from above. There was a clang, and a steel shutter dropped across the door.

Then came a sound of crashing thunder that split my eardrums with its unbearable clamor. Then a mightier roar, as the mountain-high sea, held back so long by the invisible ray, poured its countless millions of tons of deep green water down into the man-made hole.

The impact was terrific. The yards-thick concrete shuddered and strained. The tremendous pressure forced
trickles of water into the concrete shell: the roaring of the elements was indescribably deafening.

I was in pitch darkness, expecting every moment to be crushed under miles of ocean, when suddenly I was thrown from my feet. The floor was heaving drunkenly beneath me. In a moment I was slammed breathlessly against the shattered remnants of a huge vacuum tube. The jagged glass slashed my arms and face. I grabbed with my hand to steady myself; came in contact with an iron bar: clung like grim death.

For a huge concrete sphere was whirling, tossing, gyrating in a welter of waters. The din was terrific. I rolled over and over, my arms almost pulled out of their sockets. Then, like a ton of brick, something collided with my head. There was a blinding flare in the black void, and I knew no more.

* * * * *

Slowly I came out of a hideous nightmare.

My head ached frightfully, and my wounds smarted and stung. It was dark, but a faint luminescence from somewhere enabled me to faintly discern my surroundings. I was wedged between a steel cable-bracket and the curving wall. Across the glass strewn floor a body lay, sprawling queerly.

The room was swaying in long undulations, or was it my head? I lay helpless, unable to move. A leg dangled uselessly. There was a bump, the sound of scraping. I heard confused sounds penetrating the walls, and the jar of steady impacts.

A half an hour passed so; maybe an hour: I had no means of telling. I was weak from pain and loss of blood, and slightly delirious.

A faint whirring noise, a sudden intensity in the illumination caused me to turn my head. The steel shutter was glowing red, then a shower of white sparks broke through. The heavy steel was melting away into incandescence. It crashed.

A group of men stumbled cautiously in. Now I was sure I was delirious. For the men wore khaki uniforms! Americans! Then, in my fever, I thought I heard a familiar voice cry out my name. It was Jim's voice. A roaring curtain of blackness shut down on me.

* * * * *

When I awoke again I was lying in a clean-sheeted hospital bed. Jim was sitting at the side, staring at me with gloomy eyes.

"Hello, Jim," I gasped weakly. "How did I get here?"

It was touching to see the instantaneous delight on his weathered countenance.

"So you came to at last, you old son-of-a-gun! Thought you were cashing in on us for a while. How did you get here? That's just what I want to know. How in hell did you get here?"

I was still pretty weak. "You pulled me out. What happened?"

"We're still trying to puzzle it out. Wouldn't be surprised if you had a hand in it, you blighter. We were watching that damned cloud, worrying ourselves to death. What with the New York going out like a light, and not hearing anything from you, we were pretty low.

"Then, suddenly, there was a tremendous detonation. The whole cloud mass collapsed like a pricked bubble, and a bottomless pit yawned underneath the ocean--and, next thing we knew, our raft was yanked from under our feet, plunging and bucking in a swirl of waters.

"I just had time to grab hold of a stanchion, when we were sucked down into a whirlpool such as I never hope to see again. Round and round we spun, the tumbling waters mountain high above us. I was buried most of the time in crashing billows; my arms were almost pulled out of their sockets.

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"I never expected to see daylight again," Jim went on. "My hold was being broken when at last we were sewed out somehow onto a sea that looked as if a thousand hurricanes were blowing down.

"I managed to get my men together--what was left of them. There were pitifully few. Later, I heard that our losses were enormous. Over seventy-five per cent of our rafts on a 50-mile front were lost, and the enemies' were almost totally wiped out.

"When the mile-high seas had toned down a bit, we saw a huge concrete ball tossing about like a cork. Couldn't make out what the devil it was. Then someone noticed a door. We got that open, but there was a steel one inside. We had to slice it with an oxy-hydrogen flame. Inside, snug as a bug in a rug, were you.

"Now come on, tell me how in blazes you got in there. If you don't spill it quick, I'll bust."

I sat up in my excitement. "Don't you see, they were afraid the ray might fail. They had those concrete balls stuck all around so that the officers at least could escape, if it did. Their best technical men must have been running the control room. They made sure to have that specially strong. And the wave caused by the water pouring into the hole swept me right over here, just where I started from."

Jim had both hands on my shoulders, was pushing me down. "Whoa, baby, whoa. That's just as clear as a
darkness-rayed area. Count up to ten, and start all over again."
"Ten-shun!"

The general himself strode into the room. And then I had to tell my story straight.
Uncle William Boles’ war-battered old Geest gun gave the impression that at some stage of its construction it had been pulled out of shape and then hardened in that form. What remained of it was all of one piece. The scarred and pitted twin barrels were stubby and thick, and the vacant oblong in the frame behind them might have contained standard energy magazines. It was the stock which gave the alien weapon its curious appearance. Almost eighteen inches long, it curved abruptly to the right and was too thin, knobbed and indented to fit comfortably at any point in a human hand. Over half a century had passed since, with the webbed, boneless fingers of its original owner closed about it, it last spat deadly radiation at human foemen. Now it hung among Uncle William’s other collected oddities on the wall above the living room fireplace.

And today, Phil Boles thought, squinting at the gun with reflectively narrowed eyes, some eight years after Uncle William’s death, the old war souvenir would quietly become a key factor in the solution of a colonial planet’s problems. He ran a finger over the dull, roughened frame, bent closer to study the neatly lettered inscription: GUUNDERLAND BATTLE TROPHY, ANNO 2172, SGT. WILLIAM G. BOLES. Then, catching a familiar series of clicking noises from the hall, he straightened quickly and turned away. When Aunt Beulah’s go-chair came rolling back into the room, Phil was sitting at the low tea table, his back to the fireplace.

The go-chair’s wide flexible treads carried it smoothly down the three steps to the sunken section of the living room, Beulah sitting jauntily erect in it, for all the ninety-six years which had left her the last survivor of the original group of Earth settlers on the world of Roye. She tapped her fingers here and there on the chair’s armrests, swinging it deftly about, and brought it to a stop beside the tea table.

"That was Susan Feeney calling," she reported. "And there is somebody else for you who thinks I have to be taken care of! Go ahead and finish the pie, Phil. Can’t hurt a husky man like you. Got a couple more baking for you to take along."

Phil grinned. "That’d be worth the trip up from Fort Roye all by itself."

Beulah looked pleased. "Not much else I can do for my great-grand nephew nowadays, is there?"

Phil said, after a moment, "Have you given any further thought to--"

"Moving down to Fort Roye?" Beulah pursed her thin lips. "Goodness, Phil, I do hate to disappoint you again, but I’d be completely out of place in a town apartment."

"Dr. Fitzsimmons would be pleased," Phil remarked.

"Oh, him! Fitz is another old worry wart. What he wants is to get me into the hospital. Nothing doing!"

Phil shook his head helplessly, laughed. "After all, working a tupa ranch--"

"Nonsense. The ranch is just enough bother to be interesting. The appliances do everything anyway, and Susan is down here every morning for a chat and to make sure I’m still all right. She won’t admit that, of course, but if she thinks something should be taken care of, the whole Feeney family shows up an hour later to do it. There’s really no reason for you to be sending a dozen men up from Fort Roye every two months to harvest the tupa."

Phil shrugged. "No one’s ever yet invented an easy way to dig up those roots. And the CLU’s glad to furnish the men."

"Because you’re its president?"

"Uh-huh."

"It really doesn’t cost you anything?" Beulah asked doubtfully.

"Not a cent."

* * *

"Hm-m-m. Been meaning to ask you. What made you set up that ... Colonial Labor Union?"

Phil nodded. "That’s the official name."

"Why did you set it up in the first place?"

"That’s easy to answer," Phil said. "On the day the planetary population here touched the forty thousand mark, Roye became legally entitled to its labor union. Why not take advantage of it?"

"What’s the advantage?"

"More Earth money coming in, for one thing. Of the twelve hundred CLU members we’ve got in Fort Roye now, seventy-six per cent were unemployed this month. We’ll have a compensation check from the Territorial Office with the next ship coming in." He smiled at her expression. "Sure, the boys could go back to the tupa ranches. But not everyone likes that life as well as you and the Feeneys."
“Earth government lets you get away with it?” Beulah asked curiously. “They used to be pretty tight-fisted.”
“They still are—but it’s the law. The Territorial Office also pays any CLU president’s salary, incidentally. I don’t draw too much at the moment, but that will go up automatically with the membership and my responsibilities.”
“What responsibilities?”
“We’ve set up a skeleton organization,” Phil explained. “Now, when Earth government decides eventually to establish a big military base here, they can run in a hundred thousand civilians in a couple of months and everyone will be fitted into the pattern on Roye without trouble or confusion. That’s really the reason for all the generosity.”
Beulah sniffed. “Big base, my eye! There hasn’t been six months since I set foot here that somebody wasn’t talking about Fort Roye being turned into a Class A military base pretty soon. It’ll never happen, Phil. Roye’s a farm planet, and that’s what it’s going to stay.”
Phil’s lips twitched. “Well, don’t give up hope.”
“I’m not anxious for any changes,” Beulah said. “I like Roye the way it is.”
She peered at a button on the go-chair’s armrest which had just begun to put out small bright-blue flashes of light. “Pies are done,” she announced. “Phil, are you sure you can’t stay for dinner?”
Phil looked at his watch, shook his head. “I’d love to, but I really have to get back.”
“Then I’ll go wrap up the pies for you.”
Beulah swung the go-chair around, sent it slithering up the stairs and out the door. Phil stood up quickly. He stepped over to the fireplace, opened his coat and detached a flexible, box-shaped object from the inner lining. He laid this object on the mantle, and turned one of three small knobs about its front edge to the right. The box promptly extruded a supporting leg from each of its four corners, pushed itself up from the mantle and became a miniature table. Phil glanced at the door through which Beulah had vanished, listened a moment, then took the Geest gun from the wall, laid it carefully on top of the device and twisted the second dial.

The odd-looking gun began to sink slowly down through the surface of Phil’s instrument, like a rock disappearing in mud. Within seconds it vanished completely; then, a moment later, it began to emerge from the box’s underside. Phil let the Geest gun drop into his hand, replaced it on the wall, turned the third knob. The box withdrew its supports and sank down to the mantle. Phil clipped it back inside his coat, closed the coat, and strolled over to the center of the room to wait for Aunt Beulah to return with the pies.

* * * * *

It was curious, Phil Boles reflected as his aircar moved out over the craggy, plunging coastline to the north some while later, that a few bold minds could be all that was needed to change the fate of a world. A few minds with imagination enough to see how circumstances about them might be altered.

On his left, far below, was now the flat ribbon of the peninsula, almost at sea level, its tip widening and lifting into the broad, rocky promontory on which stood Fort Roye—the only thing on the planet bigger and of more significance than the shabby backwoods settlements. And Fort Roye was neither very big nor very significant. A Class F military base around which, over the years, a straggling town had come into existence, Fort Roye was a space-age trading post linking Roye’s population to the mighty mother planet, and a station from which the otherwise vacant and utterly unimportant 132nd Segment of the Space Territories was periodically and uneventfully patrolled. It was no more than that. Twice a month, an Earth ship settled down to the tiny port, bringing supplies, purchases, occasional groups of reassigned military and civilians—the latter suspected of being drawn as a rule from Earth’s Undesirable classification. The ship would take off some days later, with a return load of the few local products for which there was outside demand, primarily the medically valuable tupa roots; and Fort Roye lay quiet again.

The planet was not at fault. Essentially, it had what was needed to become a thriving colony in every sense. At fault was the Geest War. The war had periods of flare-up and periods in which it seemed to be subsiding. During the past decade it had been subsiding again. One of the early flare-ups, one of the worst, and the one which brought the war closest to Earth itself, was the Gunderland Battle in which Uncle William Boles’ trophy gun had been acquired. But the war never came near Roye. The action was all in the opposite section of the giant sphere of the Space Territories, and over the years the war drew steadily farther away.

And Earth’s vast wealth—its manpower, materials and money—was pouring into space in the direction the Geest War was moving. Worlds not a tenth as naturally attractive as Roye, worlds where the basic conditions for human life were just above the unbearable point, were settled and held, equipped with everything needed and wanted to turn them into independent giant fortresses, with a population not too dissatisfied with its lot. When Earth government didn’t count the expense, life could be made considerably better than bearable almost anywhere.

Those were the circumstances which condemned Roye to insignificance. Not everyone minded. Phil Boles, native son, did mind. His inclinations were those of an operator, and he was not being given an adequate opportunity to exercise them. Therefore, the circumstances would have to be changed, and the precise time to make the change
was at hand. Phil himself was not aware of every factor involved, but he was aware of enough of them. Back on Earth, a certain political situation was edging towards a specific point of instability. As a result, an Earth ship which was not one of the regular freighters had put down at Fort Roye some days before. Among its passengers were Commissioner Sanford of the Territorial Office, a well-known politician, and a Mr. Ronald Black, the popular and enterprising owner of Earth's second largest news outlet system. They were on a joint fact-finding tour of the thinly scattered colonies in this remote section of the Territories, and had wound up eventually at the most remote of all--the 132nd Segment and Roye.

That was one factor. Just visible twenty thousand feet below Phil--almost directly beneath him now as the aircar made its third leisurely crossing of the central belt of the peninsula--was another. From here it looked like an irregular brown circle against the peninsula's nearly white ground. Lower down, it would have resembled nothing so much as the broken and half-decayed spirals of a gigantic snail shell, its base sunk deep in the ground and its shattered point rearing twelve stories above it. This structure, known popularly as "the ruins" in Fort Roye, was supposed to have been the last stronghold of a semi-intelligent race native to Roye, which might have become extinct barely a century before the Earthmen arrived. A factor associated with the ruins again was that their investigation was the passionately pursued hobby of First Lieutenant Norman Vaughn, Fort Roye's Science Officer.

Add to such things the reason Roye was not considered in need of a serious defensive effort by Earth's strategists--the vast distances between it and any troubled area, and so the utter improbability that a Geest ship might come close enough to discover that here was another world as well suited for its race as for human beings. And then a final factor: the instrument attached to the lining of Phil's coat--a very special "camera" which now carried the contact impressions made on it by Uncle William's souvenir gun. Put 'em all together, Phil thought cheerily, and they spelled out interesting developments on Roye in the very near future.

He glanced at his watch again, swung the aircar about and started back inland. He passed presently high above Aunt Beulah's tupa ranch and that of the Feeney family two miles farther up the mountain, turned gradually to the east and twenty minutes later was edging back down the ranges to the coast. Here in a wild, unfarmed region, perched at the edge of a cliff dropping nearly nine hundred feet to the swirling tide, was a small, trim cabin which was the property of a small, trim Fort Roye lady named Celia Adams. Celia had been shipped out from Earth six years before, almost certainly as an Undesirable, though only the Territorial Office and Celia herself knew about that, the Botany Bay aspect of worlds like Roye being handled with some tact by Earth.

Phil approached the cabin only as far as was necessary to make sure that the dark-green aircar parked before it was one belonging to Major Wayne Jackson, the Administration Officer and second in command at Fort Roye--another native son and an old acquaintance. He then turned away, dropped to the woods ten miles south and made a second inconspicuous approach under cover of the trees. There might be casual observers in the area, and while his meeting with Jackson and Celia Adams today revealed nothing in itself, it would be better if no one knew about it.

He grounded the car in the forest a few hundred yards from the Adams cabin, slung a rifle over his shoulder and set off along a game path. It was good hunting territory, and the rifle would explain his presence if he ran into somebody. When he came within view of the cabin, he discovered Celia and her visitor on the covered back patio, drinks standing before them. Jackson was in hunting clothes. Phil remained quietly back among the trees for some seconds watching the two, aware of something like a last-minute hesitancy. A number of things passed slowly through his mind.

What they planned to do was no small matter. It was a hoax which should have far-reaching results, on a gigantic scale. And if Earth government realized it had been hoaxed, the thing could become very unpleasant. That tough-minded central bureaucracy did not ordinarily bother to obtain proof against those it suspected. The suspicion was enough. Individuals and groups whom the shadow of doubt touched found themselves shunted unobtrusively into some backwater of existence and kept there. It was supposed to be very difficult to emerge from such a position again.

In the back of his mind, Phil had been conscious of that, but it had seemed an insignificant threat against the excitement arising from the grandiose impudence of the plan, the perhaps rather small-boyish delight at being able to put something over, profitably, on the greatest power of all. Even now it might have been only a natural wariness that brought the threat up for a final moment of reflection. He didn't, of course, want to incur Earth government's disapproval. But why believe that he might? On all Roye there would be only three who knew--Wayne Jackson, Celia Adams, and himself. All three would benefit, each in a different way, and all would be equally responsible for the hoax. No chance of indiscretion or belated qualms there. Their own interest ruled it out in each case.

And from the other men now involved there was as little danger of betrayal. Their gain would be vastly greater, but they had correspondingly more to lose. They would take every step required to insure their protection, and in doing that they would necessarily take the best of care of Phil Boles.
"How did you ever get such a thing smuggled in to Roye?" Phil asked. He'd swallowed half the drink Celia offered him at a gulp and now, a few minutes later, he was experiencing what might have been under different circumstances a comfortable glow, but which didn't entirely erase the awareness of having committed himself at this hour to an irrevocable line of action.

Celia stroked a fluffy lock of red-brown hair back from her forehead and glanced over at him. She had a narrow, pretty face, marred only by a suggestion of hardness about the mouth—which was a little more than ordinarily noticeable just now. Phil decided she felt something like his own tensions, for identical reasons. He was less certain about Major Wayne Jackson, a big, loose-jointed man with an easy-going smile and a pleasantly self-assured voice. The voice might be veering a trifle too far to the hearty side; but that was all.

"I didn't," Celia said. "It belonged to Frank. How he got it shipped in with him—or after him—from Earth I don't know. He never told me. When he died a couple of years ago, I took it over."

Phil gazed reflectively at the row of unfamiliar instruments covering half the table beside her. The "camera" which had taken an imprint of the Geest gun in Aunt Beulah's living room went with that equipment and had become an interior section of the largest of the instruments. "What do you call it?" he asked.

Celia looked irritated. Jackson laughed, said, "Why not tell him? Phil's feeling like we do--this is the last chance to look everything over, make sure nobody's slipped up, that nothing can go wrong. Right, Phil?"

Phil nodded. "Something like that."

Celia chewed her lip. "All right," she said. "It doesn't matter, I suppose--compared with the other." She tapped one of the instruments. "The set's called a duplicator. This one's around sixty years old. They're classified as a forgery device, and it's decidedly illegal for a private person to build one, own one, or use one."

"Why that?"

"Because forgery is ordinarily all they're good for. Frank was one of the best of the boys in that line before he found he'd been put on an outtransfer list."

Phil frowned. "But if it can duplicate any manufactured object--"

"It can. At an average expense around fifty times higher than it would take to make an ordinary reproduction without it. A duplicator's no use unless you want a reproduction that's absolutely indistinguishable from the model."

"I see." Phil was silent a moment. "After sixty years--"

"Don't worry, Phil," Jackson said. "It's in perfect working condition. We checked that on a number of samples."

"How do you know the copies were really indistinguishable?"

Celia said impatiently, "Because that's the way the thing works. When the Geest gun passed through the model plate, it was analyzed down to its last little molecule. The duplicate is now being built up from that analysis. Every fraction of every element used in the original will show up again exactly. Why do you think the stuff's so expensive?"

Phil grinned. "All right, I'm convinced. How do we get rid of the inscription?"

"The gadget will handle that," Jackson said. "Crack that edge off, treat the cracked surface to match the wear of the rest." He smiled. "Makes an Earth forger's life look easy, doesn't it?"

"It is till they hook you," Celia said shortly. She finished her drink, set it on the table, added, "We've a few questions, too, Phil."

"The original gun," Jackson said. "Mind you, there's no slightest reason to expect an investigation. But after this starts rolling, our necks will be out just a little while we've got rid of that particular bit of incriminating evidence."

Phil pursed his lips. "I wouldn't worry about it. Nobody but Beulah ever looks at Uncle William's collection of oddities. Most of it's complete trash. And probably only she and you and I know there's a Geest gun among the things--William's cronies all passed away before he did. But if the gun disappeared now, Beulah would miss it. And that--since Earth government's made it illegal to possess Geest artifacts--might create attention."

Jackson fingered his chin thoughtfully, said, "Of course, there's always a way to make sure Beulah didn't kick up a fuss."

Phil hesitated. "Dr. Fitzsimmons gives Beulah another three months at the most," he said. "If she can stay out of the hospital for even the next eight weeks, he'll consider it some kind of miracle. That should be early enough to take care of the gun."

"It should be," Jackson said. "However, if there does happen to be an investigation before that time--"

Phil looked at him, said evenly, "We'd do whatever was necessary. It wouldn't be very agreeable, but my neck's out just as far as yours."

Celia laughed. "That's the reason we can all feel pretty safe," she observed. "Every last one of us is completely selfish--and there's no more dependable kind of person than that."
Jackson flushed a little, glanced at Phil, smiled. Phil shrugged. Major Wayne Jackson, native son, Fort Roye's second in command, was scheduled for the number one spot and a string of promotions via the transfer of the current commander, Colonel Thayer. Their Earthside associates would arrange for that as soon as the decision to turn Fort Roye into a Class A military base was reached. Phil himself could get by with the guaranteed retention of the CLU presidency, and a membership moving up year by year to the half million mark and beyond--he could get by very, very comfortably, in fact. While Celia Adams would develop a discreetly firm hold on every upcoming minor racket, facilitated by iron-clad protection and an enforced lack of all competitors.

"We're all thinking of Roye's future, Celia," Phil said amiably, "each in his own way. And the future looks pretty bright. In fact, the only possible stumbling block I can still see is right here on Roye, and it's Honest Silas Thayer. If our colonel covers up the Geest gun find tomorrow--"

Jackson grinned, shook his head. "Leave that to me, my boy--and to our very distinguished visitors from Earth. Commissioner Sanford has arranged to be in Thayer's company on Territorial Office business all day tomorrow. Science Officer Vaughn is dizzy with delight because Ronald Black and most of the newsgathering troop will inspect his diggings in the ruins in the morning, with the promise of giving his theories about the vanished natives of Roye a nice spread on Earth. Black will happen to ask me to accompany the party. Between Black and Sanford--and myself--Colonel Silas Thayer won't have a chance to suppress the discovery of a Geest gun on Roye until the military has had a chance to look into it fully. And the only one he can possibly blame for that will be Science Officer Norm Vaughn--for whom, I'll admit, I feel just a little bit sorry!"

* * * * *

First Lieutenant Norman Vaughn was an intense and frustrated young man whose unusually thick contact lenses and wide mouth gave him some resemblance to a melancholy frog. He suspected, correctly, that a good Science Officer would not have been transferred from Earth to Roye which was a planet deficient in scientific problems of any magnitude, and where requisitions for research purposes were infrequently and grudgingly granted.

The great spiraled ruin on the peninsula of Fort Roye had been Vaughn's one solace. Several similar deserted structures were known to be on the planet, but this was by far in the best condition and no doubt the most recently built. To him, if to no one else, it became clear that the construction had been carried out with conscious plan and purpose, and he gradually amassed great piles of notes to back up his theory that the vanished builders were of near-human intelligence. Unfortunately, their bodies appeared to have lacked hard and durable parts, since nothing that could be construed as their remains was found; and what Lieutenant Vaughn regarded as undeniable artifacts, on the level of very early Man's work, looked to others like chance shards and lumps of the tough, shell-like material of which the ruins were composed.

Therefore, while Vaughn was--as Jackson had pointed out--really dizzy with delight when Ronald Black, that giant of Earth's news media, first indicated an interest in the ruins and his theories about them, this feeling soon became mixed with acute anxiety. For such a chance surely would not come again if the visitors remained unconvinced by what he showed them, and what--actually--did he have to show? In the morning, when the party set out, Vaughn was in a noticeably nervous frame of mind.

Two hours later, he burst into the anteroom of the base commander's office in Fort Roye, where the warrant on duty almost failed to recognize him. Lieutenant Vaughn's eyes glittered through their thick lenses; his face was red and he was grinning from ear to ear. He pounded past the startled warrant, pulled open the door to the inner office where Colonel Thayer sat with the visiting Territorial Commissioner, and plunged inside.

"Sir," the warrant heard him quaver breathlessly, "I have the proof--the undeniable proof! They were intelligent beings. They did not die of disease. They were exterminated in war! They were ... but see for yourself!" There was a thud as he dropped something on the polished table top between the commissioner and Colonel Thayer. "That was dug up just now--among their own artifacts!"

Silas Thayer was on his feet, sucking in his breath for the blast that would hurl his blundering Science Officer back out of the office. What halted him was an odd, choked exclamation from Commissioner Sanford. The colonel's gaze flicked over to the visitor, then followed Sanford's stare to the object on the table.

For an instant, Colonel Thayer froze.

"Sir," the warrant heard him quaver breathlessly, "I have the proof--the undeniable proof! They were intelligent beings. They did not die of disease. They were exterminated in war! They were ... but see for yourself!" There was a thud as he dropped something on the polished table top between the commissioner and Colonel Thayer. "That was dug up just now--among their own artifacts!"

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For an instant, Colonel Thayer froze.

Vaughn was bubbling on. "And, sir, I ..."

"Shut up!" Thayer snapped. He continued immediately, "You say this was found in the diggings in the ruins?"

[Illustration]

"Yes, sir--just now! It's ..."

Lieutenant Vaughn checked himself under the colonel's stare, some dawning comprehension of the enormous irregularities he'd committed showing in his flushed face. He licked his lips uncertainly.

"You will excuse me for a moment, sir," Thayer said to Commissioner Sanford. He picked the Geest gun up gingerly by its unmistakably curved shaft, took it over to the office safe, laid it inside and relocked the safe. He then
left the office.

* * *

In an adjoining room, Thayer rapped out Major Wayne Jackson's code number on a communicator. He heard a
faint click as Jackson's wrist speaker switched on, and said quickly, "Wayne, are you in a position to speak?"
"I am at the moment," Jackson's voice replied cautiously.
Colonel Thayer said, "Norm Vaughn just crashed in here with something he claims was found in the diggings.
Sanford saw it, and obviously recognized it. We might be able to keep him quiet. But now some questions. Was that
item actually dug up just now?"
"Apparently it was," Jackson said. "I didn't see it happen--I was talking to Black at the moment. But there are
over a dozen witnesses who claim they did see it happen, including five or six of the news agency men."
"And they knew what it was?"
"Enough of them did."
Thayer cursed softly. "No chance that one of them pitched the thing into the diggings for an Earthside
sensation?"
"I'm afraid not," Jackson said. "It was lying in the sifter after most of the sand and dust had been blown away."
"Why didn't you call me at once?"
"I've been holding down something like a mutiny here, Silas. Vaughn got away before I could stop him, but I
grounded the other aircars till you could decide what to do. Our visitors don't like that. Neither do they like the fact
that I've put a guard over the section where the find was made, and haven't let them talk to Norm's work crew."
"Ronald Black and his staff have been fairly reasonable, but there's been considerable mention of military
highbrowedness made by the others. This is the first moment I've been free."
"You did the right thing," Thayer said, "but I doubt it will help much now. Can you get hold of Ronald Black?"
"Yes, he's over there ..."
"Colonel Thayer?" another voice inquired pleasantly a few seconds later.
"Mr. Black," the colonel said carefully, "what occurred in the diggings a short while ago may turn out to be a
matter of great importance."
"That's quite obvious, sir."
"And that being the case," the colonel went on, "do you believe it would be possible to obtain a gentleman's
agreement from all witnesses to make no mention of this apparent discovery until the information is released
through the proper channels? I'm asking for your opinion."
"Colonel Thayer," Ronald Black's voice said, still pleasantly, "my opinion is that the only way you could keep
the matter quiet is to arrest every civilian present, including myself, and hold us incommunicado. You have your
duty, and we have ours. Ours does not include withholding information from the public which may signal the
greatest shift in the conduct of the Geest War in the past two decades."
"I understand," Thayer said. He was silent for some seconds, and perhaps he, too, was gazing during that time
at a Fort Roye of the future--a Class A military base under his command, with Earth's great war vessels lined up
along the length of the peninsula.
"Mr. Black," he said, "please be so good as to give your colleagues this word from me. I shall make the most
thorough possible investigation of what has occurred and forward a prompt report, along with any material evidence
obtained, to my superiors on Earth. None of you will receive any other statement from me or from anyone under my
command. An attempt to obtain such a statement will, in fact, result in the arrest of the person or persons involved.
Is that clear?"
"Quite clear, Colonel Thayer," Ronald Black said softly. "And entirely satisfactory."

* * *

"We have known for the past eight weeks," the man named Cranehart said, "that this was not what it appears to
be ... that is, a section of a Geest weapon."
He shoved the object in question across the desk towards Commissioner Sanford and Ronald Black. Neither of
the two attempted to pick it up; they glanced at it, then returned their eyes attentively to Cranehart's face.
"It is, of course, an excellent copy," Cranehart went on, "produced with a professional forger's equipment. As I
imagine you're aware, that should have made it impossible to distinguish from the original weapon. However ...
there's no real harm in telling you this now ... Geest technology has taken somewhat different turns than our own. In
their weapons they employ traces of certain elements which we are only beginning to learn to maintain in stable
form. That is a matter your government has kept from public knowledge because we don't wish the Geests to learn
from human prisoners how much information we are gaining from them.

"The instrument which made this copy naturally did not have such elements at its disposal. So it employed their
lower homologues and in that manner successfully produced an almost identical model. In fact, the only significant
difference is that such a gun, if it had been a complete model, could not possibly have been fired." He smiled briefly. "But that, I think you will agree, is a significant difference! We knew as soon as the so-called Geest gun was examined that it could only have been made by human beings."

"Then," Commissioner Sanford said soberly, "its apparent discovery on Roye during our visit was a deliberate hoax--"

Cranehart nodded. "Of course."

Ronald Black said, "I fail to see why you've kept this quiet. You needn't have given away any secrets. Meanwhile the wave of public criticism at the government's seeming hesitancy to take action on the discovery--that is, to rush protection to the threatened Territorial Segments--has reached almost alarming proportions. You could have stopped it before it began two months ago with a single announcement."

"Well, yes," Cranehart said. "There were other considerations. Incidentally, Mr. Black, we are not unappreciative of the fact that the news media under your own control exercised a generous restraint in the matter."

"For which," Black said dryly, "I am now very thankful."

"As for the others," Cranehart went on, "the government has survived periods of criticism before. That is not important. The important thing is that the Geest War has been with us for more than a human life span now ... and it becomes difficult for many to bear in mind that until its conclusion no acts that might reduce our ability to prosecute it can be tolerated."

Ronald Black said slowly, "So you've been delaying the announcement until you could find out who was responsible for the hoax."

"We were interested," Cranehart said, "only in the important men--the dangerous men. We don't care much who else is guilty of what. This, you see, is a matter of expediency, not of justice." He looked for a moment at the politely questioning, somewhat puzzled faces across the desk, went on, "When you leave this room, each of you will be conducted to an office where you will be given certain papers to sign. That is the first step."

* * *

There was silence for some seconds. Ronald Black took a cigarette from a platinum case, tapped it gently on the desk, put it to his mouth and lit it. Cranehart went on, "It would have been impossible to unravel this particular conspiracy if the forgery had been immediately exposed. At that time, no one had taken any obvious action. Then, within a few days--with the discovery apparently confirmed by our silence--normal maneuverings in industry and finance were observed to be under way. If a major shift in war policy was pending, if one or more key bases were to be established in Territorial Segments previously considered beyond the range of Geest reconnaissance and therefore secure from attack, this would be to somebody's benefit on Earth."

"Isn't it always?" Black murmured.

"Of course. It's a normal procedure, ordinarily of no concern to government. It can be predicted with considerable accuracy to what group or groups the ultimate advantage in such a situation will go. But in these past weeks, it became apparent that somebody else was winning out ... somebody who could have won out only on the basis of careful and extensive preparation for this very situation."

"That was abnormal, and it was the appearance of an abnormal pattern for which we had been waiting. We find there are seven men involved. These men will be deprived of the advantage they have gained."

Ronald Black shook his head, said, "You're making a mistake, Cranehart. I'm signing no papers."

"Nor I," Sanford said thickly.

Cranehart rubbed the side of his nose with a fingertip, said meditatively, "You won't be forced to. Not directly." He nodded at the window. "On the landing flange out there is an aircar. It is possible that this aircar will be found wrecked in the mountains some four hundred miles north of here early tomorrow morning. Naturally, we have a satisfactory story prepared to cover such an eventuality."

Sanford whitened slowly. He said, "So you'd resort to murder!"

Cranehart was silent for a few seconds. "Mr. Sanford," he said then, "you, as a member of the Territorial Office, know very well that the Geest War has consumed over four hundred million human lives to date. That is the circumstance which obliges your government to insist on your co-operation. I advise you to give it."

"But you have no proof! You have nothing but surmises--""

"Consider this," Cranehart said, "A conspiracy of the type I have described constitutes a capital offense under present conditions. Are you certain that you would prefer us to continue to look for proof?"

Ronald Black said in a harsh voice, "And what would the outcome be if we did choose to co-operate?"

"Well, we can't afford to leave men of your type in a position of influence, Mr. Black," Cranehart said amiably. "And you understand, I'm sure, that it would be entirely too difficult to keep you under proper surveillance on Earth--"

* * *
Celia Adams said from outside the cabin door, “I think it is them, Phil. Both cars have started to circle.”

Phil Boles came to the door behind her and looked up. It was early evening--Roye’s sun just down, and a few stars out. The sky above the sea was still light. After a moment, he made out the two aircars moving in a wide, slow arc far overhead. He glanced at his watch.

"Twenty minutes late," he remarked. "But it couldn't be anyone else. And if they hadn't all come along, they wouldn't have needed two cars." He hesitated. "We can't tell how they're going to take this, Celia, but they may have decided already that they could make out better without us." He nodded towards the edge of the cliff. "Short way over there, and a long drop to the water! So don't let them surprise you."

She said coldly, "I won't. And I've used guns before this."

"Wouldn't doubt it." Phil reached back behind the door, picked up a flarelight standing beside a heavy machine rifle, and came outside. He pointed the light at the cars and touched the flash button briefly three times. After a moment, there were two answering flashes from the leading car.

"So Wayne Jackson's in the front car," Phil said. "Now let's see what they do." He returned the light to its place behind the door and came out again, standing about twelve feet to one side of Celia. The aircars vanished inland, came back at treetop level a few minutes later. One settled down quietly between the cabin and the edge of the cliff, the other following but dropping to the ground a hundred yards away, where it stopped. Phil glanced over at Celia, said softly, "Watch that one!" She nodded almost imperceptibly, right hand buried in her jacket pocket.

The near door of the car before them opened. Major Wayne Jackson, hatless and in hunting clothes, climbed out, staring at them. He said, "Anyone else here?"

"Just Celia and myself," Phil said.

Jackson turned, spoke into the car and two men, similarly dressed, came out behind him. Phil recognized Ronald Black and Sanford. The three started over to the cabin, stopped a dozen feet away.

Jackson said sardonically, "Our five other previous Earthside partners are in the second car. In spite of your insistence to meet the whole group, they don't want you and Celia to see their faces. They don't wish to be identifiable." He touched his coat lapel. "They'll hear what we're saying over this communicator and they could talk to you, but won't unless they feel it's necessary. You'll have to take my word for it that we're all present."

"That's good enough," Phil said.

"All right," Jackson went on, "now what did you mean by forcing us to take this chance? Let me make it plain. Colonel Thayer hasn't been accused of collaborating in the Roye gun hoax, but he got a black eye out of the affair just the same. And don't forget that a planet with colonial status is technically under martial law, which includes the civilians. If Silas Thayer can get his hands on the guilty persons, the situation will become a lot more unpleasant than it already is."

* * *

Phil addressed Ronald Black, "Then how about you two? When you showed up here again on a transfer list, Thayer must have guessed why."

Black shook his head. "Both of us exercised the privilege of changing our names just prior to the outtransfer. He doesn't know we're on Roye. We don't intend to let him find out."

Phil asked, "Did you make any arrangements to get out of Roye again?"

"Before leaving Earth?" Black showed his teeth in a humorless smile. "Boies, you have no idea of how abruptly and completely the government men cut us off from our every resource! We were given no opportunity to draw up plans to escape from exile, believe me."

Phil glanced over at Celia. "In that case," he said, a little thickly, "we'd better see if we can't draw some up together immediately."

Jackson asked, staring, "What are you talking about, Phil? Don't think for a moment Silas Thayer isn't doing what he can to find out who put that trick over on you. I'm not at all sure he doesn't suspect me. And if he can tie it to us, it's our neck. If you have some crazy idea of getting off the planet now, let me tell you that for the next few years we can't risk making a single move! If we stay quiet, we're safe. We--"

"I don't think we'd be safe," Phil said.

On his right, Celia Adams added sharply, "The gentleman in the other car who's just started to lower that window had better raise it again! If he's got good eyesight, he'll see I have a gun pointed at him. Yes, that's much better! Go on, Phil."

"Have you both gone out of your minds?" Jackson demanded.

"No," Celia said. She laughed with a sudden shakiness in her tone, added, "Though I don't know why we haven't! We've thought of the possibility that the rest of you might feel it would be better if Phil and I weren't around any more, Wayne."

"That's nonsense!" Jackson said.
"Maybe. Anyway, don't try it. You wouldn't be doing yourselves a favor even if it worked. Better listen now."
"Listen to what?" Jackson demanded exasperatedly. "I'm telling you it will be all right, if we just don't make any mistakes. The only real pieces of evidence were your duplicator and the original gun. Since we're rid of those--"
"We're not rid of the gun, Wayne," Phil said. "I still have it. I haven't dared get rid of it."
"You ... what do you mean?"
"I was with Beulah in the Fort Roye hospital when she died," Phil said. He added to Ronald Black, "That was two days after the ship brought the seven of you in."
Black nodded, his eyes alert. "Major Jackson informed me."
"She was very weak, of course, but quite lucid," Phil went on. "She talked a good deal--reminiscing, and in a rather happy vein. She finally mentioned the Geest gun, and how Uncle William used to keep us boys ... Wayne and me ... spell-bound with stories about the Gunderland Battle, and how he'd picked the gun up there."
Jackson began, "And what does--"
"He didn't get the gun there," Phil said. "Beulah said Uncle William came in from Earth with the first shipment of settlers and was never off Roye again in his life."
"He ... then--"
Phil said, "Don't you get it? He found the gun right here on Roye. Beulah thought it was awfully funny. William was an old fool, she said, but the best liar she'd ever known. He came in with the thing one day after he'd been traipsing around the back country, and said it looked 'sort of' like pictures of Geest guns he'd seen, and that he was going to put the inscription on it and have some fun now and then." Phil took a deep breath. "Uncle William found it lying in a pile of ashes where someone had made camp a few days before. He figured it would have been a planetary speedster some rich sportsmen from Earth had brought in for a taste of outworld hunting on Roye, and that one of them had dumped the broken oddball gun into the fire to get rid of it."
"That was thirty-six years ago. Beulah remembered it happened a year before I was born."
There was silence for some seconds. Then Ronald Black said evenly, "And what do you conclude, Boles?"
Phil looked at him. "I'd conclude that Norm Vaughn was right about there having been some fairly intelligent creatures here once. The Geests ran into them and exterminated them as they usually do. That might have been a couple of centuries back. Then, thirty-six years ago, one of their scouts slipped in here without being spotted, found human beings on the planet, looked around a little and left again."
He took the Geest gun from his pocket, hefted it in his hand. "We have the evidence here," he said. "We had it all the time and didn't know it."
Ronald Black said dryly, "We may have the evidence. But we have no slightest proof at all now that that's what it is."
"I know it," Phil said. "Now Beulah's gone ... well, we couldn't even prove that William Boles never left the planet, for that matter. There weren't any records to speak of being kept in the early days." He was silent a moment. "Supposing," he said, "we went ahead anyway. We hand the gun in, with the story I just told you--"
Jackson made a harsh, laughing sound. "That would hang us fast, Phil!"
"And nothing else?"
"Nothing else," Black said with finality. "Why should anyone believe the story now? There are a hundred more likely ways in which a Geest gun could have got to Roye. The gun is tangible evidence of the hoax, but that's all."
Phil asked, "Does anybody ... including the cautious gentlemen in the car over there ... disagree with that?"
There was silence again. Phil shrugged, turned towards the cliff edge, drew his arm back and hurled the Geest gun far up and out above the sea. Still without speaking, the others turned their heads to watch it fall towards the water, then looked back at him.
"I didn't think very much of that possibility myself," Phil said unsteadily. "But one of you might have. All right--we know the Geests know we're here. But we won't be able to convince anyone else of it. And, these last few years, the war seems to have been slowing down again. In the past, that's always meant the Geests were preparing a big new surprise operation."
"So the other thing now--the business of getting off Roye. It can't be done unless some of you have made prior arrangements for it Earthside. If it had been possible in any other way, I'd have been out of this place ten years ago."
Ronald Black said carefully, "Very unfortunately, Boles, no such arrangements have been made."
"Then there it is," Phil said. "I suppose you see now why I thought this group should get together. The ten masterminds! Well, we've hoaxed ourselves into a massive jam. Now let's find out if there's any possible way--any possibility at all!--of getting out of it again."
A voice spoke tinnily from Jackson's lapel communicator. "Major Jackson?"
"Yes?" Jackson said.
"Please persuade Miss Adams that it is no longer necessary to point her gun at this car. In view of the stated
emergency, we feel we had better come out now--and join the conference."

FROM THE RECORDS OF THE TERRITORIAL OFFICE, 2345 A.D.

... It is generally acknowledged that the Campaign of the 132nd Segment marked the turning point of the Geest War. Following the retransfer of Colonel Silas Thayer to Earth, the inspired leadership of Major Wayne Jackson and his indefatigable and exceptionally able assistants, notably CLU President Boles, transformed the technically unfortified and thinly settled key world of Roye within twelve years into a virtual death trap for any invading force. Almost half of the Geest fleet which eventually arrived there was destroyed in the first week subsequent to the landing, and few of the remaining ships were sufficiently undamaged to be able to lift again. The enemy relief fleet, comprising an estimated forty per cent of the surviving Geest space power, was intercepted in the 134th Segment by the combined Earth forces under Admiral McKenna's command and virtually annihilated.

In the following two years ...
"Mr. Watkins, do you read anything?"
Watkins was at his own instrument panel. "Not a thing, sir. I'll vouch for every bit of equipment in Dierdre."
"Very well. How long before we reach Point Baker?"
"Three minutes, Chief," Rajcik said.
"Good."
The spaceship hung in the void, all sensation of speed lost for lack of a reference point. Beyond the portholes was darkness, the true color of the Universe, perforated by the brilliant lost points of the stars.
Captain Somers turned away from the disturbing reminder of his extreme finitude and wondered if he could land Dierdre without shifting the computer. It was by far the largest, heaviest and most delicate piece of equipment ever transported in space.
He worried about that machine. Its value ran into the billions of dollars, for Mars Colony had ordered the best possible, a machine whose utility would offset the immense transportation charge across space. As a result, the Fahrensen Computer was perhaps the most complex and advanced machine ever built by Man.
"Ten seconds to Point Baker," Rajcik announced.
"Very well." Somers readied himself at the control board.
"Four--three--two--one--fire!"
* * * * *
Somers activated the engines. Acceleration pressed the three men back into their couches, and more acceleration, and--shockingly--still more acceleration.
"The fuel!" Watkins yelped, watching his indicators spinning.
"The course!" Rajcik gasped, fighting for breath.
Captain Somers cut the engine switch. The engines continued firing, pressing the men deeper into their couches. The cabin lights flickered, went out, came on again.
And still the acceleration mounted and Dierdre's engines howled in agony, thrusting the ship forward. Somers raised one leaden hand and inched it toward the emergency cut-off switch. With a fantastic expenditure of energy, he reached the switch, depressed it.
The engines stopped with dramatic suddenness, while tortured metal creaked and groaned. The lights flickered rapidly, as though Dierdre were blinking in pain. They steadied and then there was silence.
Watkins hurried to the engine room. He returned morosely.
"Of all the damn things," he muttered.
"What was it?" Captain Somers asked.
"Main firing circuit. It fused on us." He shook his head. "Metal fatigue, I'd say. It must have been flawed for years."
"When was it last checked out?"
"Well, it's a sealed unit. Supposed to outlast the ship. Absolutely foolproof, unless--"
"Unless it's flawed."
"Don't blame it on me! Those circuits are supposed to be X-rayed, heat-treated, fluoroscoped--you just can't trust machinery!"
At last Watkins believed that engineering axiom.
"How are we on fuel?" Captain Somers asked.
"Not enough left to push a kiddy car down Main Street," Watkins said gloomily. "If I could get my hands on that factory inspector ..."
Captain Somers turned to Rajcik, who was seated at the navigator's desk, hunched over his charts. "How does this affect our course?"
Rajcik finished the computation he was working on and gnawed thoughtfully at his pencil.
"It kills us. We're going to cross the orbit of Mars before Mars gets there."
"How long before?"
"Too long, Captain, we're flying out of the Solar System like the proverbial bat out of hell."
* * * * *
Rajcik smiled, a courageous, devil-may-care smile which Watkins found singularly inappropriate.
"Damn it, man," he roared, "don't just leave it there. We've got a little fuel left. We can turn her, can't we? You are a navigator, aren't you?"
"I am," Rajcik said icily. "And if I computed my courses the way you maintain your engines, we'd be plowing through Australia now."
"Why, you little company toady! At least I got my job legitimately, not by marrying--"
"That's enough!" Captain Somers cut in.
Watkins, his face a mottled red, his mustache bristling, looked like a walrus about to charge. And Rajcik, eyes glittering, was waiting hopefully.

"No more of this," Somers said. "I give the orders here."
"Then give some!" Watkins snapped. "Tell him to plot a return curve. This is life or death!"
"All the more reason for remaining cool. Mr. Rajcik, can you plot such a course?"
"First thing I tried," Rajcik said. "Not a chance, on the fuel we have left. We can turn a degree or two, but it won't help."
Watkins said, "Of course it will! We'll curve back into the Solar System!"
"Sure, but the best curve we can make will take a few thousand years for us to complete."
"Perhaps a landfall on some other planet--Neptune, Uranus--"
Rajcik shook his head. "Even if an outer planet were in the right place at the right time, we'd need fuel--a lot of fuel--to get into a braking orbit. And if we could, who'd come get us? No ship has gone past Mars yet."
"At least we'd have a chance," Watkins said.
"Maybe," Rajcik agreed indifferently. "But we can't swing it. I'm afraid you'll have to kiss the Solar System good-by."

Captain Somers wiped his forehead and tried to think of a plan. He found it difficult to concentrate. There was too great a discrepancy between his knowledge of the situation and its appearance. He knew--intellectually--that his ship was traveling out of the Solar System at a tremendous rate of speed. But in appearance they were stationary, hung in the abyss, three men trapped in a small, hot room, breathing the smell of hot metal and perspiration.

"What shall we do, Captain?"

* * * * *

Somers frowned at the engineer. Did the man expect him to pull a solution out of the air? How was he even supposed to concentrate on the problem? He had to slow the ship, turn it. But his senses told him that the ship was not moving. How, then, could speed constitute a problem?

He couldn't help but feel that the real problem was to get away from these high-strung, squabbling men, to escape from this hot, smelly little room.

"Captain! You must have some idea!"

Somers tried to shake his feeling of unreality. The problem, the real problem, he told himself, was how to stop the ship.

He looked around the fixed cabin and out the porthole at the unmoving stars. We are moving very rapidly, he thought, unconvinced.

Rajcik said disgustedly, "Our noble captain can't face the situation."
"Of course I can," Somers objected, feeling very light-headed and unreal. "I can pilot any course you lay down. That's my only real responsibility. Plot us a course to Mars!"
"Sure!" Rajcik said, laughing. "I can! I will! Engineer, I'm going to need plenty of fuel for this course--about ten tons! See that I get it!"
"Right you are," said Watkins. "Captain, I'd like to put in a requisition for ten tons of fuel."
"Requisition granted," Somers said. "All right, gentlemen, responsibility is inevitably circular. Let's get a grip on ourselves. Mr. Rajcik, suppose you radio Mars."

When contact had been established, Somers took the microphone and stated their situation. The company official at the other end seemed to have trouble grasping it.

"But can't you turn the ship?" he asked bewilderedly. "Any kind of an orbit--"
"No. I've just explained that."
"Then what do you propose to do, Captain?"
"That's exactly what I'm asking you."

There was a babble of voices from the loudspeaker, punctuated by bursts of static. The lights flickered and reception began to fade. Rajcik, working frantically, managed to re-establish the contact.

"Captain," the official on Mars said, "we can't think of a thing. If you could swing into any sort of an orbit--"
"I can't!"
"Under the circumstances, you have the right to try anything at all. Anything, Captain!"

Somers groaned. "Listen, I can think of just one thing. We could bail out in spacesuits as near Mars as possible. Link ourselves together, take the portable transmitter. It wouldn't give much of a signal, but you'd know our approximate position. Everything would have to be figured pretty closely--those suits just carry twelve hours' air--but it's a chance."

* * * * *

There was a confusion of voices from the other end. Then the official said, "I'm sorry, Captain."
"What? I'm telling you it's our one chance!"
"Captain, the only ship on Mars now is the Diana. Her engines are being overhauled."
"How long before she can be spaceborne?"
"Three weeks, at least. And a ship from Earth would take too long. Captain, I wish we could think of something. About the only thing we can suggest--"

The reception suddenly failed again.
Rajcik cursed frustratedly as he worked over the radio. Watkins gnawed at his mustache. Somers glanced out a porthole and looked hurriedly away, for the stars, their destination, were impossibly distant.

They heard static again, faintly now.
"I can't get much more," Rajcik said. "This damned reception.... What could they have been suggesting?"
"Whatever it was," said Watkins, "they didn't think it would work."
"What the hell does that matter?" Rajcik asked, annoyed. "It'd give us something to do."

They heard the official's voice, a whisper across space.
"Can you hear... Suggest..."

At full amplification, the voice faded, then returned. "Can only suggest... most unlikely... but try... calculator...

[Illustration]

The voice was gone. And then even the static was gone.
"That does it," Rajcik said. "The calculator? Did he mean the Fahrensen Computer in our hold?"
"I see what he meant," said Captain Somers. "The Fahrensen is a very advanced job. No one knows the limits of its potential. He suggests we present our problem to it."
"That's ridiculous," Watkins snorted. "This problem has no solution."
"It doesn't seem to," Somers agreed. "But the big computers have solved other apparently impossible problems. We can't lose anything by trying."
"No," said Rajcik, "as long as we don't pin any hopes on it."
"That's right. We don't dare hope. Mr. Watkins, I believe this is your department."
"Oh, what's the use?" Watkins asked. "You say don't hope--but both of you are hoping anyhow! You think the big electronic god is going to save your lives. Well, it's not!"
"We have to try," Somers told him.
"We don't! I wouldn't give it the satisfaction of turning us down!"

* * * * *

They stared at him in vacant astonishment.
"Now you're implying that machines think," said Rajcik.
"Of course I am," Watkins said. "Because they do! No, I'm not out of my head. Any engineer will tell you that a complex machine has a personality all its own. Do you know what that personality is like? Cold, withdrawn, uncaring, unfeeling. A machine's only purpose is to frustrate desire and produce two problems for every one it solves. And do you know why a machine feels this way?"
"You're hysterical," Somers told him.
"I am not. A machine feels this way because it knows it is an unnatural creation in nature's domain. Therefore it wishes to reach entropy and cease--a mechanical death wish."
"I've never heard such gibberish in my life," Somers said. "Are you going to hook up that computer?"
"Of course. I'm a human. I keep trying. I just wanted you to understand fully that there is no hope." He went to the cargo hold.

After he had gone, Rajcik grinned and shook his head. "We'd better watch him."
"He'll be all right," Somers said.
"Maybe, maybe not." Rajcik pursed his lips thoughtfully. "He's blaming the situation on a machine personality now, trying to absolve himself of guilt. And it is his fault that we're in this spot. An engineer is responsible for all equipment."

"I don't believe you can put the blame on him so dogmatically," Somers replied.
"Sure I can," Rajcik said. "I personally don't care, though. This is as good a way to die as any other and better than most."

Captain Somers wiped perspiration from his face. Again the notion came to him that the problem--the real problem--was to find a way out of this hot, smelly, motionless little box.

Rajcik said, "Death in space is an appealing idea, in certain ways. Imagine an entire spaceship for your tomb! And you have a variety of ways of actually dying. Thirst and starvation I rule out as unimaginative. But there are possibilities in heat, cold, implosion, explosion--"
"This is pretty morbid," Somers said.

"I'm a pretty morbid fellow," Rajcik said carelessly. "But at least I'm not blaming inanimate objects, the way Watkins is. Or permitting myself the luxury of shock, like you." He studied Somers' face. "This is your first real emergency, isn't it, Captain?"

"I suppose so," Somers answered vaguely.

"And you're responding to it like a stunned ox," Rajcik said. "Wake up, Captain! If you can't live with joy, at least try to extract some pleasure from your dying."

"Shut up," Somers said, with no heat. "Why don't you read a book or something?"

"I've read all the books on board. I have nothing to distract me except an analysis of your character."

Watkins returned to the cabin. "Well, I've activated your big electronic god. Would anyone care to make a burned offering in front of it?"

"Have you given it the problem?"

"Not yet. I decided to confer with the high priest. What shall I request of the demon, sir?"

"Give it all the data you can," Somers said. "Fuel, oxygen, water, food--that sort of thing. Then tell it we want to return to Earth. Alive," he added.

"It'll love that," Watkins said. "It'll get such pleasure out of rejecting our problem as unsolvable. Or better yet--insufficient data. In that way, it can hint that a solution is possible, but just outside our reach. It can keep us hoping."

Somers and Rajcik followed him to the cargo hold. The computer, activated now, hummed softly. Lights flashed swiftly over its panels, blue and white and red.

Watkins punched buttons and turned dials for fifteen minutes, then moved back.

"Watch for the red light on top," he said. "That means the problem is rejected."

"Don't say it," Rajcik warned quickly.

Watkins laughed. "Superstitious little fellow, aren't you?"

"But not incompetent," Rajcik said, smiling.

"Can't you two quit it?" Somers demanded, and both men turned startedly to face him.

"Behold!" Rajcik said. "The sleeper has awakened."

"After a fashion," said Watkins, snickering.

Somers suddenly felt that if death or rescue did not come quickly, they would kill each other, or drive each other crazy.

"Look!" Rajcik said.

A light on the computer's panel was flashing green.

"Must be a mistake," said Watkins. "Green means the problem is solvable within the conditions set down."

"Solvable!" Rajcik said.

"But it's impossible," Watkins argued. "It's fooling us, leading us on--"

"Don't be superstitious," Rajcik mocked. "How soon do we get the solution?"

"It's coming now." Watkins pointed to a paper tape inching out of a slot in the machine's face. "But there must be something wrong!"

They watched as, millimeter by millimeter, the tape crept out. The computer hummed, its lights flashing green. Then the hum stopped. The green lights blazed once more and faded.

"What happened?" Rajcik wanted to know.

"It's finished," Watkins said.

"Pick it up! Read it!"

"You read it. You won't get me to play its game."

Rajcik laughed nervously and rubbed his hands together, but didn't move. Both men turned to Somers.

"Captain, it's your responsibility."

"Go ahead, Captain!"

Somers looked with loathing at his engineer and navigator. His responsibility, everything was his responsibility. Would they never leave him alone?

He went up to the machine, pulled the tape free, read it with slow deliberation.

"What does it say, sir?" Rajcik asked.

"Is it--possible?" Watkins urged.

"Oh, yes," Somers said. "It's possible." He laughed and looked around at the hot, smelly, low-ceilinged little room with its locked doors and windows.

"What is it?" Rajcik shouted.
Somers said, "You figured a few thousand years to return to the Solar System, Rajcik? Well, the computer agrees with you. Twenty-three hundred years, to be precise. Therefore, it has given us a suitable longevity serum."

"Twenty-three hundred years," Rajcik mumbled. "I suppose we hibernate or something of the sort."

"Not at all," Somers said calmly. "As a matter of fact, this serum does away quite nicely with the need for sleep. We stay awake and watch each other."

The three men looked at one another and at the sickeningly familiar room smelling of metal and perspiration, its sealed doors and windows that stared at an unchanging spectacle of stars.

Watkins said, "Yes, that's the sort of thing it would do."

* * * * *

Contents

WARRIOR RACE
By Robert Sheckley

Destroying the spirit of the enemy is the goal of war and the aliens had the best way!

They never did discover whose fault it was. Fannia pointed out that if Donnought had had the brains of an ox, as well as the build, he would have remembered to check the tanks. Donnought, although twice as big as him, wasn't quite as fast with an insult. He intimated, after a little thought, that Fannia's nose might have obstructed his reading of the fuel gauge.

This still left them twenty light-years from Thetis, with a cupful of transformer fuel in the emergency tank.

"All right," Fannia said presently. "What's done is done. We can squeeze about three light-years out of the fuel before we're back on atomics. Hand me The Galactic Pilot--unless you forgot that, too."

Donnought dragged the bulky microfilm volume out of its locker, and they explored its pages.

The Galactic Pilot told them they were in a sparse, seldom-visited section of space, which they already knew. The nearest planetary system was Hatterfield; no intelligent life there. Sersus had a native population, but no refueling facilities. The same with Illed, Hung and Porderai.

"Ah-ha!" Fannia said. "Read that, Donnought. If you can read, that is."


"Transformer fuel, boy!" Fannia said gleefully. "I believe we will get to Thetis, after all." He punched the new direction on the ship's tape. "If that fuel's still there."

"Should we read up on the unique social structure?" Donnought asked, still poring over The Galactic Pilot.

"Certainly," Fannia said. "Just step over to the main galactic base on Earth and buy me a copy."

"I forgot," Donnought admitted slowly.

"Let me see," Fannia said, dragging out the ship's language library, "Cascellan, Cascellan ... Here it is. Be good while I learn the language." He set the tape in the hypnophone and switched it on. "Another useless tongue in my overstuffed head," he murmured, and then the hypnophone took over.

* * * * *

Coming out of transformer drive with at least a drop of fuel left, they switched to atomics. Fannia rode the beam right across the planet, locating the slender metal spire of the Galactic Survey cache. The plain was no longer unoccupied, however. The Cascellans had built a city around the cache, and the spire dominated the crude wood-and-mud buildings.

"Hang on," Fannia said, and brought the ship down on the outskirts of the city, in a field of stubble.

"Now look," Fannia said, unfastening his safety belt. "We're just here for fuel. No souvenirs, no side-trips, no fraternizing."

Through the port, they could see a cloud of dust from the city. As it came closer, they made out figures running toward their ship.

"What do you think this unique social structure is?" Donnought asked, pensively checking the charge in a needler gun.
"I know not and care less," Fannia said, struggling into space armor. "Get dressed."
"The air's breathable."
"Look, pachyderm, for all we know, these Cascellans think the proper way to greet visitors is to chop off their heads and stuff them with green apples. If Galactic says unique, it probably means unique."
"Galactic said they were friendly."
"That means they haven't got atomic bombs. Come on, get dressed." Donnaught put down the needler and struggled into an oversize suit of space armor. Both men strapped on needlers, paralyzers, and a few grenades.
"I don't think we have anything to worry about," Fannia said, tightening the last nut on his helmet. "Even if they get rough, they can't crack space armor. And if they're not rough, we won't have any trouble. Maybe these gewgaws will help." He picked up a box of trading articles--mirrors, toys and the like.
Helmeted and armored, Fannia slid out the port and raised one hand to the Cascellans. The language, hypnotically placed in his mind, leaped to his lips.
"We come as friends and brothers. Take us to the chief."
The natives clustered around, gaping at the ship and the space armor. Although they had the same number of eyes, ears and limbs as humans, they completely missed looking like them.
"If they're friendly," Donnaught asked, climbing out of the port, "why all the hardware?" The Cascellans were dressed predominantly in a collection of knives, swords and daggers. Each man had at least five, and some had eight or nine.
"Maybe Galactic got their signals crossed," Fannia said, as the natives spread out in an escort. "Or maybe the natives just use the knives for mumblypeg."

The city was typical of a non-mechanical culture. Narrow, packed-dirt streets twisted between ramshackle huts. A few two-story buildings threatened to collapse at any minute. A stench filled the air, so strong that Fannia's filter couldn't quite eradicate it. The Cascellans bounded ahead of the heavily laden Earthmen, dashing around like a pack of playful puppies. Their knives glittered and clanked.
The chief's house was the only three-story building in the city. The tall spire of the cache was right behind it.
"If you come in peace," the chief said when they entered, "you are welcome." He was a middle-aged Cascellan with at least fifteen knives strapped to various parts of his person. He squatted cross-legged on a raised dais.
"We are privileged," Fannia said. He remembered from the hypnotic language lesson that "chief" on Cascella meant more than it usually did on Earth. The chief here was a combination of king, high priest, deity and bravest warrior.
"We have a few simple gifts here," Fannia added, placing the gewgaws at the king's feet. "Will his majesty accept?"
"No," the king said. "We accept no gifts." Was that the unique social structure? Fannia wondered. It certainly was not human. "We are a warrior race. What we want, we take."
Fannia sat cross-legged in front of the dais and exchanged conversation with the king while Donnaught played with the spurned toys. Trying to overcome the initial bad impression, Fannia told the chief about the stars and other worlds, since simple people usually liked fables. He spoke of the ship, not mentioning yet that it was out of fuel. He spoke of Cascella, telling the chief how its fame was known throughout the Galaxy.
"That is as it should be," the chief said proudly. "We are a race of warriors, the like of which has never been seen. Every man of us dies fighting."
"You must have fought some great wars," Fannia said politely, wondering what idiot had written up the galactic report.
"I have not fought a war for many years," the chief said. "We are united now, and all our enemies have joined us."
Bit by bit, Fannia led up to the matter of the fuel.
"What is this 'fuel'?" the chief asked, haltingly because there was no equivalent for it in the Cascellan language.
"It makes our ship go."
"And where is it?"
"In the metal spire," Fannia said. "If you would just allow us--"
"In the holy shrine?" the chief exclaimed, shocked. "The tall metal church which the gods left here long ago?"
"Yeah," Fannia said sadly, knowing what was coming. "I guess that's it."
"It is sacrilege for an outworlder to go near it," the chief said. "I forbid it."
"We need the fuel." Fannia was getting tired of sitting cross-legged. Space armor wasn't built for complicated postures. "The spire was put here for such emergencies."
"Strangers, know that I am god of my people, as well as their leader. If you dare approach the sacred temple,
there will be war."

"I was afraid of that," Fannia said, getting to his feet.

"And since we are a race of warriors," the chief said, "at my command, every fighting man of the planet will move against you. More will come from the hills and from across the rivers."

Abruptly, the chief drew a knife. It must have been a signal, because every native in the room did the same.

Fannia dragged Donnaught away from the toys. "Look, lummox. These friendly warriors can't do a damn thing to us. Those knives can't cut space armor, and I doubt if they have anything better. Don't let them pile up on you, though. Use the paralyzer first, the needler if they really get thick."

"Right." Donnaught whisked out and primed a paralyzer in a single coordinated movement. With weapons, Donnaught was fast and reliable, which was virtue enough for Fannia to keep him as a partner.

"We'll cut around this building and grab the fuel. Two cans ought to be enough. Then we'll beat it fast."

They walked out the building, followed by the Cascellans. Four carriers lifted the chief, who was barking orders. The narrow street outside was suddenly jammed with armed natives. No one tried to touch them yet, but at least a thousand knives were flashing in the sun.

In front of the cache was a solid phalanx of Cascellans. They stood behind a network of ropes that probably marked the boundary between sacred and profane ground.

"Get set for it," Fannia said, and stepped over the ropes.

Immediately the foremost temple guard raised his knife. Fannia brought up the paralyzer, not firing it yet, still moving forward.

The foremost native shouted something, and the knife swept across in a glittering arc. The Cascellan gurgled something else, staggered and fell. Bright blood oozed from his throat.

"I told you not to use the needler yet!" Fannia said.

"I didn't," Donnaught protested. Glancing back, Fannia saw that Donnaught's needler was still holstered.

"Then I don't get it," said Fannia bewilderedly.

Three more natives bounded forward, their knives held high. They tumbled to the ground also. Fannia stopped and watched as a platoon of natives advanced on them.

Once they were within stabbing range of the Earthmen, the natives were slitting their own throats!

Fannia was frozen for a moment, unable to believe his eyes. Donnaught halted behind him.

Natives were rushing forward by the hundreds now, their knives poised, screaming at the Earthmen. As they came within range, each native stabbed himself, tumbling on a quickly growing pile of bodies. In minutes the Earthmen were surrounded by a heap of bleeding Cascellan flesh, which was steadily growing higher.

"All right!" Fannia shouted. "Stop it." He yanked Donnaught back with him, to profane ground. "Truce!" he yelled in Cascellan.

The crowd parted and the chief was carried through. With two knives clenched in his fists, he was panting from excitement.

"We have won the first battle!" he said proudly. "The might of our warriors frightens even such aliens as yourselves. You shall not profane our temple while a man is alive on Cascella!"

The natives shouted their approval and triumph.

The two aliens dazedly stumbled back to their ship.

* * * * *

"So that's what Galactic meant by 'a unique social structure,'" Fannia said morosely. He stripped off his armor and lay down on his bunk. "Their way of making war is to suicide their enemies into capitulation."

"They must be nuts," Donnaught grumbled. "That's no way to fight."

"It works, doesn't it?" Fannia got up and stared out a porthole. The sun was setting, painting the city a charming red in its glow. The beams of light glistened off the spire of the Galactic cache. Through the open doorway they could hear the boom and rattle of drums. "Tribal call to arms," Fannia said.

"I still say it's crazy." Donnaught had some definite ideas on fighting. "It ain't human."

"I'll buy that. The idea seems to be that if enough people slaughter themselves, the enemy gives up out of sheer guilty conscience."

"What if the enemy doesn't give up?"

"Before these people united, they must have fought it out tribe to tribe, suiciding until someone gave up. The losers probably joined the victors; the tribe must have grown until it could take over the planet by sheer weight of numbers." Fannia looked carefully at Donnaught, trying to see if he understood. "It's anti-survival, of course; if someone didn't give up, the race would probably kill themselves." He shook his head. "But war of any kind is anti-survival. Perhaps they've got rules."
"Couldn't we just barge in and grab the fuel quick?" Donnought asked. "And get out before they all killed themselves?"

"I don't think so," Fannia said. "They might go on committing suicide for the next ten years, figuring they were still fighting us." He looked thoughtfully at the city. "It's that chief of theirs. He's their god and he'd probably keep them suiciding until he was the only man left. Then he'd grin, say, 'We are great warriors,' and kill himself."

Donnought shrugged his big shoulders in disgust. "Why don't we knock him off?"

"They'd just elect another god." The sun was almost below the horizon now. "I've got an idea, though," Fannia said. He scratched his head. "It might work. All we can do is try."

* * * * *

At midnight, the two men sneaked out of the ship, moving silently into the city. They were both dressed in space armor again. Donnought carried two empty fuel cans. Fannia had his paralyzer out.

The streets were dark and silent as they slid along walls and around posts, keeping out of sight. A native turned a corner suddenly, but Fannia paralyzed him before he could make a sound.

They crouched in the darkness, in the mouth of an alley facing the cache.

"Have you got it straight?" Fannia asked. "I paralyze the guards. You bolt in and fill up those cans. We get the hell out of here, quick. When they check, they find the cans still there. Maybe they won't commit suicide then."

The men moved across the shadowy steps in front of the cache. There were three Cascellans guarding the entrance, their knives stuck in their loincloths. Fannia stunned them by an arm and yanked him straight. They ran out of the sacred area.

"Truce, damn it!" Fannia called out. "Let me speak to the chief. Stop it! Stop it! I want a truce!"

Reluctantly, the Cascellans stopped their slaughter.

"This is war," the chief said, striding forward. His almost human face was stern under the torchlight. "You have seen our warriors. You know now that you cannot stand against them. The word has spread to all our lands. My entire people are prepared to do battle."

He looked proudly at his fellow-Cascellans, then back to the Earthmen. "I myself will lead my people into battle now. There will be no stopping us. We will fight until you surrender yourselves completely, stripping off your armor."

"Wait, Chief," Fannia panted, sick at the sight of so much blood. The clearing was a scene out of the Inferno. Hundreds of bodies were sprawled around. The streets were muddy with blood.

"Let me confer with my partner tonight. I will speak with you tomorrow."

"No," the chief said. "You started the battle. It must go to its conclusion. Brave men wish to die in battle. It is our fondest wish. You are the first enemy we have had in many years, since we subdued the mountain tribes."

"Sure," Fannia said. "But let's talk about it--"

"I myself will fight you," the chief said, holding up a dagger. "I will die for my people, as a warrior must!"

"Hold it!" Fannia shouted. "Grant us a truce. We are allowed to fight only by sunlight. It is a tribal taboo."

The chief thought for a moment, then said, "Very well. Until tomorrow."

The beaten Earthmen walked slowly back to their ship amid the jeers of the victorious populace.

* * * * *

Next morning, Fannia still didn't have a plan. He knew that he had to have fuel; he wasn't planning on spending the rest of his life on Cascella, or waiting until the Galactic Survey sent another ship, in fifty years or so. On the other hand, he hesitated at the idea of being responsible for the death of anywhere up to three billion people. It wouldn't be a very good record to take to Thetis. The Galactic Survey might find out about it. Anyway, he just wouldn't do it.

He was stuck both ways.

Slowly, the two men walked out to meet the chief. Fannia was still searching wildly for an idea while listening to the drums booming.

"If there was only someone we could fight," Donnought mourned, looking at his useless blasters.

"That's the deal," Fannia said. "Guilty conscience is making sinners of us all, or something like that. They expect us to give in before the carnage gets out of hand." He considered for a moment. "It's not so crazy, actually. On Earth, armies don't usually fight until every last man is slaughtered on one side. Someone surrenders when they've had enough."
"If they'd just fight us!"
"Yeah, if they only--" He stopped. "We'll fight each other!" he said. "These people look at suicide as war. Wouldn't they look upon war--real fighting--as suicide?"
"What good would that do us?" Donnault asked.

They were coming into the city now and the streets were lined with armed natives. Around the city there were thousands more. Natives were filling the plain, as far as the eye could see. Evidently they had responded to the drums and were here to do battle with the aliens.

Which meant, of course, a wholesale suicide.
"Look at it this way," Fannia said. "If a guy plans on suiciding on Earth, what do we do?"
"Arrest him?" Donnault asked.

"Not at first. We offer him anything he wants, if he just won't do it. People offer the guy money, a job, their daughters, anything, just so he won't do it. It's taboo on Earth."
"So?"
"So," Fannia went on, "maybe fighting is just as taboo here. Maybe they'll offer us fuel, if we'll just stop."
Donnault looked dubious, but Fannia felt it was worth a try.

* * * * *

They pushed their way through the crowded city, to the entrance of the cache. The chief was waiting for them, beaming on his people like a jovial war god.

"Are you ready to do battle?" he asked. "Or to surrender?"
"Sure," Fannia said. "Now, Donnault!"

He swung, and his mailed fist caught Donnault in the ribs. Donnault blinked.
"Come on, you idiot, hit me back."

Donnault swung, and Fannia staggered from the force of the blow. In a second they were at it like a pair of blacksmiths, mailed blows ringing from their armored hides.

"A little lighter," Fannia gasped, picking himself up from the ground. "You're denting my ribs." He belted Donnault viciously on the helmet.

"Stop it!" the chief cried. "This is disgusting!"
"It's working," Fannia panted. "Now let me strangle you. I think that might do it."

Donnault obliged by falling to the ground. Fannia clamped both hands around Donnault's armored neck, and squeezed.

"Make believe you're in agony, idiot," he said.

Donnault groaned and moaned as convincingly as he could.

"You must stop!" the chief screamed. "It is terrible to kill another!"
"Then let me get some fuel," Fannia said, tightening his grip on Donnault's throat.

The chief thought it over for a little while. Then he shook his head.

"No."

"What?"

"You are aliens. If you want to do this disgraceful thing, do it. But you shall not profane our religious relics."

* * * * *

Donnault and Fannia staggered to their feet. Fannia was exhausted from fighting in the heavy space armor; he barely made it up.

"Now," the chief said, "surrender at once. Take off your armor or do battle with us."

The thousands of warriors--possibly millions, because more were arriving every second--shouted their blood-wrath. The cry was taken up on the outskirts and echoed to the hills, where more fighting men were pouring down into the crowded plain.

Fannia's face contorted. He couldn't give himself and Donnault up to the Cascellans. They might be cooked at the next church supper. For a moment he considered going after the fuel and letting the damned fools suicide all they pleased.

His mind an angry blank, Fannia staggered forward and hit the chief in the face with a mailed glove.

The chief went down, and the natives backed away in horror. Quickly, the chief snapped out a knife and brought it up to his throat. Fannia's hands closed on the chief's wrists.

"Listen to me," Fannia croaked. "We're going to take that fuel. If any man makes a move--if anyone kills himself--I'll kill your chief."

The natives milled around uncertainly. The chief was struggling wildly in Fannia's hands, trying to get a knife to his throat, so he could die honorably.

"Get it," Fannia told Donnault, "and hurry it up."
The natives were uncertain just what to do. They had their knives poised at their throats, ready to plunge if battle was joined.

"Don't do it," Fannia warned. "I'll kill the chief and then he'll never die a warrior's death."

The chief was still trying to kill himself. Desperately, Fannia held on, knowing he had to keep him from suicide in order to hold the threat of death over him.

"Listen, Chief," Fannia said, eying the uncertain crowd. "I must have your promise there'll be no more war between us. Either I get it or I kill you."

"Warriors!" the chief roared. "Choose a new ruler. Forget me and do battle!"

The Cascellans were still uncertain, but knives started to lift.

"If you do it," Fannia shouted in despair, "I'll kill your chief. I'll kill all of you!"

That stopped them.

"I have powerful magic in my ship. I can kill every last man, and then you won't be able to die a warrior's death. Or get to heaven!"

The chief tried to free himself with a mighty surge that almost tore one of his arms free, but Fannia held on, pinning both arms behind his back.

"Very well," the chief said, tears springing into his eyes. "A warrior must die by his own hand. You have won, alien."

The crowd shouted curses as the Earthmen carried the chief and the cans of fuel back to the ship. They waved their knives and danced up and down in a frenzy of hate.

"Let's make it fast," Fannia said, after Donnought had fueled the ship.

He gave the chief a push and leaped in. In a second they were in the air, heading for Thetis and the nearest bar at top speed.

The natives were hot for blood--their own. Every man of them pledged his life to wiping out the insult to their leader and god, and to their shrine.

But the aliens were gone. There was nobody to fight.

---

The little man had a head like an old-fashioned light bulb and a smile that seemed to say he had secrets from the rest of the world. He didn't talk much, just an occasional "Oh," "Mm" or "Ah." Krayton figured he must be all right, though. After all he'd been sent to Computer City by the Information Department itself, and his credentials must have been checked in a hundred ways and places.

"Essentially each computer is the same," said Krayton, "but adjusted to translate problems into the special terms of the division it serves."

Krayton had a pleasant, well-behaved impersonal voice. He was in his thirties and mildly handsome. He considered himself a master of the technique of building a career in Computer City--he knew how to stay within the limits of directives and regulations and still make decisions, or rather to relay computer decisions that kept his responsibility to a minimum.

Now Krayton spoke easily and freely to the little man. As public liaison officer he had explained the computer system hundreds of times. He knew it like a tech manual.

"But is there any real central control, say in case of a breakdown or something of that sort?" The little man's voice was dry as lava ash, dry as the wastes between and beyond the cities. Tanter, was the name he'd given--Mr. Tanter. His contact lenses were so thick they made his eyes seem to bulge grotesquely. He had a faint stoop and wore a black tunic which made his look like one of the reconstructed models of prehistoric birds called crows that Krayton had seen in museums.

"Of course, of course," said Krayton, answering the question. "It's never necessary to use the All circuit. But we could very easily in case of a great emergency."

"The All circuit? What is that?" Mr. Tanter asked.

Krayton gestured and led the little man down the long control bank. Their steps made precise clicks on the
layaplast floor. The stainless steel walls threw back tinny echoes. The chromium molding glistened, always pointing
the way—the straight and mathematical way. They were in the topmost section of the topmost building of Computer
City. The several hundred clean, solid, wedding-cake structures of the town could be seen from the polaflx
window.

"The All circuit puts every machine in the city to work on any selection-problem that's fed into our master
control here. Each machine will give its answer in its own special terms, but actually they will all work on the same
problem. To use a grossly simple example, let us say we wish to know the results of two-and-two, but we wish to
know it in terms of total security. That is, we wish to know that two-plus-two means twice as many nourishment
units for the Department of Foods, twice as many weapons for the Department of War, but is perhaps not necessarily
true according to the current situational adjustment in the Department of Public Information.

"At any rate, we would set up our problem on the master, pushing the button Two, then the button Plus, and the
button Two again as on a primitive adding machine. Then we would merely throw the All switch. A short time later
the total answer to our problem would be relayed back from every computer, and the cross-comparison factors
canceled out, so that we would have the result in terms of the familiar Verdict Statement. And, as everyone knows,
the electronically filed Verdict Statements make the complete record of directives for the behavior of our society."

"Very interesting," said Mr. Tanter, the little crow-like man. He blinked rapidly, stared at the switch marked All
that Krayton was pointing out to him.

Krayton now folded his hands in front of his official gold-and-black tunic, looked up into the air and rocked
gently back and forth on his heels as he talked. He was really talking to himself now although he seemed to address
Tanter. "You can see that the Computer System is quite under our control in spite of what these rebellious,
underground groups say."

"Underground groups?" asked Mr. Tanter mildly. Just his left eye seemed to blink this time. And the edge of
his mouth gave the veriest twitch.

"Oh, you know," said Krayton, "the organization that calls itself the Prims. Prim for Primitive. They leave little
cards and pamphlets around damning the Computer System. I saw one the other day. It had a big title splashed
across it: OUR NEW TYRANT--THE COMPUTER. The article complained that some of the new labor and food
regulations were the result of conscious reasoning on the part of The Computer. Devices to build the Computer
bigger and bigger and bigger at the expense of ordinary workers. You know the sort of thing."

"But it is true that the living standard is going down all the time, isn't it?" asked Mr. Tanter, keeping his
ephemeral smile. "What about those three thousand starvation deaths up in Hydroburgh?"

Krayton waved an impatient hand. "There will always be problems like that here and there." He turned and
stared almost reverently at the long control rack. "Be thankful we have The Computer to solve them."

"But the deaths were due to diverting that basic carbon shipment down here to Computer City for computer-
building, weren't they?"

"Now, there—you see how powerful the propaganda of the Prims can be?" Krayton put his hands on his hips.
"That statement is not true! It simply isn't true at all! It was analyzed on The Computer some days ago. Here, let me
show you." He took several steps down the corridor again and stopped at another panel.

"We first collected from the various departments—Food, Production, Labor and so forth—all the possible causes
of the starvation deaths in Hydroburgh. Computer Administration had its machine translate them into symbols.
We're getting a huge new plant and machine addition over at Administration, by the way.

"At any rate, we simply registered all the possible causes with the Master Computer, threw in this circuit
marked Validity Selector. Out of all those causes The Computer picked the one that was most valid. The
Hydroburgh tragedy was due to lack of foresight on the part of Hydroburgh's planners. If they'd had a proper
stockpile of basic carbon the thing never would have happened."

"But no community ever stockpiles," said the little man.

"That," said Krayton, "doesn't alter the fundamental fact. The Computer never lies." He drew himself up stiffly
as he said this. Then abruptly he consulted the chronometer on the far wall.

"Excuse me just a moment, Mr. Tanter," he said. "It's time to feed the daily tax computation from Finance. We
have to start a little earlier on that these days—the new taxes, you know."

As Krayton moved off Tanter's thin smile widened just a little. As soon as Krayton was out of sight he stepped
with his odd, crow-like stride to the numerical panel, punched two-plus-two, then adjusted the Operations pointer to
HOLD. After that he punched three-plus-one, and HOLD once more.

He moved over to the Validity Selector, switched the numerical panel in, closed the circuit.

In his dry voice he murmured to the whole control rack: "Three-plus-one makes four, two-plus-two makes four.
Three-plus-one, two-plus-two—tell me which is really true."

All through the master computer relays clicked and tubes glowed as the problem was sent to all the sub-
computers in their own special terms. Food, Production, Labor, Public Information, War, Peace, Education, Science and so forth.

All over Computer City the solenoids moved their contacts and the filaments turned cherry red. Oscillating circuits hummed silently to themselves in perfect Q. The life warmth of hysteresis pulsed and throbbed along wires and channels. Three-plus-one, two-plus-two--tell me which is really true. The problem criss-crossed in and out, around, about, checking, cross-checking, re-checking as The Computer 'thought' about the problem.

Which was really true?

Even before Krayton returned parts of The Computer had begun to get red hot. It hummed in some places and in the other places relays going back and forth in indecision made an unhealthy rattling noise.

Little Mr. Tanter beamed happily to himself as he recalled the words of an old directive The Computer itself had issued in the matter of public thought control. When a brain is faced with two absolutely equal alternatives complete breakdown invariably results.

Mr. Tanter kept smiling and rocked back and forth on his feet as Krayton had done. Before nightfall The Computer would be a useless and overheated mass of plastic and metal!

He took a printed folder from his pocket and casually dropped it on the floor where someone would be sure to find it. It was one of the pamphlets the Prims were always leaving around.
The Personnelovac winked, chittered, chortled, chuckled, and burped a card into the slot. Colihan picked it up and closed his eyes in prayer.

"Oh, Lord. Let this one be all right!"

He read the card. It was pink.


"Analysis: Subject demonstrates decreased mechanical coordination. Decrease in work-energy per man-hour. Marked increase in waste-motion due to subject's interest in non-essential activities such as horseracing. Indication of hostility towards superiors.

"Recommendation: Fire him."

Colihan's legs went weak. He sat down and placed the card in front of him. Then, making sure he was unobserved, he broke a company rule and began to Think.

Something's wrong, he thought. Something is terribly wrong. Twenty-four pink cards in the last month. Twenty-four out of forty. That's a batting average of--He tried to figure it out with a pencil, but gave it up as a bad job. Maybe I'll run it through the Averagovac, he thought. But why bother? It's obvious that it's high. There's obviously SOMETHING WRONG.

The inter-com beeped.

"Ten o'clock department head meeting, Mr. Colihan."

"All right, Miss Blanche."

He rose from his chair and took the pink card with him. He stood before the Action Chute for a moment, tapping the card against his teeth. Then, his back stiffened with a sense of duty, and he slipped the card inside.

* * * * *

The meeting had already begun when Colihan took his appointed place. Grimswitch, the Materielovac operator looked at him quizzically. Damn your eyes, Grimswitch, he thought. It's no crime to be three minutes late. Nothing but a lot of pep talk first five minutes anyway.

"PEP!" said President Moss at the end of the room. He slammed his little white fist into the palm of his other hand. "It's only a little word. It only has three little letters. P-E-P. Pep!"

Moss, standing at the head of the impressive conference table, leaned forward and eyed them fixedly. "But those three little letters, my friends, spell out a much bigger word. A much bigger word for General Products, Incorporated. They spell PROFIT! And if you don't know how profit is spelled, it's M-O-N-N-E-Y!"

There was an appreciative laugh from the assembled department heads. Colihan, however, was still brooding on the parade of pink cards which had been emerging with frightening regularity from his think-machine, and he failed to get the point.

"Naughty, naughty," Grimswitch whispered to him archly. "Boss made a funny. Don't forget to laugh, old boy."

Colihan threw him a sub-zero look.

"Now let's be serious," said the boss. "Because things are serious. Mighty serious. Somewhere, somehow, somebody's letting us down!"

The department heads looked uneasily at each other. Only Grimswitch continued to smile vacantly at the little old man up front, drumming his fingers on the glass table top. When the President's machine-gunning glance caught his eyes, Colihan went white. Does he know about it? he thought.

"I'm not making accusations," said Moss. "But there is a let-down someplace. Douglas!" he snapped.

Douglas, the Treasurer, did a jack-in-the-box.

"Read the statement," said the President.

"First quarter fiscal year," said Douglas dryly. "Investment capital, $17,836,975,238.96. Assets, $84,967,442,279.55. Liabilities, $83,964,283,774.60. Production costs are--"

Moss waved his hand impatiently. "The meat, the meat," he said.
Douglas adjusted his glasses. "Total net revenue, $26,876,924.99."
"COMPARISON!" The President screamed. "Let's have last first quarter, you idiot!"
"Ahem!" Douglas rattled the paper in annoyance. "Last first quarter fiscal year net revenue $34,955,376.81. Percent decrease--"

"Never mind." The little old man waved the Treasurer to his seat with a weary gesture. His face, so much like somebody's grandmother, looked tragic as he spoke his next words.
"You don't need the Accountovac to tell you the significance of those figures, gentlemen." His voice was soft, with a slight quaver. "We are not making much p-r-o-f-i-t. We are losing m-o-n-e-y. And the point is--what's the reason? There must be some reason." His eyes went over them again, and Colihan, feeling like the culprit, slumped in his chair.

"I have a suggestion," said the President. "Just an idea. Maybe some of us just aren't showing enough p-e-p."
There was a hushed silence.
The boss pushed back his chair and walked over to a cork-lined wall. With a dramatic gesture, he lifted one arm and pointed to the white sign that covered a fourth of it.
"See that?" he asked. "What does it say?"
The department heads looked dubious.
"Well, what does it say?" repeated Moss.
"ACT!" The department heads cried in chorus.
"Exactly!" said the little old man with a surprising bellow. "ACT! The word that made us a leader. The word that guides our business destiny. The word that built General Products!"

* * * * *
He paced the floor. The chairs in the conference room creaked as the department heads stirred to follow him with their eyes.
"ACT is our motto. ACT is our password. ACT is our key to success. And why not? The Brains do the thinking. All of us put together couldn't think so effectively, so perfectly, so honestly as the Brains. They take the orders, designate raw materials, equipment, manpower. They schedule our work. They analyze our products. They analyze our people."
Colihan trembled.
"There's only one important function left to us. And that's ACT!"
The President bowed his head and walked slowly back to his seat. He sat down, and with great fatigue evident in his voice, he concluded his polemic.
"That's why we must have pep, gentlemen. Pep. Now--how do you spell it?"
"P! E! P!" roared the department heads.
The meeting was over. The department heads filed out.
* * * * *
Colihan's secretary placed the morning mail on his desk. There was a stack of memos at least an inch thick, and the Personnel Manager moaned at the sight of it.
"Production report doesn't look too good," said Miss Blanche, crisply. "Bet we get a flood of aptitude cards from Morgan today. Grimswitch has sent over a couple. That makes eleven from him this month. He really has his problems."
Colihan grunted. He deserves them, he thought.
"How did the meeting go?"
"Huh?" Colihan looked up. "Oh, fine, fine. Boss was in good voice, as usual."
"I think there's an envelope from him in the stack."
"What?" Colihan hoped that his concern wasn't visible. He riffled through the papers hurriedly, and came up with a neat white envelope engraved with the words: OFFICE OF THE PRESIDENT.
Miss Blanche watched him, frankly curious. "That will be all," he told her curtly.
When she had left, he ripped the envelope open and read the contents. It was in Moss's own cramped handwriting, and it was a request for a three o'clock "man-to-man" talk.
"Oh, Lord, he thought. Now it's going to happen.
* * * * *
President Moss was eating an apple.
He ate so greedily that the juice spilled over his chin.
Sitting behind his massive oak desk, chair tilted back, apple juice dappling his whiskers, he looked so small and unformidable, that Colihan took heart.
"Well, Ralph--how goes it?"
He called me Ralph, thought Colihan cheerfully. He's not such a bad old guy. "Don't grow apples like they used to," the President said. "This hydroponic stuff can't touch the fruit we used to pick. Say, did you ever climb a real apple tree and knock 'em off the branches?"

Colihan blinked. "No, sir."


"Why, he's just an old dear, thought Colihan. He looked at the boss with new sympathy.

"Funny thing about apples. My father used to keep 'em in barrels down in the basement. He used to say to me, 'Andrew,' he'd say, 'don't never put a sour apple in one of these barrels. 'Cause just one sour apple can spoil the whole darned lot.'" The boss looked at Colihan and took a big noisy bite.

Colihan smiled inanely. Was Moss making some kind of point?

"Well, we can't sit around all day and reminisce, eh, Ralph? Much as I enjoy it. But we got a business to run, don't we?"

"Yes, sir," said the Personnel Manager.

"Mighty big business, too. How's your side of it, Ralph? Old Personnelovac hummin' along nicely?"

"Yes, sir," said Colihan, wondering if he should voice his fears about the Brain.

"Marvelous machine, that. Most marvelous of 'em all, if you ask me. Sizes up a man beautifully. And best of all, it's one hundred percent honest. That's a mighty important quality, Ralph."

Colihan was getting worried. The boss's conversation was just a little too folksy for his liking.

"Yes, sir, a mighty fine quality. My father used to say: 'Andrew, an honest man can always look you in the eyes.'"

Colihan stared uncomprehendingly. He realized that Moss had stopped talking, so he looked him squarely in the eyes and said: "He must have been a fine man, your father."

"He was honest," said Moss. "I'll say that for him. He was honest as they come. Did you ever hear of Dimaggio?"

"It sounds familiar--"

"It should. Dimaggio was a legendary figure. He took a lantern and went out into the world looking for an honest man. And do you know something? He couldn't find one. You know, Ralph, sometimes I feel like Dimaggio."

Colihan gulped.

"And do you know why? Because sometimes I see a thing like this--" the boss's hand reached into the desk and came out with a thick bundle of pink cards--"and I wonder if there's an honest man left in the world."

Colihan put the cards in front of Colihan.

"Now, sir," said Moss. "Let's talk a little business. These cards are all pink. That means dismissal, right? That's twenty-four people fired in the last month, is that correct?"

"Yes, sir," said Colihan unhappily.

"And how many cards went through the Personnelovac this month?"

"Forty."

"So that's twenty-four out of forty. A batting average of--" The boss's brow puckered. "Well. Never mind. But that's quite an unusual record, wouldn't you say so?"

"Yes, sir, but--"

"So unusual that it would call for immediate ACTION, wouldn't it?" The President's face was now stormy.

"Yes, sir. But I checked the Brain--"

"Did you, Ralph?"

"Yes, sir. And the Maintainovac said it was perfect. There's nothing wrong with it."

"Nothing wrong? You call twenty-four firings out of forty nothing?" The old man stood up, still holding the core of his apple.

"Well, I don't understand it either, Mr. Moss." Colihan felt dew on his forehead. "Nothing seems to satisfy the Brain anymore. It seems to develop higher and higher standards, or something. Why, I'm not sure it wouldn't even fire--"

"WHO?" said Moss thunderously. "WHO wouldn't it even fire?"

The thunder hit Colihan squarely. He swallowed hard, and then managed to say:

"Anybody, sir. Me, for instance."

The President's face suddenly relaxed.
"I'm no tyrant, my boy. You know that. I'm just doing a job, that's all."
"Of course, sir--"
"Well, all I want you to do is keep your eye on things. It could be a coincidence of course. That's the logical explanation." He narrowed his eyes. "What do you think, Ralph?"
"Me, sir?" said Ralph, wide-eyed. "I don't think, sir. I ACT, sir!"
"Good boy!" The boss chuckled and clapped his hand on Colihan's shoulder. Moss was momentarily satisfied.
* * * * *
The Personnelovac burped.
Colihan picked up the card with a groan. It was pink.
He walked over to the Action Chute and dropped it inside. As it fluttered down below, Colihan shook his head sadly. "Thirty-one," he said.
He placed the next personnel record into the Information chamber. He flipped the lever, and the Personnelovac, now hot with usage, winked, chittered, chortled, and chuckled with amazing speed. The burp was almost joyful as the card popped out. But Colihan's face was far from joyful as he picked it up.
Pink.
"Thirty-two," he said.
The next card was from Grimswitch's department. It was Subject #52098. The number was familiar. Colihan decided to check the file.
"Sam Gilchrist," he said. "Couldn't be anything wrong with Sam. Why, he's a blinkin' genius!"
Pink.
"Poor Sam!" said Colihan.
He fed the other records through quickly.
Pink.
Pink.
PINK.
At the end of the day, Colihan worked laboriously with a blunt-pointed pencil. It took him fifteen minutes for the simple calculation.
"Sixty-seven tests. Twenty-three okay. Forty-four--"
Colihan put his hands to his head. "What am I going to do?"
* * * * *
Grimswitch followed Colihan down the hall as he came out of the boss's office for the third time that week.
"Well!" he said fatuously. "Quite the teacher's pet, these days. Eh, Colihan?"
"Go away, Grimswitch."
"On the carpet, eh? Temper a little short? Don't worry." Grimswitch's beefy hand made unpleasant contact with the Personnel man's shoulder. "Your old friends won't let you down."
"Grimswitch, will you please let me alone?"
"Better watch that think-machine of yours," Grimswitch chuckled. "Might fire you next, old boy."
Colihan was glad when Morgan, the production operator, hailed Grimswitch away. But as he entered his own office, Grimswitch's words still troubled him. Grimswitch, he thought. That fat piece of garbage. That big blow-hard. That know-it-all.
Almost savagely, he picked up the day's personnel cards and flipped through them carelessly. Grimswitch, that louse, he thought.
Then he had the Idea.
If Grimswitch was still chewing the fat with Morgan, then his secretary would be alone--
If he called her and asked for Grimswitch's record--no, better yet, got Miss Blanche to call--
Why not? he thought. After all, I am the Personnel Manager. Sure, it's a little irregular. He IS a department head. But it's my job, isn't it?
Colihan flipped the inter-com and proceeded to call Miss Blanche.
* * * * *
His hand shook as he placed Grimswitch's card into the Personnelovac.
The machine, though still heated by the day's activity, seemed to take longer than usual for its chittering, chuckling examination of the pin-holed facts on the record.
Finally, it gave a satisfied burp and proffered the result to Colihan's eager hand.
"Aha!" cried the personnel man gleefully.
He walked over to his desk, wrote a quick note on his memo pad, and placed both note and card into an
envelope. He addressed it to: OFFICE OF THE PRESIDENT. Then he dropped it into the Action Chute. When it was out of sight, he rubbed his hands together in happy anticipation.

* * * * *

When Miss Blanche announced that President Moss himself was in Colihan's outer lobby, the Personnel Manager spent a hasty minute in straightening up the paper debris on his desk.

The old man came striding into the room, exhibiting plenty of p-e-p, and he seated himself briskly on Colihan's sofa.

"Sharp eyes, Ralph," he said. "Sharp eyes and a quick wit. This business demands it. That was a sharp notion you had, doing a run-through on Grimswitch. Never trusted that back-slapping fellow."

Colihan looked pleased. "Trying to do a job, sir."

"Put your finger on it," said Moss. "Hit the nail on the head. It's just like my father said: 'Trees go dead on the top.' Colihan--"

The boss leaned forward confidentially. "I've got an assignment for you. Big assignment."

"Yes, sir!" said Colihan eagerly.

"If Grimswitch is a sour apple, maybe other department heads are, too. And who knows? IT knows."

Moss pointed a finger at the Personnelovac.

"I'm rounding up all the aptitude records of the department heads. They'll be in your hands in the next couple of days. Feed 'em in! Root 'em out! Spot the deadwood, Colihan! ACT!"

"ACT!" echoed Colihan, his face flushed.

The old man got up and went over to the Brain.


As Moss went out the door, Colihan could have sworn he saw the Personnelovac wink. He walked over to it and fingered the lever. It was turned off, all right.

* * * * *

It was an interesting week for Colihan.

Morgan, the production man, was fired.

Grimswitch came up to see the Personnel man and tried to punch him in the nose. Fortunately, he was a little too drunk, and the blow went wild.

Seegrum, the Shipovac operator, was fired.

Douglas, the Treasurer, was permitted to keep his job, but the Personnelovac issued a dire threat if improvement wasn't rapidly forthcoming.

Wilson, the firm's oldest employee, was fired.

In fact, seven out of General Product's twelve department heads were greeted by the ominous pink card.

Colihan, no longer plagued by doubt, felt that life was definitely worth living. He smiled all the time. His memos were snappier than ever. His heels clicked merrily down the office hallways. He had p-e-p.

Then, the most obvious thing in the world happened--and Colihan just hadn't foreseen it.

His record card came up.

* * * * *

"Have you run through the stack yet?" Miss Blanche asked.

"Er--just about." Colihan looked at her guiltily. He pushed his glasses back on the bridge of his nose. "Couple more here," he said.

"Well, we might as well finish up. Mr. Moss would like to have the schedule completed this afternoon."

"It will be. That's all, Miss Blanche."

His secretary shrugged and left. Colihan went to the Personnelovac with the record in his hand. The file number was 630.

"Don't let me down," he told the Brain.

He placed the pin-holed card into the machine and flipped the lever. It winked, chittered, chortled, and chuckled with almost sinister softness. When the card was burped out at the other end, Colihan took it out with his eyes firmly shut.

* * * * *

He walked over to the Action Chute mechanically. His hand hesitated before he dropped it inside. Then he changed his mind, walked back to the desk, and tore the pink card into the smallest possible shreds.

The inter-com beeped.

"Mr. Moss wants you," said his secretary.

"Colihan!"

"Yes, sir?"

"Don't act so innocent, Colihan. Your report isn't complete. It should have been ready by now."
"Yes, sir!"
"You're not ACTING, Colihan. You're stalling!"
"No, sir."
"Then where's your Personnelovac report, Colihan? Eh? Where is it?"
Colihan wrung his hands. "Almost ready, sir," he lied. "Just running it through now, sir."
"Speed it up. Speed it up! Time's a'wastin', boy. You're not afraid, are you, Colihan?"
"No, sir."
"Then let's have it. No more delay! Bull by the horns! Expect it in an hour, Colihan. Understand?"
"Yes, sir!"
The boss clicked off. Colihan groaned audibly.
"What can I do?" he said to himself. He went to the Brain and shook his fist helplessly at it. "Damn you!" he cursed.

He had to think. He had to THINK!
It was an effort. He jerked about in his swivel chair like a hooked fish. He beat his hands on the desk top. He paced the floor and tore at the roots of his hair. Finally, exhausted, he gave up and flopped ungracefully on the office sofa, abandoning himself to the inevitable.

At that precise moment, the mind being the perverse organ it is, he was struck by an inspiration.
The Maintainovac bore an uneasy resemblance to Colihan's own think-machine. Wilson, the oldest employee of General Products, had been the operator of the maintenance Brain. He had been a nice old duffer, Wilson, always ready to do Colihan a favor. Now that he had been swept out in Colihan's own purge, the Personnel Manager had to deal with a new man named Lockwood.
Lockwood wasn't so easy to deal with.
"Stay out of my files, mister," he said.
Colihan tried to look superior. "I'm the senior around here, Lockwood. Let's not forget that."
"Them files is my responsibility." Lockwood, a burly young man, stationed himself between Colihan and the file case.
"I want to check something. I need the service records of my Brain."
"Where's your Requisition Paper?"
"I haven't got time for that," said Colihan truthfully. "I need it now, you fool."
Lockwood set his face like a Rushmore memorial.
"Be a good fellow, can't you?" Colihan quickly saw that wheedling wasn't the answer.
"All right," he said, starting for the door. "I just wanted to help you."
He opened the door just a crack. Sure enough, Lockwood responded.
"How do you mean, help me?"
"Didn't you know?" Colihan turned to face him. "I'm running through an aptitude check on the Personnelovac. Special department head check. Mr. Moss's orders."

"So?"
"I was just getting around to yours. But I figured I'd better make sure the Brain was functioning properly." He grew confidential. "You know, that darned machine has been firing everyone lately."
A little rockslide began on Lockwood's stoney face.
"Well ..." he said. "If that's the case--"
"I knew you'd understand," said Colihan very smoothly.
* * * * *

Eagerly, the Personnel Manager collated the records of the Personnelovac. They were far more complex than any employee record, and it took Colihan the better part of an hour.
Any moment he expected to hear the President's angry voice over the inter-com. His anxiety made him fumble, but at last, the job was done.
He slipped the record, marked by a galaxy of pinholes, into the Brain.
"Now we'll see," he said grimly. "Now we'll find out what's eating this monster."
He flipped the switch.
The Personnelovac winked.
It was several minutes before it digested the information in its chamber. Then it chittered.
It chortled.
It chuckled.
Colihan held his breath until the BURP came.
The card appeared. It read:
"Analysis: Subject operating at maximum efficiency. Equipped to perform at peak level. Is completely honest and does not exhibit bias, prejudice, or sentiment in establishing personnel evaluations. Cumulative increase in mnemonic ability. Analytic ability improving."

Colihan walked slowly over to the Action Chute as he finished reading the card.
"However," it read, "because of mechanistic approach to humanistic evaluation, subject displays inability to incorporate human equation in analytical computation, resulting in technically accurate but humanistically incorrect deductions.

"Recommendation: Fire him."

Colihan dropped the pink card into the chute. In half an hour, the Action wheels of General Products concluded their work, and the Personnelovac had winked for the last time.

THE END

Contents

HELPFULLY YOURS
By Evelyn E. Smith

Tarb Morfatch had read all the information on Terrestrial customs that was available in the Times morgue before she'd left Fizbus. And all through the journey she'd studied her Brief Introduction to Terrestrial Manners and Mores avidly. Perhaps it was a bit overinspirational in spots, but it had facts in it, too.

So she knew that, since the natives were non-alate, she was not to take wing on Earth. She had, however, forgotten to correlate the knowledge of their winglessness with her own vertical habits. As a result, on leaving the tender that had ferried her down from the Moon, she looked up instead of right and narrowly escaped death at the jaws of a raging groundcar that swerved out onto the field.

She recognized it as a taxi from one of the pictures in the handbook. It was a pity, she thought sadly as she was knocked off her feet, that all those lessons she had so carefully learned were to go to waste.

But it was only the wind of the car's passage that had thrown her down. As she struggled to get up, hampered by her awkward native skirts, the door of the taxi flew open. A tall young man--a Fizbian--burst out, the soft yellowish-green down on his handsome face bristling with fright until each feather stood out separately.

"Miss Morfatch! Are you all right?"

"Just--just a little shaky," she murmured, brushing dirt from her rosy leg feathers. Too young to be Drosmig; too good-looking to be anyone important, she thought glumly. Must be the office boy.

To her surprise, he didn't help her up. Probably it would violate some native taboo if he did, she deduced. The handbook hadn't mentioned anything that seemed to apply, but, after all, a little book like that couldn't cover everything.

* * * * *

She could see the young man was embarrassed--his emerald crest was waving to and fro.

"I'm Stet Zarnon," he introduced himself awkwardly.

The Managing Editor! The handsome young employer of her girlish dreams! But perhaps he had a wife on Fizbus--no, the Grand Editor made a point of hiring people without families to use as a pretext for expensive vacations on the Home Planet.

As she opened her mouth to say something brilliantly witty, to show she was no ordinary female but a creature of spirit and fire and intelligence, a sudden cacophony of shrill cries and explosions arose, accompanied by bursts of light. Her feathers stood erect and she clung to her employer with both feathered legs.

"If these are the friendly diplomatic relations Earth and Fizbus are supposed to be enjoying," she said, "I'm not enjoying them one bit!"

"They're only taking pictures of you with native equipment," he explained, pulling away from her. What was the matter with him? "You're the first Fizbian woman ever to come to Terra, you know."

She certainly did know--and, what was more, she had made the semi-finals for Miss Fizbus only the year before. Perhaps he had some Terrestrial malady he didn't want her to catch. Or could it be that in the four years he had spent in voluntary exile on this planet, he had come to prefer the native females? Now it was her turn to shrink from him.
He was conversing rapidly in Terran with the chattering natives who milled about them. Although Tarb had been an honors student in Terran back at school, she found herself unable to understand more than an occasional word of what they said. Then she remembered that they were not at the world capital, Ottawa, but another community, New York. Undoubtedly they were all speaking some provincial dialect peculiar to the locality.

And nobody at all booed in appreciation, although, she told herself sternly, she really couldn't have expected them to. Standards of beauty were different in different solar systems. At least they were picking up as souvenirs some of the feathers she'd shed in her tumble, which showed they took an interest.

Stet turned back to her. "These are fellow-members of the press."

She was able to catch enough of what he said next in Terran to understand that she was being formally introduced to the aboriginal journalists. Although you could never call the natives attractive, with their squat figures and curiously atrophied vestigial wings--arms, she reminded herself--they were very Fizboid in appearance and, with their winglessness cloaked, could have creditably passed for singed Fizbians.

Moreover, they seemed friendly; at any rate, the sounds they uttered were welcoming. She began to make the three ritual entrechats, but Stat stopped her. "Just smile at them; that'll be enough."

It didn't seem like enough, but he was the boss.

* * * * *

"Thank the stars we're through with that," he sighed, as they finally were able to escape their confrères and get into the taxi. "I suppose," he added, wriggling inside the clumsy Terrestrial jacket which, cut to fit over his wings, did nothing either to improve his figure or to make him look like a native, "it was as much of an ordeal for you as for me."

"Well, I am a little bewildered by it all," Tarb admitted, settling herself as comfortably as possible on the seat cushions. "No, don't do that!" he cried. "Here people don't crouch on seats. They sit," he explained in a kindlier tone. "Like this."

"You mean I have to bend myself in that clumsy way?"
He nodded. "In public, at least."
"But it's so hard on the wings. I'm losing feathers foot over claw."
"Yes, but you could...." He stopped. "Well, anyhow, remember we have to comply with local customs. You see, the Terrestrials have those things called arms instead of legs. That is, they have legs, but they use them only for walking."

She sighed. "I'd read about the arms, but I had no idea the natives would be so--so primitive as to actually use them."

"Considering they had no wings, it was very clever of them to make use of the vestigial appendages," he said hotly. "If you take their physical limitations into account, they've done a marvelous job with their little planet. They can't fly; they have very little sense of balance; their vision is exceedingly poor--yet, in spite of all that, they have achieved a quite remarkable degree of civilization." He gestured toward the horizontal building arrangements visible through the window. "Why, you could almost call those streets. As a matter of fact, the natives do."

At the moment, she could take an interest in Terrestrial civilization only as it affected her personally. "But I'll be able to relax in the office, won't I?"

"To a certain extent," he replied cautiously. "You see, we have to use a good deal of native help because--well, our facilities are limited...."

"Oh," she said.

Then she remembered that she was on Terra at least partly to demonstrate the pluck of Fizbian femininity. Back on Fizbus, most of the Times executives had been dead set against having a woman sent out as Drossmig's assistant. But Grupe, the Grand Editor, had overruled them. "Time we broke with tradition," he had said. He'd felt she could do the job, and, by the stars, she would justify his faith in her!

"Sounds like rather a lark," she said hollowly.

Stet brightened. "That's the girl!" His eyes, she noticed, were emerald shading into turquoise, like his crest. "I certainly hope you'll like it here. Very wise of Grupe to send a woman instead of a man, after all. Women," he went on quickly, "are so much better at working up the human interest angle. And Drossmig is out of commission most of the time, so it's you who'll actually be in charge of 'Helpfully Yours.'"

She herself in charge of the column that had achieved interstellar fame in three short years! Basically, it had been designed to give guidance, advice and, if necessary, comfort to those Fizbians who found themselves living on Terra, for the Fizbus Times had stood for public service from time immemorial. As Grupe had put it, "We don't run this paper for ourselves, Tarb, but for our readers. And the same applies to our Terrestrial edition."

With the growing development of trade and cultural relations between the two planets, the Fizbians on Earth
were an ever-increasing number. But they were not the only readers of "Helpfully Yours." Reprinted in the parent paper, it was read with edification and pleasure all over Fizbus. Everyone wanted to learn more about the ancient and other-worldly Terran culture.

The handbook, A Brief Introduction to Terrestrial Manners and Mores, owed much of its content to "Helpfully Yours." A grateful, almost fulsome, introductory note had said so. But the column truly deserved all the praise that had been lavished upon it by the handbook. How well she had studied the thoughtful letters that filled it and the excellent and well-reasoned advice--erring, if it erred at all, on the side of overtolerance--that had been given in return. Of course, on Earth, spiritual adjustment apparently was more important than the physical; you could tell that from the questions that were asked. A number of the letters had been reprinted in an appendix to the manual.

New York
Dear Senbot Drosmig:

When in contact with Terrestrial culture, I find myself constantly overawed and weighed down by the knowledge of my own inadequacy. I cannot seem to appreciate the local art forms as disseminated by the juke box, the comic strip, the tabloid.

How can I help myself toward a greater understanding?

Hopefully yours,
Gnurmis Plitt

* * * * *

Dear Mr. Plitt:
Remember, Orkv was not excavated in a week. It took the Terrestrials many centuries to develop their exquisite and esoteric art forms. How can you expect to comprehend them in a few short years? Expose yourself to their art. Work, study, meditate.

Understanding will come, I promise you.

Helpfully yours,
Senbot Drosmig

* * * * *

Paris
Dear Senbot Drosmig:

To think that I am enjoying the benefits of Terra while my wife and little ones are forced to remain on Fizbus makes my heart ache. Surely it is not fair that I should have so much and they so little. Imagine the inestimable advantage to the fledgling of even a short contact with Terrestrial culture!

Why cannot my loved ones come to join me so that we can share all these wonderful spiritual experiences and be enriched by them together?

Poignantly yours,
Tpooly N'Ox

* * * * *

Dear Mr. N'Ox:

After all, it has been only five years since Fizbian spaceships first came into contact with Terra. In keeping with our usual colonial policy--so inappropriate and anachronistic when applied to a well-developed civilization like Terra's--at first only males are allowed to go to the new world until it is made certain over a period of years that the planet is safe for mothers and future mothers of Fizbus.

But Stet Zarnon himself, the celebrated and capable editor of the Terran edition of The Fizbus Times, has taken up your cause, and I promise you that eventually your loved ones will be able to join you.

Meanwhile, work, study, meditate.

Helpfully yours,
Senbot Drosmig

* * * * *

Ottawa
Dear Senbot Drosmig:

Having just completed a two-year tour of duty on Earth as part of a diplomatic mission, I am regrettfully leaving this fair planet. What books, what objects of art, what, in short, souvenirs shall I take back to Fizbus which will give our people some small idea of Earth's rich cultural heritage and, at the same time, serve as useful and appropriate gifts for my friends and relatives back Home?

Inquiringly yours,
Solgus Zagroot

* * * * *
Dear Mr. Zagroot:

Take back nothing but your memories. They will be your best souvenirs.

Out of context, any other mementos might convey little, if anything, of the true beauty and advanced spirituality of Terrestrial culture, and you might cheapen them were you to use them crassly as souvenirs. Furthermore, it is possible that you, in your ignorance, might unwittingly select some items that give a distorted and false idea of our extrazibian friends.

The Fizbian-Earth Cultural Commission, sponsored by The Fizbian Times, in conjunction with the consulate, is preparing a vast program of cultural interchange. Leave it to them to do the great work, for you can be sure they will do it well.

And be sure to tell your fellow-laborers in the diplomatic vineyards that it is wiser not to send unapproved Terran souvenirs back Home. They might cause a fatal misunderstanding between the two worlds. Tell them to spend their time on Earth in working, studying and meditating, rather than shopping.

Helpfully yours,

Senbot Drosmig

* * * * *

And now she--Tarb Morfatch--herself was going to be the guiding spirit that brought enlightenment and uplift to countless thousands on Terra and millions on Fizbus. Her name wouldn't appear on the columns, but the reward of having helped should be enough. Besides, Drosmig was due to retire soon. If she proved herself competent, she would take over the column entirely and get the byline. Grupe had promised faithfully.

But what, she wondered, had put Drosmig “out of commission”?

The taxi drew up before a building with a vulgar number of floors showing above ground.

"Ah--before we--er--meet the others," Stet suggested, twitching his crest. "I was wondering whether you would care to--er--have dinner with me tonight?"

This roused Tarb from her speculations. "Oh, I'd love to!" A date with the boss right away!

Stet fumbled in his garments for appropriate tokens with which to pay the driver. "You--you're not engaged or anything back Home, Miss Morfatch?"

"Why, no," she said. "It so happens that I'm not."

"Splendid!" He made an abortive gesture with his leg, then let her get out of the taxi by herself. "It makes the natives stare," he explained abashedly.

"But why shouldn't they?" she asked, wondering whether to laugh or not. "How could they help but stare? We are different." He must be joking. She ventured a smile.

He smiled back, but made no reply.

The pavement was hard under her thinly covered soles. Now that walking looked as if it would present a problem, the ban on wing use loomed more threateningly. She had, of course, walked before--on wet days when her wings were waterlogged or in high winds or when she had surface business. However, the sidewalks on Fizbus were soft and resilient. Now she understood why the Terrestrials wore such crippling foot armor, but that didn't make her feel any better about it.

A box-shaped machine took the two Fizbians up to the twentieth story in twice the time it would have taken them to fly the same distance. Tarb supposed that the offices were in an attic instead of a basement because exchange difficulties forced the Times to such economy. She wondered ruefully whether her own expense account would also suffer.

But it was no time to worry about such sordid matters; most important right now was making a favorable impression on her co-workers. She did want them to like her.

Taking out her compact, she carefully polished her eyeballs. The man at the controls of the machine practically performed a ritual entrechat.

"Don't do that!" Stet ordered in a harsh whisper.

"But why not?" she asked, unable to restrain a trace of belligerence from her voice. He hadn't been very polite himself. "The handbook said respectable Terran women make up in public. Why shouldn't I?"

He sighed. "It'll take time for you to catch on, I suppose. There's a lot the handbook doesn't--can't--cover. You'll find the setup here rather different from on Fizbus," he went on as he kicked open the door neatly lettered THE FIZBUS TIMES in both Fizbian and Terran. "We've found it expedient to follow the local newspaper practice. For instance--" he indicated a small green-feathered man seated at a desk just beyond the railing that bisected the room horizontally--"we have a Copy Editor."

"What does he do?" she asked, confused.

"He copies news from the other papers, of course."

"And what are you doing tonight, Miss Morfatch?" the Copy Editor asked, springing up from his desk to
execute the three ritual entrechats with somewhat more verve than was absolutely necessary.

"Having dinner with me," Stet said quickly.

"Pulling rank, eh, old bird? Well, we'll see whether position or sterling worth will win out in the end."

As the rest of the staff crowded around Tarb, leaping and booing as appreciatively as any girl could want, she managed to snatch a rapid look around. The place wasn't really so very much different from a Fizbian newsroom, once she got over the oddity of going across, not up and down, with the desks--queerly shaped but undeniably desks--arranged side by side instead of one over the other. There were chairs and stools, no perches, but that was to be expected in a wingless society. And it was noisy. Even though the little machines had stopped clattering when she came in, a distant roaring continued, as if, concealed somewhere close by, larger, more sinister machines continued their work. A peculiar smell hung in the air--not unpleasant, exactly, but strange.

She sniffed inquiringly.

"Ink," Stet said.

"What's that?"

"Oh, some stuff the boys in the back shop use. The feature writers," he went on quickly, before she could ask what the "back shop" was, "have private offices where they can perch in comfort."

He led the way down a corridor, opening doors. "Our drama editor." He indicated a middle-aged man with faded blue feathers, who hung head downward from his perch. "On the lobster-trick last night writing a review, so he's catching fifty-one twinkles now."

"Enchanted, Miss Morfatch," the critic said, opening one bright eye. "By a curious chance, it so happens that tonight I have two tickets to--"

"Tonight she's going out with me."

"Well, I can get tickets to any play, any night. And you haven't laughed unless you've seen a Terrestrial drama. Just say the word, chick."

Stet got Tarb out of the office and slammed the door shut. "Over here is the office of our food editor," he said, breathing hard, "whom you'll be expected to give a claw to now and then, since your jobs overlap. Can't introduce you to him right now, though, because he's in the hospital with ptomaine poisoning. And this is the office you'll share with Drosmig."

Stet opened the door.

Underneath the perch, Senbot Drosmig, dean of Fizbian journalists, lay on the rug in a sodden stupor, letters to the editor scattered thickly over his shrunken person. The whole room reeked unmistakably of caffeine.

Tarb shrank back and twined both feet around Stet's. This time he did not repulse her. "But how can a--an educated, cultured man like Senbot Drosmig sink to such depths?"

"It's hard for anyone with even the slightest inclination toward the stuff to resist it here," Stet replied somberly. "I can't deny it; the sale of caffeine is absolutely unrestricted on Earth. Coffee shops all over the place. Coffee served freely at even the best homes. And not only coffee ... caffeine is insidiously present in other of their popular beverages."

Her eyes bulged sideways. "But how can a so-called civilized people be so depraved?"

"Caffeine doesn't seem to affect them the way it does us. Their nervous systems are so very uncomplicated, one almost envies them."

Drosmig stirred restlessly under his blanket of correspondence. "Go back ... Fizbus," he muttered. "Warn you ... 'fore ... too late ... like me."

Tarb's rose-pink feathers stood on end. She looked apprehensively at Stet.

"Senbot can't go back because he's in no shape to take the interstel drive." The young editor was obviously annoyed. "He's old and he's a physical wreck. But that certainly doesn't apply to you, Miss Morfatch." He looked long and hard into her eyes.

"Few years on planet," Drosmig groaned, struggling to his wings, "'ply to anybody."

His feathers, Tarb noticed, were an ugly, darkish brown. She had never seen any one that color before, but she'd heard rumors that too much caffeine could do that to you. At least she hoped it was only the caffeine.

"For your information, he was almost as bad as this when he came!" Stet snapped. "Frankly, that's why he was sent here--to get rid of his unfortunate addiction. Grupe had no idea, when he assigned him to Earth, that there was caffeine on the planet."

The old man gave a sardonic laugh as he clumsily made his way to the perch and gripped it with quivering toes.

"That is, I don't think he knew," Stet said dubiously.

Tarb reached over and picked a letter off the floor. The Fizbian characters were clumsy and ill-made, as if someone had formed them with his feet. Could there be such poverty here that individuals existed who could not afford a scripto? The letter didn't read like any that had ever been printed in the column--at least none that had been
picked up in the Fizbus edition:

* * * * *

New York

Dear Senbot Drosmig:

I am a subaltern clerk in the shipping department of the FizbEarth Trading Company, Inc. Although I have held this post for only three months, I have already won the respect and esteem of my superiors through my diligence and good character. My habits are exemplary: I do not gamble, sing, or take caffeine.

Earlier today, while engaged in evening meditation at my modest apartments, I was aroused by a peremptory knock at the door. I flung it open. A native stood there with a small case in his hand.

"Is the house on fire?" I asked, wondering which of my few humble possessions I should rescue first.

"No," he said. "I would like to interest you in some brushes."

"Are the offices of the FizbEarth Trading Company, Inc., on fire?"

"Not to my knowledge," he replied, opening his case. "Now I have here a very nice hairbrush--"

I wanted to give him every chance. "Have you come to tell me of any disaster relative to the FizbEarth Trading Company, to myself, or to anyone or anything else with whom or with which I am connected?"

"Why, no," he said. "I have come to sell you brushes. Now here is a little number I know you'll like. My company developed it with you folks specially in mind. It's--"

"Do you know, sir, that you have wantonly interrupted me in the midst of my meditations, which constitutes an established act of privacy violation?"

"Is that a fact? Now this little item is particularly designed for brushing the wings--"

At that point, I knocked him down and punched him into insensibility with my feet. Then I summoned the police. To my surprise, they arrested me instead of him.

I am writing this letter from jail. I do not like to ask my employers to get me out because, even though I am innocent, you know how a thing like this can leave a smudge on the record.

What shall I do?

Anxiously yours,

Fruzmus Bloxx

* * * * *

"What should he do?" Tarb asked, handing Stet the paper. "Or is the question academic by now? The letter's five days old."

Stet sighed. "I'll find out whether the consulate has been notified. Native police usually do that, you know. Very thoughtful fellows. If this Bloxx hasn't been bailed out already, I'll see that he is."

"But how will we answer his letter? Advise him to sue for false arrest?"

Stet smiled. "But he has no grounds for false arrest. He is guilty of assault. The native was entirely within his rights in trying to sell him a brush. Now--" he put out a foot--"brace yourself. Privacy violation is not a crime on Terra. It is perfectly legal. In fact, it does not exist as such!"

At that point, everything went maroon.

When Tarb came to, she found herself lying upon Drosmig's desk. A skin-faced native woman was offering her water and clucking.

"Are you all right, Tarb--Miss Morfatch?" Stet demanded anxiously.

"Yes. I--I think so," she murmured, raising herself to a crouch.

"Better ... have died," Drosmig groaned from his perch. "Fate worse ... death ... awaits you."

Tarb tried to smile. "Sorry to have been so much trouble." She stuck out her tongue at both Stet and the native. The woman drew in her breath.

"Miss Morfatch," Stet reminded Tarb, "sticking out the tongue is not an apology on Terra; it is an insult. Fortunately, Miss Snow happens to be the only Terran who would not be offended. She has become thoroughly acquainted with us and our odd little customs. She even--" he beamed at the Terran female--"has learned to speak our language."

"Hail to thee, O visitor from the stars," Miss Snow said in Fizbian. "May thy sojourn upon Earth be an incessant delight and may peace and plenty shower their gifts in abundance upon thee."

Tarb put her hand to her aching head. "I'm very glad to meet you," she said, glad she did not have to get up to make the ritual entrechats.

"Miss Snow is my right foot," Stet said, "but I'm going to be noble and let her act as your secretary until you can learn to operate a typewriter."

"Secretary? Typewriter?"

"Well, you see, there are no scriptos or superscriptos on Earth and we can't import any from Home because the
natives—" Miss Snow smiled—"don't have the right kind of power here to run psychic installations. All prosifying
has to be done directly on prosifying machines or—" he paused—"by foot."
"Catch her!" Miss Snow exclaimed in Terran.

Everything had gone maroon for Tarb again. As she fell, she could hear a sudden thump. It was, she later
discovered, Drosmig falling off his perch again—the result of insecure grip, she was given to understand, rather than
excessive empathy.

*I * * *

"I didn't mean, of course, to give you the impression that we actually produce the individual copies of the
papers ourselves," Stet explained over the dinner table that night. "We have native printers who do that. They've
turned out some really remarkable Fizbian type fonts." "Very clever of them," Tarb said, knowing that was what she
was expected to say. She glanced around the restaurant. In their low-cut evening garments, the Terrestrial females
looked much less Fizboid than they had during the day. All that naked-looking skin; one would think they'd want to
cover it. Probably they were sick with jealousy of her beautiful rose-colored down—what they could see of it,
anyway.

"Of course, our real problem is getting proofreaders. The proofing machines won't operate here either, of
course, and so we need human personnel. But what Fizbian would do such degrading work? We had thought of
convict labor, but—"

"Why mustn't I take off my wrap?" Tarb interrupted. "No one else is wearing one."
Stet coughed. "You'll feel much less self-conscious about your wings if you keep it on. And try not to use your
feet so conspicuously. I'm sure everyone understands you need them to eat with, but—"

"But I'm not in the least self-conscious about my wings. On Fizbus, they were considered rather nice-looking, if
I do say so myself."

"It's better," he said firmly, "not to emphasize the differences between the natives and ourselves. You didn't
object to wearing a Terrestrial costume, did you?"

"No, I realize I must make some concessions to native prudery, but—"
"Matter of fact, I've been thinking it would be a good idea for you to wear a stole or a cape or something in the
daytime when you go to and from the office. You wouldn't want to make yourself or the Times conspicuous, I'm
sure.... No, waiter, no coffee. We'll take champagne."

"I want to try coffee," Tarb said mutinously. "Champagne! You'd think I was a fledgling, giving me that bubbly
stuff!"
He looked at her. "Now don't be silly, Miss Morfatch ... Tarb. I can't let you indulge in such rash experiments.
You realize I am responsible for you."

Tarb muttered darkly into her coupe maison.
Stet raised his eyebrows. "What did you say?"

"I was only wondering whether you'd remembered to check on whether that young man--Bloxx--ever did get
out of jail."
Stet snapped his toes. "Glad you reminded me. Completely slipped my mind. Let's go and see what happened to
him, shall we?"

 * * * *

As they rose to leave, a dumpy Earthwoman rushed up to them, enthusiastically babbling in Terran. Seizing
Tarb's foot, she clung to it before the Fizbian girl could do anything to prevent her. Tarb had to spread her wings
wide to retain her balance. Her cloak flew off and an adjoining table of diners disappeared beneath it.

[Illustration]
Stet and the headwaiter rushed to the rescue with profuse apologies, Stet's crest undulating as if it concealed a
nest of snakes. But Tarb was too much frightened to be calmed.

"Is this a hostile attack?" she shrieked frantically at Stet. "Because the handbook never said shaking feet was an
Earth custom!"

"No, no, she's a friend!" Stet yelled, leaving the diners still struggling with the cloak as he sped back to her.
"And shaking feet isn't an Earth custom; she thinks it's a Fizbian one. You see.... Oh, hell, never mind—I'll explain
the whole thing to you later. But she's just greeting you, trying to put you at your ease. It's Belinda Romney, a very
important Terrestrial. She owns the Solar Press—you must have heard of it even on Fizbus--biggest news service on
the planet. Absolutely wouldn't do to offend her. Mrs. Romney, may I present Miss Morfatch?"

The woman beamed and continued to gush endlessly.
"Tell her to let go my foot!" Tarb demanded. "It's getting so it feels carbonated."
He smiled deprecatingly. "Now, Tarb, we mustn't be rude—"

For the first time in her life, Tarb spoke Terran to a Terrestrial. She formed the words slowly and carefully:
"Sorry we must leave, but we have to go to jail."

She looked to Stet for approval ... and didn't get it. He started to explain something quickly to the woman. Every time she'd heard him speak Terran, Tarb thought, he seemed to be introducing, explaining or apologizing.

It turned out that, through some oversight, the usually thoughtful Terran police department had neglected to inform the Fizbian consul that one of his people had been incarcerated, for the young man had already been tried, found guilty of assault plus contempt of court, and sentenced to pay a large fine. However, after Stet had given his version of the circumstances to a sympathetic judge, the sum was reduced to a nominal one, which the Times paid.

"But I don't see why you should have paid anything at all," Bloxx protested ungratefully. "I didn't do anything wrong. You should have made an issue of it."

"According to Earth laws, you did do wrong," Stet said wearily, "and this is Earth. What's more, if we take the matter up, it will naturally get into print. You don't want your employers to hear about it, do you--even if you don't care about making Fizbians look ridiculous to Terrestrials?"

"I suppose I wouldn't like FizbEarth to find out," Bloxx conceded. "As it is, I'll have to do some fast explaining to account for my not having shown up for nearly a week. I'll say I caught some horrible Earth disease--that'll scare them so much, they'll probably beg me to take another week off. Though I do wish you fellows over at the Times would answer your mail sooner. I'm a regular subscriber, you know."

* * * * *

"But the same kind of thing's going to happen over and over again, isn't it, Stet?" Tarb asked as a taxi took them back to the hotel in which most of the Times staff was domiciled. "If privacy doesn't exist on Earth, it's bound to keep occurring."

"Eh?" Stet took his attention away from her toes with some difficulty. "Some Earth people like privacy, too, but they have to fight for it. Violations aren't legally punishable--that's the only difference."

"Then surely the Terrestrials would understand about us, wouldn't they?" she asked eagerly. "If they knew how strongly we felt about privacy, maybe they wouldn't violate it--not as much, anyway. I'm sure they're not vicious, just ignorant. And you can't just keep on getting Fizbians out of jail each time they run up against the problem. It would be too expensive, for one thing."

"Don't worry," he said, pressing her toes. "I'll take care of the whole thing."

"An article in the paper wouldn't really help much," she persisted thoughtfully, "and I suppose you must have run at least one already. It would explain to the Fizbians that Terrestrials don't regard invasion of privacy as a crime, but it wouldn't tell the Terrestrials that Fizbians do. We'll have to think of--"

"You're surely not going to tell me how to run my paper on your first day here, are you?"

He tried to take the sting out of his words by twining his toes around hers, but she felt guilty. She had been presumptuous. Probably there were lots of things she couldn't understand yet--like why she shouldn't polish her eyeballs in public. Stet had finally explained to her that, while Terrestrial women did make up in public, they didn't scour their irises, ever, and would be startled and horrified to see someone else doing so.

"But I was horrified to see them raking their feathers in public!" Tarb had contended.

"Combing their hair, my dear. And why not? This is their planet."

That was always his answer. I wonder, she speculated, whether he would expect a Terrestrial visitor to Fizbus to fly ... because, after all, Fizbus is our planet. But she didn't dare broach the question.

However, if it was presumptuous of her to make helpful suggestions the first day, it was more than presumptuous of Stet to ask her up to his rooms to see his collection of rare early twentieth-century Terrestrial milk bottles and other antiques. So she just told him courteously that she was tired and wanted to go to roost. And, since the hotel had a whole section fitted up to suit Fizbian requirements, she spent a more comfortable night than she had expected.

She awoke the next day full of enthusiasm and ready to start in on the great work at once. Although she might have been a little too forward the previous night, she knew, as she took a reassuring glance in the mirror, that Stet would forgive her.

* * * * *

In the office, she was, at first, somewhat self-conscious about Drosmig, who hung insecurely from his perch muttering to himself, but she soon forgot him in her preoccupation with duty. The first letter she picked up--although again oddly unlike the ones she'd read in the paper on Fizbus--seemed so simple that she felt she would have no difficulty in answering it all by herself:

Heidelberg

Dear Senbot Drosmig:

I am a professor of Fizbian History at a local university. Since my salary is a small one, owing to the small esteem in which the natives hold culture, I must economize wherever I can in order to make both ends meet.
Accordingly, I do my own cooking and shop at the self-service supermarket around the corner, where I have found that prices are lower than in the service groceries and the food no worse.

However, the manager and a number of the customers have objected to my shopping with my feet. They don’t so much mind my taking packages off the shelves with them, but they have been quite vociferous on the subject of my pinching the fruit with my toes. Unripe fruit, however, makes me ill. What shall I do?

Sincerely yours,

Grez B’Groot

Tarb dictated an unhesitating reply:

Dear Professor B’Groot:

Why don't you explain to the manager of the store that Fizbians have wings and feet rather than arms and hands?

I'm sure his attitude and the attitudes of his customers will change when they learn that your pinching the fruit with your feet is not mere pedagogical eccentricity, but the regular practice on our planet. Point out to him that your feet are covered and, therefore, more sanitary than the bare hands of his other customers.

And always put on clean socks before you go shopping.

Helpfully yours,

Senbot Drosmig

Miss Snow raised pale eyebrows.

"Is something wrong?" Tarb asked anxiously. "Should I have put in that bit about work, study, meditate? It seems inappropriate somehow."

"Oh, no, not that. It's just that your letter--well, violates Mr. Zarnon's precept that, in Rome, one must do as the Romans do."

"But this isn't Rome," Tarb replied, bewildered. "It's New York."

"He didn't make the saying up," Miss Snow replied testily. "It's a Terrestrial proverb."

"Oh," Tarb said.

She resented this creature's trying to tell her how to do her job. On the other hand, Tarb was wise enough to realize that Miss Snow, unpleasant though she might be, probably did know Stet well enough to be able to predict his reactions.

So Tarb not only was reluctant to show Stet what she had already done, but hesitated about answering another and even more urgent letter that had just been brought in by special messenger. She tried to compromise by submitting the letters to Drosmig--for, technically speaking, it was he who was her immediate superior--but he merely groaned, "Tell 'em all to drop dead," from his perch and refused to open his eyes.

In the end, Tarb had to take the letters to Stet's office. Miss Snow trailed along behind her, uninvited. And, since this was a place of business, Tarb could not claim a privacy violation. Even if it weren't a place of business, she remembered, she couldn't--not here on Earth. Advanced spirituality, hah!

Advanced pain in the pinions!

Stet read the first letter and her answer smilingly. "Excellent, Tarb--" her hearts leaped--"for a first try, but I'd like to suggest a few changes, if I may."

"Well, of course," she said, pretending not to notice the smirk on Miss Snow's face.

"Just write this Professor B'Goot that he should do his shopping at a grocery that offers service and practice his economies elsewhere. A professor, of all people, is expected to uphold the dignity of his own race--the idea, sneering at a culture that was thousands of years old when we were still building nests! Terrestrials couldn't possibly have any respect for him if they saw him prodding kumquats with his toes."

"It's no sillier than writing with one's vestigial wings!" Tarb blazed.

"Well!" Miss Snow exclaimed in Terran. "Well, really!"

Tarb started to stick out her tongue, then remembered. "I didn't mean to offend you, Miss Snow. I know it's your custom. But wouldn't you understand if I typewrote with my feet?"

Miss Snow tittered.

"If you want the honest truth, hon, it would make you look like a feathered monkey."

"If you want the honest truth about what you look like to me, dearie--it's a plucked chicken!"

"Tarb, I think you should apologize to Miss Snow!"

"All right!" Tarb stuck out her tongue. Miss Snow promptly thrust out hers in return.

"Ladies, ladies!" Stet cried. "I think there has been a slight confusion of folkways!" He quickly changed the subject. "Is that another letter you have there, Tarb?"

"Yes, but I didn't try to answer it. I thought you'd better have a look at it first, since Miss Snow didn't seem to think much of the job I did with the other one."
"Miss Snow always has the Times' welfare at heart," Stet remarked ambiguously, and read:

Chicago

Dear Senbot Drosmig:

I am employed as translator by the extraterrestrial division of Burns and Deerhart, Inc., the well-known interstellar mail-order house. As the company employs no other Fizbians and our offices are situated in a small rural community where no others of our race reside, I find myself rather lonely. Moreover, being a bachelor, with neither chick nor child on Fizbus, I have nothing to look forward to upon my return to the Home Planet some day.

Accordingly, I decided to adopt a child to cheer my declining years. I dispatched an interstellargram to a reliable orphanage on Fizbus, outlining my hopes and requirements in some detail. After they had satisfied themselves as to my income, strength of character, etc., they sent me a fatherless and motherless egg in cold storage, which I was supposed to hatch upon arrival.

However, when the egg came to Earth, it was impounded by Customs. They say it is forbidden to import extrasolar eggs. I have tried to explain to them that it is not at all a question of importation but of adoption; however, they cannot or will not understand.

Please tell me what to do. I fear that they may not be keeping the egg at the correct Fizbian freezing point—which, as you know, is a good deal lower than Earth's. The fledgling may hatch by itself and receive a traumatic shock that might very well damage its entire psyche permanently.

Frantically yours,

Glibmus Gluyt

"Oh, for the stars' sake!" Stet exploded. "This is really too much! Viz our consul, Miss Snow. That egg must go back to Fizbus at once, before any Terrestrials hear of it! And I must notify the government back on the Home Planet to keep a close check on all egg shipments. Something like this must certainly not occur again."

"Why shouldn't the Terrestrials hear of it?" Tarb asked, outraged. "And I think it's mean of you to send back a poor little orphan egg like that when it has a chance of getting a good home."

"An egg!" Miss Snow repeated incredulously. "You mean you really...?" She gave me one mad little hoot of laughter and then stopped and strangled slightly. Her face turned purple in her efforts to restrain mirth. Really, Tarb thought, she looks so much better that color.

Stet's crest twitched violently. "I hope--" he began. "I do hope you will keep this ... knowledge to yourself, Miss Snow."

"But of course," she assured him, calming down. "I'm dreadfully sorry I was so rude. Naturally I wouldn't dream of telling a soul, Mr. Zarnon. You can trust me."

"I'm sure I can, Miss Snow."

Tarb almost choked with indignation. "You mean you've been keeping the facts of our life from Terrestrials? As if they were fledglings—but, since they do reproduce that way, they could scarcely find our way objectionable!"

"Tarb, that's not how a young girl should talk!"

"Oh, go lay an egg!" she said, knowing that she had overstepped the limits of propriety, but unable to let him get away with that. "I hope to be a wife and mother some day," she added, "and I only hope that when that time comes, I'll be able to lay good eggs."

"Miss Morfatch," Stet said, keeping control of his temper with a visible effort, "that will be enough from you. If common decency doesn't restrain you, please remember that I am your employer and that I set the policies on my paper. You'll do what you're told and keep a civil tongue in your head or you'll be sent back to Fizbus. Do I make myself clear?"

"You do, indeed," Tarb said. How could she ever have thought he was charming and handsome? Well, perhaps he still was handsome, but fine feathers do not make fine deeds. And, if it came to that, it wasn't his paper.

"We have the same thing on Terra," Miss Snow murmured sympathetically to Stet. "These young whippersnappers think they can start in running the paper the very first day. Why, Belinda Romney herself--she's a distant cousin of mine, you know--told me--"

"Miss Snow," Tarb said, "I hope for the sake of Earth that you are not a typical example of the Terrestrial species."
"And you, hon," Miss Snow retorted, "don't belong on a paper, but in a chicken coop."

"Ladies!" Stet said helplessly. "Women," he muttered, "certainly do not belong on a newspaper. Matter of fact, they don't belong anywhere; their place is in the home only because there's nowhere else to put them."

Both females glared at him.

During the next fortnight, Tarb gained fluency in Terran and also learned to operate a Terrestrial typewriter equipped with Fizbian type--mostly so that she could dispense with the services of the invaluable Miss Snow. She didn't like typing, though--it chipped her toenails and her temper. Besides, Drosmig kept complaining that the noise prevented him from sleeping and she preferred him to sleep rather than hang there making irrelevant and, sometimes, unpleasantly relevant remarks.

"Longing for the old scripto, eh?" one of the cameramen smiled as he lounged in the open doorway of her office. Although she was fond of fresh air, Tarb realized that she would have to keep the door shut from now on. Too many of the younger members of the staff kept booing at her as they passed, and now they had formed the habit of dropping in to offer her advice, encouragement and invitations to meals. At first, the attention had pleased her--but now she was much too busy to be bothered; she was going to turn out acceptable answers to those letters or die trying.

"Well, if the power can't be converted, it can't," she said grimly. "Griblo, I do wish you'd be a dear and flutter off. I--"

He snorted. "Who says the power can't be converted? Stet, huh?"

She took her feet off the keys and looked at him. "Why do you say 'Stet' that way?"

"Because that's a lot of birdseed he gives you about not being able to convert Earth power. Could be done all right, but he and the consul have it all fixed up to keep Fizbian technology off the planet. Consul's probably being paid off by the International Association of Manufacturers and Stet's in it for the preservation of indigenous culture--and maybe a little cash, too. After all, those rare antique collections of his cost money."

"I don't believe it!" Tarb snapped. "Griblo, please--I have so much work to get through!"

"Okay, chick, but I warn you, you're going to have your bright-eyed illusions shattered. Why don't you wake up to the truth about Stet? What you should do is maybe eschew the society of all journalists entirely, and a sordid lot they are, and devote yourself to photographers--splendid fellows, all."

"Please shut the door behind you!"

The door slammed.

Tarb gazed disconsolately at the letter before her. Would she ever be able to answer letters to Stet's satisfaction? The purpose of the whole column was service--but did she and Stet mean the same thing by the same word? Or, if they did, whom was Stet serving?

She was paying too much attention to Griblo's idle remarks. Obviously he was a sorehead--had some kind of grudge against Stet. Perhaps Stet was a bit too autocratic, perhaps he had even gone native to some extent, but you couldn't say anything worse about him than that. All in all, he wasn't a bad bird and she mustn't let herself be influenced by rumormongers like Griblo.

Tarb got up and took the letter to Stet. He was in his office dictating to Miss Snow. After all, Tarb could not repress the ugly thought, why should he care about the scriptos? He'll never have to use a typewriter.

And he was perfectly nice about being interrupted. The only thing he didn't like was being contradicted. I'm getting bitter, she told herself in surprise. And at my age, too. I wonder what I'll be like when I'm old.

This thought alarmed her and so she smiled very sweetly at Stet as she murmured, "Would you mind reading this?" and gave him the letter.

"Run into another little snag, eh?" he said affably, giving her foot a gentle pat with his. "Well, let's see what we can do about it."

Montreal

Dear Senbot Drosmig:

I am a chef at the Cafe Inter-stellaire, which, as everyone knows, is one of the most chic eating establishments on this not very chic planet. During my spare moments, I am a great amateur of the local form of entertainment known as television. I am especially fascinated by the native actress Ingeborg Swedenborg, who, in spite of being a Terran, compares most favorably with our own Fizbian footlight favorites.

The other day, while I am in the kitchen engaged in preparing the ragout celeste à la fize for which I am justly celebrated on nine planets, I hear a stir outside in the dining room. I strain my ears. I hear the cry, "It is Ingeborg Swedenborg!"

I cannot help myself. I rush to the doorway. There, behold, the incomparable Ingeborg herself! She follows the
headwaiter to a choice table. She is even more ravishing in real life than on the screen. On her, it does not matter that she has no feathers save on the head—even skin looks good. Overcome by involuntary ardor, I boo at her. Whereupon I am violently assailed by a powerfully built native whom I have not previously noticed to be escorting her.

I am rescued before he can do me any permanent damage, though, if you wish the truth, it will be a long time before I can fly again. However, I am given notice by the cold-hearted management. Now I am without a job. And what is more, if on this planet one is not permitted to express one's instinctive and natural admiration for a beautiful woman, then all I have to say is that it is a lousy planet and I wiggle my toes at it. How do I go about getting deported?

Impatiently yours,
Rajois Sludd

"Oh, I suppose it serves him right," Tarb said quickly, before Stet could comment, "but don't you think it would be a good idea if the Times got up a Fizbian-Terrestrial handbook of its own? It's the only solution that I can see. The regular one, I recognize now, is more than inadequate, with all that spiritual gup—" Miss Snow drew in her breath sharply—"and not much else. All these problems are bound to arise again and again. Frankly speaking, Stet, your solutions only take care of the individual cases; they don't establish a sound intercultural basis."

He grunted.

"What's more," she went on eagerly, "we could not only give copies to every Fizbian planning to visit Earth, but also print copies in Terran for Terrestrials who are interested in learning more about Fizbus and the Fizbians. In fact, all Terrans who come in contact with us should have the book. It would help both races to understand each other so much better and—"

"Unnecessary!" Stet snapped, so violently that she stopped with her mouth open. "The standard handbook is more than adequate. Whatever limitations it may have are deliberate. Setting down in cold print all that ... stuff you want to have included would make a point of things we prefer not to stress. I wouldn't want to have the Terrestrials humor me as if I were a fledgling or a foreigner."

He leaped out of his chair and paced up and down the office. One would think he had forgotten he ever could fly.

"But you are a foreigner, Stet," Tarb said gently. "No matter what you do or say, Terrestrials and Fizbians are—well, worlds apart."

"Spiritually, I am much closer to the Terrestrials than—but you wouldn't understand." He and Miss Snow nodded sympathetically at each other. "And you might be interested to know that I happen to be the author of all that 'spiritual gup.' I wrote the handbook—as a service to Fizbus, I might point out. I wasn't paid for it."

"Oh, dear!" Tarb said. "Oh, dear! I really and truly am sorry, Stet."

He brushed her apologies aside. "Answer that letter. Ignore the question about deportation entirely." He ran a foot through his crest. "Just tell the fellow to see our personnel manager. We could use a chef in the company dining room. Haven't tasted a decent celestial ragout—at a price I could afford—since I left Fizbus."

"Would you want me to print that reply in the column?" she asked. "If you lose your job because you're unfamiliar with Terrestrial customs, come to the Times. We'll give you another job at a much lower salary."

"Of course not! Send your answer directly to him. You don't think we put any of those letters you've been answering in the column, do you? Or any that come in at all, for that matter. I have to write all the letters that are printed—and answer them myself."

"I should have recognized the style," Tarb said. "So this is the service the Times offers to its subscribers. Nothing that would be of help. Nothing that could prevent other Fizbians from making the same mistake. Nothing that could be controversial. Nothing that would help Terrestrials to understand us. Nothing, in short, but a lot of birdseed!"

"Impertinence!" Miss Snow remarked. "You shouldn't let her talk to you like that, Mr. Zarnon."

"Tarb!" Stet roared, casting an impatient glance at Miss Snow. "How dare you talk to me in that way? And all this is none of your business, anyway."

"I'm a Fizbian," she stated, "and it certainly is my business. I'm not ashamed of having wings. I'm proud of them and sorry for people who don't have them. And, by the stars, I'm going to fly. If skirts are improper to wear for flying, then I can wear slacks. I saw them in a Terrestrial fashion magazine and they're perfectly respectable."

"Not for working hours," Miss Snow sniffed.

"I have no intention of flying during working hours," Tarb snapped back. "Even you should be able to see that the ceiling's much too low."

Stet ran a foot through his crest again. "I hate to say this, Tarb, but I don't feel you're the right person for this job. You mean well, I'm sure, but you're too—too inflexible."
"You mean I have principles," she retorted, "and you don't." Which wasn't entirely true; he had principles--it was just that they were unprincipled.

"That will be enough, Tarb," he said sternly. "You'd better go now while I think this over. I'd hate to send you back to Fizbus, because I'd--well, I'd miss you. On the other hand..."

TARB went back to her office and drafted a long interstel to a cousin on Fizbus, explaining what she would like for a birthday present. "And send it special delivery," she concluded, "because I am having an urgent and early birthday."

* * * * *

"TARB Morfatch!" Stet howled, a few months later. "What on Earth are you doing?"

"Dictating into my scripto," Tarb said cheerfully. "Some of the boys from the print shop helped fix it up for me. They were very nice about it, too, considering that the superscriptos will probably throw them out of work. You know, Stet, Terrestrials can be quite decent people."

"Where did you get that scripto?"

"Cousin Mylfis sent it to me for my birthday. I must have complained about wearing out my claws on a typewriter and he didn't understand that scriptos won't work on Earth. Only they do." She beamed at her employer. "All it needed was a transformer. I guess you're just not mechanically minded, Stet."

He clenched his feet. "TARB, Terrestrials aren't ready for our technology. You've done a very unwise thing in having that scripto sent to you. And I've done a very unwise thing in keeping you here against my better judgment."

"Maybe the Terrestrials aren't ready," she said, ignoring his last remark, "but I'm not going to wear my feet to the bone if I can get a gadget that'll do the same thing with no expenditure of physical energy." She placed a foot on his. "I don't see how a thing like this could possibly corrupt the Terrestrials, Stet. It's made a better, brighter girl out of me already."

"Hear, hear!" said Drosmig hoarsely from his perch.

"Shut up, Senbot. You just don't understand, Tarb. If you'll only--"

"But I'm afraid I do understand, Stet. And I won't send my scripto back."

"May I come in?" Miss Snow tapped lightly on the door frame. "Is what I hear true?"

"About the scripto?" Tarb asked. "It certainly is. All you have to do is talk into it and the words appear on the paper. Guess that makes you obsolete, doesn't it, Miss Snow?"

"And high time, too," commented Drosmig. "Never liked the old biddy."

"Senbot...." Stet began, and stopped. "Oh, what's the use trying to talk reasonably to either of you! Tarb, come back to my office with me."

She could not refuse and so she followed. Miss Snow, torn between curiosity and the scripto, hesitated and then made after them.

"I've decided to take you off the column--for this morning, anyway--and send you on an outside assignment," Stet told Tarb. "The consul's wife is coming to Earth today. Once she heard there was another woman on Terra, nothing could stop her. Consul seems to think it's my fault, too," he added moodily. "Won't believe I had nothing to do with hiring you. I told the Home Office not to send a woman, that she'd disrupt the office, and you sure as hell have."

"But I thought you said in your letters that you were doing everything in your power to bring Fizbian womenfolk to their men on Terra!" Tarb pointed out malevolently.

"Yes," he confessed. "We must please our readers. You know that. Anyway, all that's irrelevant right now. What I want you to do is go meet the consul's wife. Nice touch, having the only other Fizbian woman here be the one to interview her. Human interest angle for the Terrestrial papers. Shouldn't be surprised if Solar Press picked it up--they like items of that kind for fillers. Take Griblo along with you and make sure he has film in his camera this time."

"Yes, sir," Tarb said. "Anything you say, sir."

He pretended not to notice her sarcasm. "I have a list of the questions you should ask her." He fixed her with his eye. "You stick to them, do you hear me? I don't want anything controversial." He rummaged among the papers on his desk. "I know I had it half an hour ago. Sit down, will you, Tarb? Stop hopping around."

"If I can't have a perch, I want a stool," Tarb said. "This is a private office and I think it's a gross affectation for you to have those silly, uncomfortable chairs in it."

"If you would have your wings clipped like Mr. Zarnon's--" Miss Snow began before Stet could stop her.

"Stet, you didn't!"

His crest thrashed back and forth. "They'll grow back again and it's so much more convenient this way. After all, I can't use them here and I do have to associate with Terrestrials and use their equipment. The consul has had his wings clipped also and so have several of our more prominent industrialists--"
"Oh, Stet!" Tarb wailed. "I was beginning to think some pretty hard things about you, but I wouldn't ever have dreamed you'd do anything as awful as that!"

"Why should I have to apologize to you?" he raged. "Who do you think you are, anyway? You're an incompetent little fool. I should have fired you that first day. I've let you get away with so much only because you have a pretty face. You've only been on Earth a couple of months; how can you presume to think you know what's good and what's bad for the Fizbians here?"

"I may not know what's good," she retorted, "but I certainly do know what's bad. And that's you, Stet--you and everything you stand for. You not only don't have the courage of your convictions, you don't even have any convictions. You're ashamed of being a Fizbian, ashamed of anything that makes Fizbians different from Terrestrials, even if it's something better, something that most Terrans would like to have. You're a damned hypocrite, Stet Zarnon, that's what you are--professing to help our people when actually you're hurting them by trying to force them into the mold of an alien species."

She brushed back her crest. "I take it I'm fired," she said more quietly. "Do you want me to interview the consul's wife first or leave right away?"

It took Stet a moment to bring his voice under control. "Interview her first. We'll talk this over when you get back."

* * * * *

It was pleasant to be away from the office, she thought as the taxi pulled toward the airfield, and doing wingwork again, even if it proved to be the first and last time on this planet. Griblo sat hunched in a corner of the seat, too preoccupied with the camera, which, even after two years, he hadn't fully mastered, to pay attention to her.

Outside, it was raining, the kind of thin drizzle that, on Fizbus or Earth, could go on for days. Tarb had brought along the native umbrella she had purchased in the hotel gift shop--a delightful contraption that was supposed to keep off the rain and didn't, and was supposed to collapse and did, but at the wrong moments. She planned to take it back with her when she returned to Fizbus. Approved souvenir or not, it was the same beautiful purple as her eyes. And, besides, who had made the ruling about approved souvenirs? Stet, of course.

"No reason why we couldn't have autofax brought from Home," Griblo suddenly grumbled.

Tarb pulled herself back from her thoughts. "I suppose Stet wouldn't let you," she said. "But now that one scripto's here," she went on somewhat complacently, "he'll have to--"

"Keep this planet charming and unspoiled, he says," Griblo interrupted ungratefully. "Its spiritual values will be corrupted by too much contact with a crass advanced technology. And, of course, he's got the local camera manufacturers solidly behind him. I wonder whether they advertise in the Times because he helps keep autofax off Terra or whether he keeps the autofax off Terra because they advertise in the Times."

"But what does he care about advertising? He may talk as if he owned the Times, but he doesn't."

Griblo gave a nasty laugh. "No, he doesn't, but if the Terran edition didn't show a profit, it'd fold quicker than you can flip your wings and he'd have to go back to nasty old up-to-date Fizbus as a lowly sub-editor. And he wouldn't like that one bit. Our Stet, as you may have noticed, is fond of running things to suit himself."

"But Mr. Grupe told me that the Times isn't interested in money. It's running this edition of the paper only as a service to--oh, I suppose all that was a lot of birdseed, too!"

"Grupe!" Griblo snorted. "The sanctimonious old buzzard! He's a big stockholder on the paper. Bet you didn't know that, did you? All they're out for is money. Fizbian money, Terrestrial money--so long as it's cash."

"Tell me, Griblo," Tarb asked, "what does 'When in Rome, do as the Romans do' mean?"

Griblo grinned sourly. "Stet's favorite motto." He moved along the seat closer to her. "I'll tell you what it means, chicken. On Earth, don't be a Fizbian."

* * * * *

The consul's wife, an old mauve creature, did not seem overpleased to see Tarb, since the younger, prettier Fizbian definitely took the spotlight away from her. The press had, of course, seen Tarb before, but at that time they hadn't been able to communicate directly with her and they didn't, she now found out, think nearly as much of Stet as he did of them.

Tarb couldn't attempt to deviate much from Stet's questions, for the consul's wife was not very cooperative and the consul himself watched both women narrowly. He was a good friend of Stet's, Tarb knew, and apparently Stet had taken the other man into his confidence.

When the interviews were over and the consular party had left, Tarb remained to chat with the Terrestrial journalists. Despite Griblo's worried objections, she joined them in the Moonfield Restaurant, where she daintily partook of a cup of coffee and then another and another.

After that, things weren't very clear. She dimly remembered the other reporters assuring her that she shouldn't disfigure her lovely wings with a stole ... and then pirouetting in the air over the bar to prolonged applause ... and
then she was in the taxi again with Griblo shaking her.

"Wake up, Tarb--we're almost at the office! Stet'll have me plucked for this!"

Tarb sat up and pushed her crest out of her eyes. The sky was growing dark. They must have been gone a long time.

"I'll never hear the end of this," Griblo moaned. "Why, if only he could get someone to fill my place, Stet would fire me like a shot! Not that I wouldn't quit if I could get another job."

"Oh, it'll be mostly me he'll be mad at." Tarb pulled out her compact. Stet had warned her not to polish her eyeballs in public, but the ground with him! Her head hurt. And her feathers, she saw in the mirror, had turned almost beige. She looked horrible. She felt horrible. And Stet would probably think she was horrible.

"When Stet's mad," Griblo prophesied darkly, "he's mad at everybody!"

And Stet was mad. He was waiting in the newsroom, his emerald-blue eyes blazing as if he had not only polished but lacquered them.

"What's the idea of taking six hours to cover a simple story!" he shouted as soon as the door began to open. "Aside from the trivial matter of a deadline to be met--Griblo, where's Tarb? Nothing's happened to her, has it?"

"Naaah," Griblo said, unslinging his camera. "She took a short cut, only she got held up by a terrace. Snagged her umbrella on it, I believe. I heard her yelling when I was waiting for the elevator; I didn't know nice girls knew language like that. She should be up any minute now.... There she is."

He pointed to a window, through which the lissome form of the young feature writer could be seen, tapping on the glass in order to attract attention.

[Illustration]

"Somebody better open it for her," the cameraman suggested. "Probably not meant to open from the outside. Not many people come in that way, I guess."

Open-mouthed, the whole newsroom stared at the window. Finally the Copy Editor got up and let a dripping Tarb in.

"Nearly thought I wouldn't make it," she observed, shaking herself in a flurry of wet pink feathers. The rest of the staff ducked, most of them too late. "Umbrella didn't do much good," she continued, closing it. It left a little puddle on the rug. "My wings got soaked right away." She tossed her wet crest out of her eyes. "Golly, but it's good to fly again. Haven't done it for months, but it seems like years." Her eye caught Miss Snow's. "You don't know what you're missing!"

"Tarb," Stet thundered, "you've been drinking coffee! Griblo!" But the cameraman had nimbly sought sanctuary in the dark-room.

"You'd better go home, Tarb." When Stet's eye tufts met across his nose, he was downright ugly, she realized. "Griblo can give me the dope and I'll write up the story myself. I can fill it out with canned copy. And you and I will discuss this situation in the morning."

"Won't go home when there's work to be done. Duty calls me." Giving a brief and quite recognizable imitation of a Terrestrial trumpet, Tarb stalked down the corridor to her office.

Drosmig looked up from his perch, to which he was still miraculously clinging at that hour. "So it got you, too?... Sorry ... nice girl."

"It hasn't got me," Tarb replied, picking up a letter marked Urgent. "I've got it." She scanned the letter, then made hastily for Stet's office.

He sat drumming on his desk with the antique stainless steel spatula he used as a paperknife.

"Read this!" she demanded, thrusting the letter into his face. "Read this, you traitor--sacrificing our whole civilization to what's most expedient for you! Hypocrite! Cad!"

"Tarb, listen to me! I'm--"

"Read it!" She slapped the letter down in front of him. "Read it and see what you've done to us! Sure, we Fizbians keep to ourselves and so the only people who know anything about us are the ones who want to sell us brushes, while the people who want to help us don't know a damn thing about us and--"

"Oh, all right! I'll read it if you'll only keep quiet!" He turned the letter right-side up.

Johannesburg

Dear Senbot Drosmig:

I represent the Dzoglian Publishing Company, Inc., of which I know you have heard, since your paper has seen fit to give our books some of the most unjust reviews on record. However, be that as it may, I have opened an office on Earth with the laudable purpose of effecting an interchange of respective literatures, to see which Terrestrial books might most profitably be translated into Fizbian, and which of the authors on our own list might have potential appeal for the Earth reader.
Dealing with authors is, of course, a nerve-racking business and I soon found myself in dire need of mental treatment. What was my horror to find that this primitive, although charming, planet had no neurotones, no psychoscopes, not even any cerebrophones—in fact, no psychiatric machines at all! The very knowledge of this brought me several degrees closer to a breakdown.

Perhaps I should have consulted you at this juncture, but I admit I was a bit of a snob. "What sort of advice can a mere journalist give me," I thought, "that I could not give myself?" So, more for amusement than anything else, I determined to consult a native practitioner. "After all," I said to myself, "a good laugh is a step forward on the road to recovery."

Accordingly, I went to see this native fellow. They work entirely without machines, I understand, using something like witchcraft. At the same time, I thought I might pick up some material for a jolly little book on primitive customs which I could get some unknown writer to throw together inexpensively. Strong human interest items like that always have great reader-appeal.

The native chap—doctor, he calls himself—was most cordial, which he should have been at the price I was paying him. One thing I must say about these natives—backward they may be, but they have a very shrewd commercial sense. You can't even imagine the trouble I had getting those authors to sign even remotely reasonable contracts ... which in part accounts for my mental disturbance, I suppose.

Well, anyway, I handed the native a privacy waiver carefully filled out in Terran. He took it, smiled and said, "We'll discuss this afterward. My contact lenses have disappeared; I suppose one of my patients has stolen them again. Can't see a thing without them."

So we sat down and had a bit of a chat. He seemed remarkably intelligent for a native; never interrupted me once.

"You are definitely in great trouble," he told me when I'd finished. "You need to be psycho-analyzed."

"Good, good," I said. "I see I've come to the right shop."

"Now just lie down and make yourself comfortable."

"Lie down?" I repeated, puzzled. I have an excellent command of Terran, but every now and then an idiom will throw me. "I tell the truth, sir, and when I am required by force of circumstances to lie, I lie up."

"No," he said, "not that kind of lying. You know, the kind you do at night when you go to sleep."

"Oh, I get you," I said idiomatically. Without further ado, I flung off my ulster and flew up to a thingummy hanging from the ceiling—chandelier, I believe, is the native term—flipped upside down, and hung from it by my toes. Wasn't the Presidential Perch, by any means, but it wasn't bad at all. "What do I do next?" I inquired affably.

"My dear fellow," the chap said, whisking out a notebook from the recesses of his costume, "how long have you had this delusion that you are a bird—or is it a bat?"

"Sir," I said as haughtily as my position permitted, "I am neither a bird nor a bat. I am a Fizbian. Surely you have heard of Fizbians?"

"Yes, yes, of course. They come from another country or planet or something. Frankly, politics is a bit outside my sphere. All I'm interested in is people—and Fizbians are people, aren't they?"

"Yes, certainly. If anything, it's you who... Yes, they are people."

"Well, tell me then, Mr. Liznig, when was it you first started thinking you were a bat or a bird?"

I tried to control myself. "I am neither a bird nor a bat! I am a Fizbian! I have wings! See?" I fluttered them. He peered at me. "I wish I could," he said regretfully. "Without my glasses, though, I'm as blind as a bat—or a bird."

Well, the long and the short of it is that the natives are planning to certify me as insane and incarcerate me, pending the doctor's decision as to whether my delusion is that I am a bird or a bat. They are using my privacy waiver as commitment papers.

Save me, Senbot Drosmig, for I feel that if I have to wait for the doctor's glasses to be delivered, I shall indeed go mad.

Distractedly yours,
Tgos Liznig

"I'll handle this myself," Stet said crisply. "I'll tell the consul to advise the Terran State Department that this man should be deported as an undesirable alien. That'll solve the problem neatly. We can't have this contaminating the pure stream of Terrestrial literature with—"
months. Might have known those Terran journalists would lead you astray. Nice fellows, but irresponsible." He flicked out his tongue. "There, I've apologized. Now will you go home?"

"Home!" Tarb shrieked. "Home when there's work to be done and--"

"--and you're not going to be the one to do it. Tarb," he said, attempting to seize her foot, which she pulled away, "I was going to tell you tomorrow, but you might as well know tonight. I've taken you off the column for good. I have a better job for you."

She looked at him. "A better job? Are you being sarcastic? What as?"

"As my wife." He got up and came over to her. She stood still, almost stunned. "That solves the whole problem tidily. An office is no place for you, darling—you're really a simple home-girl at heart. Newspaper work is too strenuous for you; it upsets you and makes you nervous and irritable. I want you to stay home and take care of our house and hatch our eggs—unostentatiously, of course."

"Why, you--" she spluttered.

He put his foot over her mouth. "Don't give me your answer now. You're in no condition to think. Tell me tomorrow."

* * * * *

It rained all night and continued on into the morning. Tarb's head ached, but she had to make an appearance at the office. First she vizzed an acquaintance she had made the day before; then she took her umbrella and set forth.

As she kicked open the door to the newsroom, all sound ceased. Voices stopped abruptly. Typewriters halted in mid-click. Even the roar of the presses downstairs suddenly seemed to mute. Every head turned to look at Tarb.

Humph, she thought, removing her plastic oversocks, so suppose I was a little oblique yesterday. They needn't stare at me. They never stare at Drosmig. Just because I'm a woman, I suppose! The gate crushed loudly behind her.

"Oh, Miss Morfatch," Miss Snow called. "Mr. Zarnon said he wanted to see you as soon as you came in. It's urgent." And she giggled.

"Really?" Tarb said. "Well, he'll just have to wait until I've wrung out my wings." Sooner or later, she would have to face Stet, but she wanted to put it off as long as possible.

She opened the door to her office and halted in amazement. For, seated on a stool behind the desk, haggard but vertical, was Senbot Drosmig, busily reading letters and blue-penciling comments on them with his feet.

"Good morning, my dear," he said, giving her a wan smile. "Surprised to see me functioning again, eh?"

"Well—yes." She offered her dripping umbrella mechanically and stood it in a corner. "How--"

"I realized last night that all that happened to you was my fault. You were my responsibility and I failed you."

"Oh, don't be melodramatic, Senbot. I wasn't your responsibility and you didn't fail me. Not that I'm not glad to see you up and doing again, but--"

"But I did fail you!" the aged journalist insisted. "And, in the same way, I failed my people. I shouldn't have given in. I should have fought Zarnon as you, my dear, tried to do. But it isn't too late!" The fire of the crusader lit up in his watery old eyes. "I can still fight him and his sacred crows—his Earthlings! If I have to, I can go over his head to Grupe. Grupe may not understand Stet's moral failings, but he certainly will comprehend his commercial ones. Grupe owns stock in other Fizbian enterprises besides the Times. Autofax, for example."

"Oh, Senbot!" Tarb wailed. "The whole thing's such an awful mess!"

"I don't think it'll be necessary to threaten that far," he comforted her. "Stet is no fool. He knows which side of his breadnut is peeled."

"I'm sure you'll do a wonderful job," she exclaimed, impulsively giving a ritual entrechat. "And I wish I could stay and help you, but—"

"I know, my dear."

"You do?" She was puzzled. "But how did the news get around so quickly?"

He shrugged. "The Terrestrial grapevine is almost as efficient as the Fizbian. Didn't you notice any change in the—ah—atmosphere when you came in?"

"Oh, was that the reason?" Tarb laughed merrily. "Somehow it never occurred to me that they could have heard so soon."

"But the morning editions have been out for hours."

The door to the office was flung open. Stet stormed in, bristling with a most unloverlike rage.

"Miss Morfatch!—" he waved a crumpled copy of the Terrestrial Tribune at her—"when I give an order, I expect to be obeyed! Didn't Miss Snow tell you to report directly to my office the instant you came in? Although that's a question I don't have to ask; I know Miss Snow, at least, is someone I can trust."

"I was coming to see you, Stet," Tarb said soothingly. "Right away."

"Oh, you were, were you? And have you seen this?" Stet fairly threw the paper at her. Smack in the middle of the front page was a picture of herself in full flight over the airfield bar. Not a very good picture, but what could you
expect with Terrestrial equipment? When the autofax came, perhaps she would be done justice.

FIZBIAN NEWSHEN GIVES EARTH A FLUTTER

"Though No Mammal, I Pack a Lot of Uplift," Says Beautiful Fizbian Gal Reporter

"I feel that you Terrans and we Fizbians can get along much better," lovely Tarb Morfatch, Fizbus Times feature writer, told her fellow-reporters yesterday at the Moonfield Restaurant, "if we learn to understand each other's differences as well as appreciate our similarities.

"With commerce between the two planets expanding as rapidly as it has been," Miss Morfatch went on, "it becomes increasingly important that we make sure there is no clash of mores between us. Where adaptation is impossible, we must both adjust. 'When in Rome, do as the Romans do' is an outmoded concept in the complex interstellar civilization of today. The Romans must learn to accept us as we are, and vice versa.

"Forgive me if I've offended you by my frankness," she said, sticking out her tongue in the charming gesture of apology that is acquiring such a vogue on Earth, Belinda Romney and many other socialites having enthusiastically adopted it, "but you've violated our privacy so many times, I feel I'm entitled to hurt your feelings just a teeny-weeny bit...."

"Those Terran journalists," Tarb said admiringly. "Never miss a trick, do they? Am I in all the other papers too, Stet? Same cheesecake?"

"You've made an ovulating circus out of us--that's what you've done!"

"Nonsense. Good strong human interest stuff; it'll make us lovable as chicks all over the planet. Gee--" she read on--"did I say all that while I was caffeinated? I ought to turn out some pretty terrific copy sober."

"And to think you, the woman I had asked to make my wife, did this to me."

"Oh, that's all right, Stet," Tarb said without looking up from the paper. "I wasn't going to accept you, anyway."

"Good for you, Tarb," Drosmsg approved.

"You're going back to Fizbus on the next liner--do you hear me?" Stet raged.
She smiled sunnily. "Oh, but I'm not, Stet. I'm going to stay right here on Earth. I like it. You might say the spiritual aura got me."

He snorted. "How can you possibly stay? You don't have an independent income and this is an expensive planet. Besides, I won't let you stay on Earth. I have considerable influence, you know!"

"Poor Stet." She smiled at him again. "I'm afraid the Fizbian press--the Fizbian consul even--are pretty small pullets beside the Solar Press Syndicate. You see, I came in this morning only to resign."

He stared at her.

"Yesterday," she informed him, "I was offered another position--as feature writer for the SP. I hadn't decided whether or not to accept when I reported back last evening, but you made up my mind for me, so I called them this morning and took the job. My work will be to explain Fizbians to Terrans and Terrans to Fizbians--as I wanted to do for the Times, Stet, only you wouldn't let me."

"It's no use saying anything to you about loyalty, I suppose?"

"None whatsoever," she said. "I owe the Times no loyalty and I'm doing what I do out of loyalty to Fizbus ... plus, of course, a much higher salary."

"I'm glad for you, Tarb," Drosmsg said sincerely.

"Be glad for yourself, Senbot, because Stet will have to let you conduct the column your way from now on. Either it'll supplement my work in the Terrestrial papers or he'll look like a fool. And you do hate looking like a fool, don't you, Stet?"

He didn't answer.

"Better give up, Stet." She turned to Drosmsg. "Well, good-by, Senbot--or, rather, so long. I'm sure we'll be seeing each other again. Good-by, Stet. No hard feelings, I hope?"

He neither moved nor spoke.

"Well ... good-by, then," she said.

The door closed. Stet stared after her. The forgotten umbrella dripped forlornly in the corner.

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NARAKAN RIFLES, ABOUT FACE!
By Jan Smith

Those crazy, sloppy, frog-like Narakans ... all thumbs and six-inch skulls ... relics of the Suzi swamps. Until
four-fisted Lt. Terrence O'Mara moved among them--lethal, dangerous, with a steady purpose flaming in his volcanic eyes.

Terrence O'Mara lay flat on his back trying to keep his big body as still as possible. Despite the fact that he was stripped to his regulation shorts, a large pool of sweat had formed on the cot underneath him. The only movement he permitted himself was an occasional pursing of his lips as he dragged on a cigarette and sent a swirl of smoke upward through the heavy humid air. Then he would just lie there watching as the smoke crept up to mingle with the large drops of water that were forming on the concrete of the command post.

"Damn! Damn Naraka, anyway! Outpost of civilization! Who'd want the blasted place except the Rumi?"

At the words, Terrence moved his head just a fraction of an inch and his eyes only a little farther to look across the room to where Bill Fielding was twisting and turning on his cot. All he could see of the other man was the wet outline of his body under a once white sheet and a hand that every so often reached into a bucket of water on the floor and then replaced a soaking T-shirt over a red head.

"You'll feel it less if you lie still," Terrence said, distressed at the necessity for talking.

"Feel it less! My God, listen to the man! What difference does it make if you lie still or move around or even run around in the suns like a bloody Greenback? Dust Bin will get you one way or another ... and if it doesn't, the Rumi will."

The visible hand lifted the T-shirt and began to pop salt tablets into an open mouth like they were so many peppermints.

"I wonder where Norton is. Out reviewing the troops?"

"Reviewing, my eye. He's up at Government House sitting in that cool living room drinking one of Mrs. Wilson's icy drinks and admiring Mrs. Wilson's shapely legs. From a discreet distance, of course. Being temporary Commanding Officer of even Dust Bin has its privileges!"

There was a rattle of drums and the blare of one or two off-key instruments from outside.

"Then why," asked Terrence, "are those poor beggars marching up and down in this blasted heat?"

"The Greenbacks? They love it! It would take more than a little heat to get under those inch-thick skins of theirs. They like to play soldier when it's a hundred and thirty under water."

There were a few more straggling notes and then the semblance of a march began.

"Listen to that, will you?" Fielding moaned, "They can't even keep time with a drum! They can't march, they can't shoot, they can't break down a Banning; they're all thumbs and six-inch thick skulls. 'Train local forces to take over! Bah! Did those desk jockeys back in New Chicago ever see a Greenback? Did they ever try to teach a Narakan to fix a bayonet to the proper end of a rifle or to fire a blaster in the right direction?"

* * * * *

Terrence was lighting another cigarette with as little exertion as possible. "Yes, but they keep trying. Ten hours a day. You don't have to drive those boys. They want to learn. Listen to O'Shaughnessy barking out orders."

"Sergeant Major O'Shaughnessy of the First Narakan Rifles!" Fielding murmured sarcastically. "A year ago he was squatting in a mud cocoon at the bottom of Suzi swamp with the rest of the frogs. Now he's got a good Irish name and he's strutting around like a Martian Field Marshal."

"I thought the names might give them a sense of self respect. Besides we couldn't pronounce theirs and I was tired of hearing Norris yell 'Hey, greenboy!' at them."

"Well, they picked the right guy when they made you Training Officer. You and those damn frogs get along like you came from the same county!"

"They aren't any great shakes for brains but you can't take anything away from me boys for willingness."

"Willingness! Hooray! They're willing, so what? So is a Suzi Swamp lizard. What'll it get them? A week after they pull the Terran forces out, the Rumi will gobble up the lot of them. Maybe they'll gobble them and us before we pull out. Who could fight in this place? Who'd want to fight? I say, to hell with Naraka! It's so near to hell already with those two blasted suns blazing sixteen hours a day. Let the Rumi have the stinking planet! Let them have the whole Centaurian System!"

"Speaking of pulling out, I wouldn't be surprised if Dust Bin wasn't the next place we let go of...."

Fielding raised himself on one elbow, "No kidding? Where did you hear that?" His sunburned and blistered face was alight with excitement.

"Well, you know how it's been. When we first came here twenty years back, we drove the Rumi out of all this country and more or less took their cat feet off the Narakan's backs but now that so much of the Earth garrison has been pulled all the way back into the Solar System, the Rumi are acting up again. So much so that the dope I got is that we may be pulling everything back into the Little Texas peninsula to wait for reinforcements and it will take
four years for those to come out from Mars."

"Great! Great! But... Ah, it's too good to be true. Can't you just picture Fielding and O'Mara parading down
Dobi street in New Chicago with their first lieutenant bars on their collars? Say, you don't suppose that's why the
Sun Maid is sticking around out here, do you? Imagine, free transportation! A two hour trip to New Chi!"

"I'd sure hate to march those two hundred miles at this time of year!"

"March? Through those swamps? Every time we run a patrol through them...."

Fielding was interrupted by a knock on the door and a skinny young Terran with sergeant's chevrons on his
shorts stuck his head through from the other room and said, "Major Chapelle's on the voice radio, sir. He's calling
from battalion headquarters and wants Captain Norton."

"Tell him Norton's up playing footsies with the Resident's wife," Fielding said, "You'd think those people down
at the river would have enough to do without bothering us in the heat of the day, wouldn't you?"

The sergeant looked shocked and started to withdraw his head. Terrence frowned Fielding into silence and
called to the sergeant, "Just a minute, Rogers. I'll talk to the Major."

Major Chapelle was a thickset, balding man in his late forties. Even the blazing suns of Naraka hadn't
succeeded in burning the sickly yellow color off his face. In the vision screen he looked like a man on his last legs.
Whatever was wrong with him didn't help his temper, Terrence thought as he lowered himself gently into a seat
before the screen.

"O'Mara! Where in hell is Norton?" he demanded.

"Well, sir, you see...." began Terrence.

"Never mind! I've a pretty good idea where he is. A fine time to be chasing skirts! Well, get this straight,
O'Mara. Orders have come through and we're pulling the battalion out. We're ordered back to Little Texas. We're
going to give up these positions along the river tonight and pull back into Dust Bin. The Sun Maid will stand by to
 evacuate us. You people are to come too. Everybody has to get out, both the military and civilians. All hell's broken
 loose down river. The Rumi are across the Muddy in half a dozen places. They've cut the 5th to pieces. New
Chicago thinks that those cats have been bringing troops in from space all along despite the agreement by both sides
not to do so. And now they have us way outnumbered." The Major's voice held a thin edge of hysteria.

"Is there any action along our front, Major?" Terrence asked quickly, hoping to stop the flow of talk before
Chapelle's hysteria communicated itself to the enlisted men who were sitting or lying about the command post.

"Not yet; just patrols across the river so far. We've got to get out, O'Mara, and get out fast. They'll be all over us
if we don't. The Colonel says for Norton to have everything ready to go. He wants the depot destroyed. Everything's
got to go, everything we can't take along. The Sun Maid won't have time for more than one trip. He wants the HQ
company and the civilians on board by tomorrow morning at the latest."

"What about the Rifles, sir?"

"What? The what?"

"The native troops, sir. The Narakan Rifles." Terrence grated.

"The Rifles? Good God, man! We haven't time for nonsense. The Rifles are only Greenbacks, aren't they? You
get Norton started burning those stores."

Terrence put down the microphone very carefully to keep from slamming it down and stalked back into his
quarters. Angrily he began to take his radiation clothing from its hooks on the wall.

"What the devil is eating you?" demanded Bill Fielding.

"We're pulling out, lock, stock and barrel," Terrence told him.

"Pulling out? Whooooee! I knew Mrs. Fielding didn't raise her boy to be a fried egg. Goodbye, Dust Bin! Hello,
New Chi!" Bill was up on his hands and knees pounding on his cot. "But what's the matter with you? You like this
place?"

"They're leaving the Rifles," Terrence said, zipping up his protective coveralls as he left the room.

II

Stepping outside on Naraka with the full power of Alpha and Beta Centauri beating down was like stepping
into a river of fire. Even with the cooling unit in his suit, Terrence was aware of the searing heat that filled the
parade ground. Looking off across the makeshift native huts, he could see the bright sides of a huge space ship-like
object. The big dirigible Sun Maid was lying in an open field. It's a funny world, he thought to himself, where you
have to use dirigibles for planetary travel. But a dirigible was the only practical aircraft when you had to use steam
turbine engines because of the lack of gasoline and the economic impracticability of transporting it in the limited
cargo holds of the occasional spacers that came out from Sol.

The Narakan Rifles were marching toward him now, the band doing absolutely nothing for The Wearing of the
Green. Three hundred big, green bodied, beady eyed, frog-like creatures were marching in the boiling heat with their
non-coms croaking out orders in English which might have come out of Alice in Wonderland.
As they marched by him, he snapped a salute. Watching them closely he tried to find two men who were in step
with each other or one man who had his rifle at the right angle. Unable to find either, he stood there conscious of
failure; failure which went beyond mere military precision however. Sloppiness at review could have been
overlooked if he had been able to find that the Narakans had any ability as fighting men but after a year of training
they seemed almost as hopeless as they had at first. It wasn't that they were completely unintelligent. In fact, other
than the Galactic traveling Rumi, they were the only extra-solar race of intelligent beings encountered by man so far.
It was just, he thought, that the hundreds of years during which the Rumi had dominated their planet had reduced the
Narakans to a state of almost complete ineptitude.

He stood there as they passed in review three times because he knew that his presence pleased and encouraged
them. Then he turned, and with dragging feet made his way down Dust Bin's single street toward Government
House.

In a few minutes he was standing in the cool, air conditioned living room of the Wilsons. Wilson was seated at
his desk rummaging through some papers while Norris and Mrs. Wilson were lounging in contour chairs admiring
each other over tall, frosty drinks.

They took the news just as he expected them to. Wilson ran his hand through his sparse, gray hair and
murmured something about it being a shame to have to leave the natives on their own after having more or less
dragged them out of their comfortable swamps. A glance from his wife silenced him.

"What the hell," Norris said, "they're only blasted thick witted Greenbacks."

Mrs. Wilson yawned, "I'll be something of a bother packing but it'll certainly be a pleasure to get back to New
Chicago. Some women's husbands get good posts in half-way civilized parts of the Universe. I don't know why I
should always have to be stuck in every backwater, hick town there is."

Wilson smiled apologetically, "Now, dear...." he began but was interrupted by the sudden ringing of the
telephone on the table near Norris' chair.

"Get that, will you, O'Mara?" the captain said, making no attempt to reach for it, "It's probably the Command
Post."

Terrence put the phone to his ear angrily and growled into it. An excited Bill Fielding was on the line. "Terry?
Is that you? Fielding here. Hell's breaking loose. There's a bunch of blasted Rumi trying to force their way into
town. They attacked the sentries down this way and may be heading for your end of town too."

Terrence dropped the phone and headed for the door. "Rumi!" he shouted and there were shouts and cries from
outside in answer. Then he heard the clack, clack, clack of Rumi spring guns. Windows of the room crashed in and
Wilson collapsed across his desk. Norton grabbed Mrs. Wilson and pulled her down onto the floor. Terrence
dropped to his hands and knees and continued toward the door as he drew his forty-five.

* * * * *

Somewhere, someone had cut loose with a Banning and its high whine drowned out the clack of the spring
guns. With a quick look around, Terrence started at a run for the next building which was the native schoolhouse. He
didn't make it. There was a clack, clack from off to his left and he threw himself forward, skidding and sliding in the
dust and gravel of the street. A warehouse across the square was on fire and three Rumi had darted from behind it. In
one brief glance he saw those long barreled spring guns of theirs and the tall, graceful bodies and the feline faces
under the plastic protective clothing.

He snapped four shots at them and saw one fall. Then he began to slither along the ground raising enough dust
to mask his movements. There were half a dozen of them in the square when he reached the rear door of the
schoolhouse. Several gleaming plastic bolts smashed into the wooden outer door a second after he had raised up to
open it and then had dropped back down.

Norton fired from the residency and momentarily scattered the Rumi and Terrence was inside the school room
and racing for the side window from which he could get a clear line of fire at the raiders. He had a brief glimpse of
Joan Allen, the school teacher, standing in a corner of the room with the tiny green figures of native children
huddled around her. Then he was at a window and had beaten out the heavy protective glass and was firing into a
mass of the catmen, firing and cursing as his gun emptied. He cursed in a stream of Martian, English and Greenback
profanity as he forced another clip into the gun.

"Lieutenant O'Mara, if you'll be so kind as to restrain your language in front of these children," a voice said
from over his shoulder.

Terrence reached back and felt something soft and forced it over against the wall out of the line of the window.
Then he risked a quick look which was almost his last. A spring gun bolt burned a groove in the windowsill next to
his head and smashed into the blackboard across the room.

"Lieutenant O'Mara, would you mind telling me what this is all about?" came the same calm determined
woman's voice from beside him. He fired again at a darting figure across the square and saw it stumble before he
had to drop to his haunches as the window above him was smashed and scattered by bolts and glass rained down about his head.

He put another clip into his gun and cursed because he had only two left. He turned his head briefly and had a quick glimpse of a white face framed in straight dark hair and a small, neat figure in a yellow dress.

"Rumi attack. One of their patrols must have gotten around the battalion."

A husky, whimpering little sound made him look down. A native child or pollywog as the Terrans called them was clinging desperately to the teacher's skirt. His tiny webbed feet clutched at the cloth as he buried his face against her leg. From behind her peered still another child, its baby frog face working spasmodically in the beginnings of a sob. Six or seven others were lying flat on the floor their bodies trembling in terror.

Terrence took another look outside and what he saw sent him into another stream of cursing. The Narakan Rifles were hurrying to the scene of action. Down the middle of the street they came in a column of fours with their drums and bugles blaring out a poor imitation of The Wearing of the Green. Their standard bearer was running at the head of the column beside Sergeant Major O'Shaughnessy.

"Oh, my God! He wouldn't...!"

"Lieutenant, please!"

"Teacher, will you shut up!" he roared as he leaped across the room toward the front door. At the harsh tone of his voice, the whimpering sounds in the room suddenly burst forth in full volume as the ten pollywogs raised their hoarse voices into full throated croaks.

Terrence braced his body against the wall and held his gun ready as he pulled open the door. In parade formation his men were moving up the street and in a moment they would be away from the buildings' protection and directly in the Rumi line of fire.

"O'Shaughnessy, you idiot!" he roared above the croaking from behind him and the rattle of firing outside.

O'Shaughnessy came to a skidding halt almost directly in front of the schoolhouse but his men kept on going, their faces set and determined. O'Shaughnessy came to attention and snapped a salute.

"Yes, sir, Mr. Lieutenant."

"Halt! Damn it, HALT!" Terrence yelled at the column of greenbacks. Their formation crumbled as they ran into each other, stepped on each other's feet and pushed and shoved. But they halted.

"O'Shaughnessy! Break ranks ... take cover ... line of skirmishers!" Terrence shouted and hit the dirt behind a sandbox in the schoolyard as the Rumi resumed firing. There was a mad scramble among the Narakans as they scattered behind walls and into buildings, moving with an incredibly rapid jumping motion which they used when in a hurry.

Terrence was so glad to see only one sprawled figure in the dust of the street that he just lay there for a few seconds spitting dust before he realized that he had forgotten to close the face visor of his radiation clothing.

* * * *

There was a slight clucking sound from beside him and when he turned he found O'Shaughnessy lying almost beside him, squinting along his carbine. The Narakan's face split into two replicas of the map of Ireland and he saluted flat handed, his webbed fingers at just the proper angle.

"O'Shaughnessy, you don't have to salute when you're lying down!" O'Mara tried to keep his voice as calm as possible.

"Yes, sir, Mr. Lieutenant. Pretty quick we fight now?"

His lieutenant ignored him and searched for signs of life in the houses across the square. There wasn't a Rumi in sight except for one on the roof of a shed next to the burning warehouse. He tried a couple of shots with his automatic and missed. He grabbed O'Shaughnessy's carbine and dropped the creature as it tried to scramble off the shed.

"Pretty soon we fight with bayonet?" O'Shaughnessy asked as Terrence handed back the carbine.

"O'Shaughnessy, why do you do things like this to me, me who took you out of your damn mud hole and made a soldier out of you?"

O'Shaughnessy's mouth formed a huge round moon, "Not understand, Lieutenant...." he began but he was ignored again as Terrence stared across the street in pained disbelief to where the heavy weapons squad of the Narakan Rifles was gathered in a huddled group behind a native house, struggling to set up their Banning Automatic Blaster and two machine guns. One of the men was down on his hands and knees balancing the heavy barrel of the blaster on his back while two others were attempting to push the ponderous breech onto it by main strength. The two machine guns were half on and half off their tripods. The leg of one of them had been bent in the wrong direction and the other was so covered with grease that the parts wouldn't fit together.

"Oh, Lord!" moaned Terrence and was bracing himself for a dash across the street when a figure in Terran battle armor came around the building on the run, dodging and crawling as spring bolts raised the dust in front of
him. It was the short, stout Gunnery Sergeant, Polasky. Terrence breathed a sigh of relief.

He turned to O'Shaughnessy, "Now, Sergeant, this is our problem. Those buildings over there are filled with Rumi. They have automatic weapons ... spring guns ... firing a clip of twenty plastic bolts. They're deadly at close to medium range. They can penetrate our battle armor." He looked at the thick, knobby skin of the Narakan, "Yours too. Now, they are probably just a patrol about the size of one of our companies. They don't seem to have any heavy weapons and ours will be in action in a few minutes. Then, O'Shaughnessy...." The Narakan was squinting along the barrel of his rifle.

"Are you paying attention, Sergeant?"

"Yes, sir! Attention, yes, sir." O'Shaughnessy started to lift his bulky three hundred pounds up off the ground. Terrence heaved with all his might against those thick khaki clad legs to knock him down again.

"Man, what are you doing?" he yelled.

"Attention, sir. Sir said...."

"No, no, O'Shaughnessy. I meant, listen to me. O'Shaughnessy, how could you? Haven't I been like a brother to you? Didn't I share my whiskey and candy ration with you?"

"Yes, sir. That's why...."

"Then for the sake of your two headed frog-faced gods, shut up and listen to me."

"Yes, sir."

"Look. In a minute our Banning will be in action," his voice was drowned out by the scream of tortured air as the Banning cut loose. "Now there is a sweet sound. What do we do next, O'Shaughnessy?"

One of the row of buildings across the square glowed red briefly as the beam from the Blaster caught it; glowed red and then burst into a ball of fire. O'Shaughnessy's mouth was open wide, his chinless face resting on the edge of the sandbox and his little black bead eyes were as large as they could get.

"What do we do now, O'Shaughnessy ... comon...."

The Narakan made a thrusting gesture with his carbine, "Bayonet ... we go in with bayonet now," he said.

O'Mara slapped him on the seat of his khaki pants. "No, no. You got to get this stuff straight."

The whine of the Banning interrupted him again and it was joined by the chatter of machine guns and rifle fire and answered by the rapid clacking of spring guns. Bolts dug into the wall of the schoolhouse and shattered them with plaster. Others shattered the front window. Terrence wiped plaster off his visor and tried again. "You've got to get this straight, O'Shaughnessy, because ... well, because you may be getting an independent command pretty soon and there won't be anyone around to tell you what to do."

The Narakan was listening to him but wide-mouthed and uncomprehending. "We're going to burn them out of those huts; burn them out or burn the houses down over their heads. About the time Polasky gets to the third one, those guys are going to break and then they'll either rush us or...."

Norton was yelling something from the Residency. There was a noise of clanking armor behind him and he could hear Fielding's voice cracking out orders as he came up with twenty hastily armed and armored clerks, cooks and radiomen from the HQ unit.

"O'Mara! O'Mara, they're breaking! They're running! Let's go!" Norton was on the porch of the Residency pouring Tommy gun slugs at the rear of the burning row of houses.

"Okay, let's go," Terrence said, lunging to his feet. The Narakan sergeant blew his whistle and the riflemen swarmed out from their shelters and started at a run across the square with Norton, Terrence and O'Shaughnessy at their head. The rest of the Terrans in full battle armor lumbered along after them.

One or two bolts whistled overhead and Corporal O'Brien dropped his rifle and fell forward clutching his leg. The smoke from the burning buildings obscured their vision but Terrence had a momentary sight of Rumi radiation clothing and emptied his clip at it.

Someone from behind threw a grenade which fell short of its target and rolled in front of them. Norton took two quick strides and kicked it into one of the flaming buildings.

III

There were about twenty Rumi, less than they had thought, fleeing across the open fields behind the burning huts. They were firing as they ran and giving out those queer yelping cries of theirs. Three or four of them fell and then Norton was shouting, calling back his men to organize fire fighting parties.

"Captain! Captain, let's go after those guys. We can cut them off before they get to the grasslands," Terrence yelled.

"Get your men after these fires, O'Mara. We can't let them spread."

There was nothing to do but obey but he delayed long enough to empty his automatic in the general direction of the fleeing Rumi. Then he turned and yelled, "Harrigan! Sergeant Harrigan! Where in the devil is that...." There was a crashing sound behind him and Harrigan stumbled through the smoke and came down on his foot, all three
hundred pounds of him.

Later, as the last smoking embers of the fire were being smothered by industrious squads of Narakans with buckets and shovels, Terrence limped back across the square with Bill Fielding.

"We should have gone after those lousy scum," Bill said, "They may cut back around the town again and give the battalion some trouble on the river road."

"Don't you think I know it! As fast as the Greenbacks can move when they want to, we could have caught the lot of them before they got into the grasslands. But Norton was worried about the fires! Of course, we're going to burn all these buildings tomorrow or the next day but Norton was afraid the Residency would catch fire."

"Probably didn't want his sweetie's fancy clothes to burn."

"They got Wilson, you know."

"Good Lord! Dead?"

"Right between the eyes. They almost got all four of us."

Fielding took his heavy battle helmet off and pushed back the glass visor of his radiation helmet to wipe the perspiration and dirt off his face. "Well, maybe Norton didn't want us to catch those damn cats. Maybe he figured he owed them that much."

O'Mara shielded his eyes as he said, "Beta's setting. It'll be night in a couple of hours and we can walk around without this blasted radiation armor for a while."

"Yeah, and we can start looking for a full scale night attack as soon as good old Alpha hides his hoary head."

"If you see O'Shaughnessy, tell him I want to see him, will you? I'm going to stop at the schoolhouse for a few minutes."

Surprise spread across Bill's freckled face, "Not the school teacher? Not you! Buddy, you've been in Dust Bin too long. You've been on Naraka too long. You'll be attending services at the Chapel next."

Terrence muttered a few old Anglo-Saxon words under his breath and limped off in the direction of the school building.

* * * * *

The Reverend Ames Goodman was the smallest Narakan that Terrence had ever seen. The Johnathian missionary from Little Texas was somewhat under two hundred and fifty pounds which was slight for a Greenback. He also spoke the best English except for some of the big shots in New Chicago. Ordinarily he was a composite of superstitious reverence and natural dignity which Terrence had always found admirable. Today, however, he couldn't have appeared more ludicrous if he had tried. He was dressed for a visit to the Residency in a white duck suit which was too small and out of which he bulged in a number of surprising places.

He and Joan Allen were talking half in English and half in Narakan as the lieutenant entered. The minister had a painfully surprised look on his round green face.

"I hope we didn't bust up your school too much, Miss Allen."

"If you are quite finished with your shooting and cursing, Lieutenant O'Mara, perhaps you have time to explain to Rev. Goodman and me what this talk about evacuation means."

As she spoke, she brushed stray strands of black hair up under her radiation helmet. For the first time in the six months that she had been in charge of the orphan school in Dust Bin, Terrence decided that maybe she was pretty after all. He wasn't sure whether it was the high color which excitement lent to her usually pale face or if Bill Fielding was right in saying he had been on Naraka too long, but Joan Allen was beginning to look good to him. At the moment the feeling wasn't at all mutual.

"Is it true that the Defense Force is pulling out and leaving the rest of us to the Rumi?"

Terrence took off his helmet and let the rapidly cooling air strike his head. "Not exactly, teacher," he said, "The Fifth is pulling out but so are all the Terrans in Dust Bin. Everyone's being ordered back to Little Texas. That's why the Sun Maid is standing by."

"All the Terrans, Lieutenant? What about the people here who depend on us? What about my children?"

O'Mara somehow couldn't quite look either of them in the face. He muttered something about having to get back to his command post and started out the door. Joan called after him as she noticed his limp, "Lieutenant, I'm sorry, I didn't know you have been wounded."

"Oh, it's nothing ... nothing," he said, hurrying away, his neck reddening from something more than the attention of Beta Centauri. How in the name of Naraka's sixty devils could you tell a woman that one of your own non-coms had stepped on your foot and nearly broken your instep?

The battalion straggled into Dust Bin during the night. It hadn't exactly fought its way back from the river but had had enough casualties to make the men nervous and jumpy without tempering them at all. One of the casualties had been Lt. Colonel Upton. Now Major Chapelle was in command. The men of the battalion were nervous but Chapelle was riding on the thin edge of panic. He ordered everyone on board the Sun Maid at once and then
countermanded the order and formed a defense perimeter around the town. He threw out patrols which were unable
to contact any Rumi on the Dust Bin side of the river.

The next morning Terrence was summoned to Government House for an officers’ conference. As he hurried
along its single street, Dust Bin was in a state of confused and helpless excitement. The three or four hundred
Narakans who made up its population were all in the street or square. Many of them were carrying their belongings
on their shoulders and looked as if they were only waiting for an order of some kind to send them scurrying off
toward the Suzi swamps.

As O'Mara reached the veranda of the Residency, Rev. Goodman was speaking with Joan Allen by his side. His
words were aimed at Chapelle, Norton and a large gray-eyed man whom Terrence recognized as the Captain of the
Sun Maid.

"When you came, you earthmen in your great ships, the Narakan was a hunted creature on his own planet and
had been back as far as he could remember. You drove off the Rumi and took parts of the planet for your own use
but you did not hunt the Narakan. You brought him out of his swamps and taught him much; to wear clothes, to till
the ground and many other things. You even gave him your religion. But now the Rumi have returned and you say
you are not strong enough to hold all the planet ."

" * * * * *

Major Chapelle was impatient, "That's right, Reverend, there's too many of them. The garrison just isn't big
enough to hold everything and it's too far back to Earth for us to expect any reinforcements for a year or even
longer."

Norton took over. "You're an educated ... ah ... man, Goodman. You see what the problem is. We can't hold
everything so we've got to cut our losses. All of the most important resources and towns are in the Little Texas area
and so we're pulling back into there."

"I see. Yes, I understand. The people of Dust Bin are part of the losses that must be cut."

"Now, now. Don't put it that way, Reverend. The natives can always take refuge in the swamps, you know."

"Yes. I suppose it must be so. Back to Little Texas for the Terrans and back to the swamps for the Narakans.
Back to living naked in the mud, back to fishing for our food and back to thinking only of the next meal."

"It really isn't that bad," Chapelle said. "As soon as the situation adjusts itself, the Terran forces will be coming
back. Then you can come out of your hiding places and resume your regular life again."

"Yes. And in the meantime our only problem will be to stay out of the way of the Rumi."

"I don't believe that they will go out of their way to harm you. It's the Terrans they want to drive out."

Suddenly the Reverend Goodman was shaking his fist in the Major's face, forgetting in his excitement both his
manners and his correct English. "Not hurt! Not hurt, Mr. General? No, they not hurt, they just eat! They favorite
food is Naraka steak."

"Now, now, calm yourself," Norton put a hand on Goodman's shoulder. "There's plenty of room in the Sun
Maid for you and the rest of your people will be safe enough in the swamps."

"What about my children?" demanded Joan Allen.

"Children, Miss Allen? I don't know.... Oh, yes, you mean the poly ... the children. Why, I assume they will go
with their parents."

Joan placed a small fist firmly on each of her slim hips. "Major, all the children in the mission school are
orphans. They have no parents. None of them have ever lived in the swamps."

"Ah yes. But I hardly see what we can do about it, Miss Allen."

"Well, Major, I'm going to tell you what I'm going to do about it. Unless those kids are loaded on the Sun Maid
in place of some of this junk," she waved a hand at the piles of luggage which belonged to Mrs. Wilson, "I'm going
to stay with my charges and leave you with the problem of explaining to the Mission Board and to the Bishop of
New Chicago just why you left me behind."

At the mention of the extremely influential Johnathian Bishop the Major looked more worried than ever. After
a short conference with Norton, he turned to Joan.

"Very well, Miss Allen. The children will go in the airship. I'm sure that Mrs. Wilson will be only too glad to
leave some of her clothes to make room for them."

"Thank you, Major." Joan said, making no attempt to gloat over her victory.

"Now, Captain, I understand that most of the military stores have been destroyed and that the men are ready for
embarkation," Chapelle went on hurriedly, addressing himself to the captain of the Sun Maid. "We will have about
three hundred and twenty, no ... about three hundred and thirty passengers for you."

The captain shook his head doubtfully, "It's a big load. I hope we can make it without any trouble."

"Well, then," Chapelle went on, "We'll go aboard during the day after we complete the destruction of the stores
and facilities. The native troops under Lieutenant O'Shaughnessy will cover our embarkation and then convoy the
civilians as far as the Suzi swamps. Afterwards they will march overland to Fort Craven on the Little Texas border."

Terrence had never had any urge to be a hero. He had always pictured himself retiring at a ripe old age as a Colonel or Brigadier and raising canal oranges on Mars, but suddenly the memory of the Narakan Rifles rushing down the street with bugles blaring and flag waving right into the Rumi line of fire rose before him. The thought of O'Shaughnessy, even with his new lieutenant's commission, leading the blundering troops along the two hundred miles to Fort Craven was too much for him.

"I beg your pardon, Major," he heard himself saying, "But as the Narakan Training Officer, I think that I should remain in command of the unit in its overland march."

The Major was dumfounded. Norton looked as if he were sure the Narakan climate had proven too much of a strain for the lieutenant.

"Lieutenant O'Mara, are you sure...." began Chapelle.

"Are you nuts, O'Mara? Do you know what you're asking for?" demanded Norton.

"Yes, sir. I feel that since Colonel Upton appointed me Training Officer for the Narakan Rifles, it is my duty to stay with them until I am relieved."

Chapelle's look of astonishment had changed to one of relief. It would be far easier to explain the hurried abandonment of the Narakan Rifles to the native representatives at New Chicago if a Terran officer were to remain with them.

"Well," he said, "I could, of course, relieve you of your responsibility but if you feel that...."

"I do, sir." Terrence said quickly lest he be tempted to back out.

IV

Later in the day as he sat in the shade of the command post's overhanging roof with his back against a stack of sand-bags, he cursed himself for sixteen kinds of an idiot as he watched the evacuation begin. Beta was dropping low over the pink Maldo hills as the long line of earthmen filed up the gangway into the big airship.

"Hello," said a voice behind him. He turned to find Joan Allen standing there clothed in radiation armor and holding a small canvas bag in one hand. "I thought ... I mean ... I came to say good-bye."

"Hello, yourself. I thought you were on board with the rest of them." He got up hastily.

"No. I got the kids on board but I wanted one more look at the schoolhouse before we shoved off."

"Somehow he was holding onto her arm, "I guess it meant a lot to you, that schoolhouse," he said."

"Yes, it did. I ... I was afraid that I wouldn't get to see you when you get to New Chicago."

"There's no danger of that, Joanie. If and when I get there, I'll be looking for you ... that is ... if you want to see me."

"If you think you can stand an old maid school teacher, I'll be looking for you." She was very close to him now. "Why did you do it, Terrence? Why are you making the march with the Narakans? Fielding says your chances aren't very good."

"I'll thank Fielding to keep his big mouth shut! I don't really know why, probably kind of an Earthman's Burden, noblesse oblige ... you know ... something like the sort of thing Kipling used to write about."

"Hell," she said, surprising him with her vehemence, "you don't believe that guy any more than I do. It was old when Kipling wrote it and it's even older now. I think that somewhere under that tough Irish skin of yours, there's a sentimental fool hiding."

She was still closer now with her hands pressed lightly against his chest and suddenly his arms went around her, he lifted her protective visor and forced his lips down hard on hers. All of her primness had disappeared as she leaned against him, returning his kiss with a burning eagerness which a more experienced woman might have controlled.

There were tears running down his cheeks and he knew they weren't his. He released her slightly and looked down into her tear streaked face, wondering how it was possible for them to have been at the same post for six months without really knowing each other.

"I guess I'm kind of crazy about you, teacher," he said.

He had lifted her off her feet and she clung there with her arms around his neck. "Terrence, I can't leave you ... I...."

As Terrence bent over to kiss her again there was a loud cough and Bill Fielding was standing there dressed in full battle armor. He grinned and said, "Much as I hate to break this up, I don't think Chapelle is going to hold the Sun Maid much longer."

Terrence set Joan gently on her feet and she turned and fled toward the waiting ship. He watched until she was on board and then turned to stare at Bill. Still grinning broadly, Bill clapped him on the shoulder as he said, "I could never have faced those bartenders on Dobi Street if I had gone back without you. We better get going, hadn't we? Sergeant Polasky's down with the men. He couldn't bear to leave his Bannings."
"Well, I'll be damned!" was all O'Mara could find to say as he watched the big airship lift itself in the fading light, circle and pass through the smoke of Dust Bin for the last time.

Throwing their gear over their shoulders, the two officers crossed the parade ground to where the two hundred khaki clad figures of the Narakan Rifles stood waiting with Sergeant Polasky clucking slightly as he fussed over his Bannings.

O'Shaughnessy was wearing his new lieutenant bars and a pith helmet and was carrying a large piece of wood in imitation of Norton's swagger stick. Terrence took one look at him and at the two orderlies who stood behind him holding his field kit. He strode toward him scowling, placed his fists on his hips and stood glaring up at the Greenback as he roared, "So! It's delusions of grandeur you've got, is it? Where are Hannigan and O'Toole and their patrols? Why aren't they back?"

O'Shaughnessy stiffened to attention trying to pull in his great stomach. "They are back, Mr. Lieutenant Sir.... I forgot. They had nothing to report ... no contact."

Terrence looked him up and down, "If you foul up just once more ... I'm going to ... I'll split your gizzard, stuff it with To-To leaves and send you to the Rumi for their breakfast with my compliments!"

O'Shaughnessy shivered at the dire threat as O'Mara turned to Rev. Goodman who stood with his people clustered about him. "All right, Reverend, you can move out with your flock. I'll throw patrols out in front of you and bring up the rear with the rest of the Rifles. We'll see you as far as the edge of the swamps."

In a long straggly line, the refugees started out with the native police keeping order and Goodman marching at their head. The two drums and the three bugles of the Narakan Rifles struck up a badly mangled version of Back to Donegal, and the column followed on the heels of the civilians. Once or twice Terrence glanced back at the smoke and flame that had been Dust Bin before he turned his face forward across the miles of grasslands to where the Suzi swamps lay.

Darkness had fallen but progress wasn't difficult until one of those sudden, lashing storms for which Naraka was famous hurled itself upon them, flattening the tall grass, raising swirls of dust and finally turning the dust into thick, clinging mud.

As suddenly as it had come, the storm was gone. But by that time they were in the swamp itself. Night in the Suzi swamps. Swamps composed of a sticky, gray mud and heavy tangled undergrowth. The night was as black as the day had been bright. The column which had left the civilians at the edge of the swamp was pushing slowly forward. The Narakans glided along on their bare, webbed feet and the Terrans pushed along on snowshoe-like glides attached to their boots.

Bill Fielding, bareheaded with his helmet thrown back over his shoulder, floundered along beside Terrence. "Did you ever see a place like this? Did you ever see mud like this? Even the Irish bogs couldn't be this bad."

Terrence checked his map, shielding his flashlight carefully. "We'll be out of the worst of this by tomorrow morning," he said.

"If we live until tomorrow morning," Fielding replied, "those Rumi have eyes like the blasted jungle cats they're descended from."

"I don't think we have much to worry about until we get out of the swamps. I doubt if their patrols would penetrate very deeply into this mess."

"How about the radio? Has Polasky been able to get through to Fort Craven?" asked Fielding.

O'Mara shook his head, "no. You know what Beta's radiations do to radio reception this time of year. Even at night it takes a powerful transmitter to reach farther than twenty or thirty miles."

Later in the night, with a good ten miles of swamp country between him and the enemy, Terrence called a halt on a slightly raised spot of almost dry ground. The unwearied Greenbacks and the exhausted Terrans dropped down in huddled groups. The patrols that had penetrated to the edge of the swamp came in to report that they had contacted no Rumi ahead. Terrence munched a can of cold beans and fell over in an exhausted sleep to the sound of O'Shaughnessy placing sentries about the camp.

The next day's march was a nightmare to the lieutenant. If anything, the heat and humidity were worse in the swamps than they had been in Dust Bin and the going got tougher every mile. The mud was softer and the undergrowth had to be cut away by bayonet-wielding Narakans before the main body could move through. Terrence had thrown off his battle armor and lost his radiation helmet somewhere in the morass as had other of the Earthmen. Hannigan had prepared a thick mess of mud and grass which the Terrans applied to exposed parts of their bodies.

Late in the afternoon of the second day the Narakan Rifles came to a tepid little stream that marked the end of the swamps, and for the first time Terrence ordered a rest of longer than two hours. Bill Fielding was lying flat on his back in the grass beside the stream with his feet dangling in the water, shoes and all, when O'Mara dragged
himself wearily back from inspecting the pickets and flopped down beside him.

"If I never to my dying day see another speck of mud," Fielding muttered as he ate a bar of tropical chocolate that was as mud covered as he was, "I'll still have seen more than all the Fieldings for two hundred years back have seen on Earth and Mars."

"And now," said Terrence as he eased over on his back with a heavy sigh, "that we have run out of mud, we can start looking for Rumi."

"At least it'll be a change! Here Kitty! Here kitty! Nice Rumi! Come and get a bayonet in..."

Clack, clack, clack. The sound of spring guns broke the stillness of the afternoon and was followed by the sound of rifles and a cry of pain.

"Oh, Lord!" moaned O'Mara, "now it starts!" He was on his feet, gripping his carbine and running bent over. Fielding was at his heels, dragging a machine gun off the ground.

"O'Shaughnessy! Hannigan! Take the first platoon. Move up to support the pickets. O'Toole! On the double! Take your squad and try to get around the firing. Bill, you and Polasky stand by here with the rest of the men and the Bannings."

Terrence had plunged into the stream and splashed across and was clambering up the opposite bank when one of his pickets came crawling and stumbling back clutching a wounded arm. "Mr. Lieutenant! Mr. Lieutenant! Rumi! Rumi! Many Rumi up ahead! Sullivan and O'Leary dead! Rumi get!"

"Medic! Medic!" O'Shaughnessy was yelling in his ear with the full-throated croak of an adult Narakan, drowning out what the wounded picket was trying to say.

"How many? How many Rumi, man?" Terrence demanded.

"Twenty... thirty... maybe thousand!" the Narakan gasped as the Medic led him off.

"Twenty, thirty, maybe thousand. That gives us a damn fine idea of what we're up against!"

While his men dragged their big bodies up the bank of the stream, O'Mara stood scowling at the eight foot high grass. Usually about a foot high, the hardy and ubiquitous purple grass of Naraka grew far more lushly around the edges of the swamps. He felt that it would be a risky business at best to plunge into it after an unknown number of enemy. At the same time he had an illogical determination not to leave the bodies of his men in the hands of the Rumi. He looked at the broad, big-mouthed exaggerations of Irish faces around him, heaved a sigh that came from deep in his chest and ordered, "All right, men. Spread out. Keep low and keep your eyes open. And try not to shoot each other."

"We fix bayonets now, Lieutenant, sir?" Hannigan asked.

"You keep your eyes open, Sergeant," Terrence snapped, "I'll tell you when to fix bayonets."

The noisy rustling of his men's heavy bodies as they pushed through the grass made him nervous and irritable. Then suddenly, just as they were edging their way around a gully, a dozen Rumi were swarming down on them. Terrence cut down two with his carbine but his men were firing and missing as the incredibly fast catmen hurtled at them. He had a brief glimpse of O'Shaughnessy spraying submachine gun slugs wildly about and then there was a hail of spring bolts and two of his men were down. The whole platoon was thrashing through the grass in their direction and the Rumi were gone as quickly as they had come.

"Come on!" Terrence shouted, breaking into a run with twenty or thirty Riflemen after him. A bolt grazed his cheek and another cut down a man to his right. He emptied his carbine in the general direction of the Clack, Clack, Clack. Hannigan was roaring a primitive bull-throated chant and firing at everything that moved. O'Shaughnessy managed to jam his gun and was beating frantically at it with one webbed fist. They burst into a clearing filled with Rumi and both sides blazed away at point blank range. It was hard for even a Narakan to miss at that close range and the Rumi broke and ran just as Sergeant O'Toole and his squad came out of the grass on the other side of the clearing.

The Rumi, trapped, turned and dashed at Terrence and his men. The lieutenant drove his fist into one cat faced creature and smashed his empty gun across the head of another. Hannigan grappled with one of the lithe gray-bodied things and slowly crushed it beneath his 350 odd pounds. O'Shaughnessy beat another insensible with his jammed Tommy gun. Several Narakans were down but most of them had taken Rumi with them.

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Terrence was knocked off his feet by a gray ball of fury that leaped at him wielding a stiletto-thin knife. He caught at the Rumi's arm with both hands but the creature was not only fast but strong. It twisted out of his grasp and slashed at him and only a quick sideward roll saved him. Desperately he brought his fist down on his assailant's head.

The Rumi's grip relaxed slightly and Terrence drove his fist full into its face and locked his legs about its waist. The catman couldn't have weighed more than a hundred and fifty pounds but all of it was wiry strength. It clawed at him now, ripping his protective clothing and gashing his legs, meanwhile trying to get its knife into play. He was vaguely conscious that his men had disposed of the rest of the Rumi and were dancing around him frantically trying
to get a chance to aid him. He was struck by the incongruity of a civilized being descended from simian ancestors and a civilized being descended from feline ancestors fighting fang and claw while a bunch of misplaced amphibians danced about them.

Making his weight count he suddenly twisted and hurled the Rumi under him but something hit him a terrific blow on the back of the head and blackness closed in.

V

O'Mara awoke with a head that felt like all the hangovers of a misspent life.

"Have a nice rest?" Bill Fielding asked.

Terrence reached a weak hand to the back of his head and felt bandages. "Did I catch a spring bolt?" he asked.

Bill grinned, "Well, no. Not exactly. It was more on the order of Private O'Hara's rifle butt. He was trying to hit the Rumi you were necking with."

"I might have known," Terrence groaned.

"We lost six men but recovered all the bodies except for one. We've got four wounded ... litter cases. Thought you were going to make it five for a while."

"Well, they won't slow us down too much. We still have about a hundred and fifty miles to go. We'll camp here for the night and move out at dawn."

Marching in the early morning and resting in the heat of the day before another afternoon march, the Narakan Rifles covered another fifty miles of the distance to Fort Craven without incident but not without signs of Rumi. Twice they came on recently occupied camps and once they caught sight of a Rumi patrol moving parallel to their own line of march.

The next morning, which was blistering and cloudless, they were only seventy miles from the Fort.

"Maybe we ought to give the radio another try." Terrence decided. "We're close enough to have a chance of getting through now."

Polasky set up the field radio.

"Hello, Balliwick. Hello, Balliwick. This is Apple Three Three. Can you read me? Come in, please."

O'Mara and Fielding sat and listened while he repeated the call a dozen or more times. His only answer was the heavy static that Beta produced in most electronic instruments. The same static that made radar and space scanners all but useless, that limited aircraft to the big dirigibles and weapons to old fashioned rifles and machine guns.

"I guess we'll know what's going on when we get there!" Terrence said. He wiped his forehead with his arm, noticing that the heavily caked mud was beginning to crack off. He would be in for a bad case of sun poisoning probably.

A rare breeze had sprung up and drifting down it from the west came the sound of gunfire. As one man, everyone in the camp stiffened.

"Did you hear that?" demanded Fielding.

"I think I hear a Banning," Polasky said, "sounds like it's coming from in back of us ... off to the west."

"From what our scouts have been able to pick up, that's the general direction that the Rumi have been moving," Terrence said.

"But there's nothing over that way. What in hell could they be attacking?" Fielding was on his feet, looking off in the direction from which the sounds were coming.

Terrence was aware of an increasingly uneasy feeling. He got to his feet and picked up his gear. "The sounds could be deceiving. We might as well get moving. It isn't going to get much cooler before nightfall."

* * * * *

An hour later they were hotly engaged with a large force of Rumi. Rumi armed for the first time with heavier weapons, mortar-like guns that hurled pods of smothering dust that caused almost instant strangulation. Rumi who attacked suddenly, giving them time only to drop to the ground and set up the Bannings and machine guns before three hundred howling fiends came charging through the grass at a dead run, firing as they came.

O'Mara was behind a machine gun and Fielding and Polasky each had a Banning in action. They met the Rumi charge with a withering hail of lead and fire. The Narakans lying as flat as their huge chests would allow them were firing as fast as the automatic rifles would fire. The Bannings swept the line of charging figures. As the beams paused for a moment, the charge would take effect and a ball of fire would mushroom skyward, leaving a dozen seared cat bodies on the ground. Terrence swept his machine gun along in a swath behind the Bannings, picking off what they left. Some dozen catmen made it to within ten yards of their front but sprawled still or lay kicking briefly until a Greenback put another bullet into him.

The Rumi were gone, withdrawing to the west and Terrence was yelling and cursing at his men to keep them from breaking ranks and following them. Three Riflemen and O'Toole were dead and Sergeant Polasky was coughing out his life beside his Banning with a spring gun bolt in his stomach.
"Those damn cats!" he was muttering when O'Mara reached him, "those damn cats. We showed 'em, didn't we, Lieutenant? That Banning's a good gun if you...."

They buried the Greenbacks in eight foot graves and the Earthman in a seven foot one. "Those dirty, lousy, stinking...." Bill Fielding was beating his fist into the palm of his hand. "We got one of them alive this time, Terrence. Hannigan knows a little of their lingo. His old man escaped from one of their breeding pens on the other side of the Muddy. He's working him over."

In the twenty odd years that Terrans and Rumi had occupied different halves of the same planet, the number of men who had learned the Rumi language wouldn't have filled a small room. So Terrence was surprised at Bill's information and hurried toward the place where the interrogation was taking place. Before he got there, he heard a piercing cat cry which ended in a gurgle and when he reached the group of Greenbacks, Hannigan was wiping his bayonet on the grass. He stood looking down at a Rumi officer whose throat was neatly slit from furry ear to furry ear. Then fists clenched on his hips, he confronted his men.

"I don't suppose it ever occurred to you bunch of dimwits that we might have gotten some information out of this guy. He might have talked, you know."

"He talk," grinned Hannigan, "he talk plenty. He feared we might hurt him. We tell him no hurt if he talk. Ha!"

"He say big flyship down, Mr. Lieutenant," said O'Shaughnessy.
"What? What do you mean?" demanded O'Mara.
"Flyship ... Sun Maid crash in storm... Rumi find."
"Good God! The Sun Maid!" Terrence gasped, "That storm the first night!"
"They surround and attack Terrans. These ones on way to join attack when meet us," O'Shaughnessy went on.
"He tell where ship down," Hannigan said, "it near bend in Big Muddy ... place I know. Ten, twenty mile back."

The Greenbacks were watching the Terrans, fingering their bayonets eagerly and hugging their rifles. Terrence had the impression that they were beginning to like their jobs. He turned to Bill Fielding, "Well, Bill, it looks like we came about twenty miles too far."

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"He tell where ship down," Hannigan said, "it near bend in Big Muddy ... place I know. Ten, twenty mile back."

A two hour's forced march with the sun beating down and the sound of firing growing closer. Only a column of Greenbacks could have done it and only a crazy Irishman would have asked them to. They came up over a rise and looked down a gentle slope toward the brown twisting snake that was the Big Muddy. On its banks lay the broken shape of the airship and swarming across a burned circle around it were Rumi, thousands of them. The firing had slackened in the last few minutes and now they could see why. The Rumi were assaulting and were at close grips with the ring of defending Terrans.

"Now?" questioned O'Shaughnessy, "we fix bayonets now?"
"Yes," replied Terrence, "now we fix bayonets."

At his word three hundred big clumsy hands reached for three hundred bayonets and fixed them to three hundred rifles.

"O'Shea, take O'Toole's squad and stand by up here with the Bannings. O'Shaughnessy, take the left flank. Bill, you take the right. Let's go!"

There wasn't a sound out of the Rifles as they started down the hill, none of their usual croakings and bellowings, just silence and the heavy thud of their feet. The Rumi had seen them. Many of those in the rear of the attack were swinging about to face them. Spring gun bolts began to whiz in their direction. One or two Narakans fell. They were closer to the struggle now, closer to the tightly packed Rumi and the hand to hand struggle about the Sun Maid.

Terrence was firing, throwing lead into the gray-bodied mass ahead of him but his men were just thundering along with their little black eyes fixed on their old oppressors, bayonets leveled in front of them in approved training school method. They resembled nothing so much as a regiment of tanks hurtling at an enemy. The momentum of their charge carried them half way through the Rumi ranks, the terrific force of the plunging amphibians bowling over the lighter catmen.

Bayonets, clubbed rifle and heavy webbed fist fought against claw, teeth and knife. There was almost no firing, almost no sound save for the cries of the Rumi and an occasional cheer from the Terrans.

Terrence emptied his Tommy gun, hurled it in the face of a Rumi and reached for his knife and automatic. A Rumi knocked him off his feet with the butt end of a spring gun but before he could do more, Hannigan stepped over his lieutenant and plunged his bayonet into the catman. The Irishman scrambled to his feet amidst the gray furry bodies, thrust his .45 into a snarling face and pulled the trigger. The face disappeared but another took its place and he fired again. A Rumi with a knife grabbed at him from behind and he raised his pistol again but the cat was
already down with a bayonet between his shoulders.

The Greenbacks were yelling now, lifting those great voices of theirs in full throated bullfrog croaks. The Rumi, trapped and desperate, were scattering and trying to flee down river. O'Mara stumbled over a barricade of rocks and boxes and almost got a Terran slug in him before he realized that they had cut their way through to the broken ship. He was up in a minute and urging his men on after the scattering enemy. Twenty or thirty of them tried to make a stand around a tall Rumi officer but O'Shaughnessy at the head of a wedge of Narakans swept into them at a full run.

Their bayonets flashed for a few seconds and then flashed no more, the steel was covered with blood. A few hundred Rumi made it to the river under a hail of fire from O'Shea and his squad on the hill. Hardly pausing to consider their cat-like aversion to water, most of them plunged in and struck out for the other shore. The rest were cut down on the bank by onrushing Greenbacks. Terrence grabbed hold of one of his buglers and then had to practically beat the man over the head to get him to sound Recall.

Bill Fielding picked his way among the bodies and came toward Terrence holding his left arm. O'Shaughnessy was leaping up and down and waving his fist across the river.

"Things different now! All different now! One Greenback better than four, five, eight Rumi!"

"At least that many," Terrence said under his breath before he roared at O'Shaughnessy, "Fall the men in on the double now! We're going to march back to the Sun Maid in proper military style."

There was a blowing of sergeant's whistles, the shouting of corporals, and the Narakan Rifles slowly formed ranks. Some were missing and others were limping and holding wounds but they stepped out smartly as the column headed back up the river. Every rifle was at the correct slope, every man was in step as they marched through the makeshift barricade and past where Chapelle was standing. The drum and bugle corps struck up The Wearing of the Green just as O'Mara shouted, "Eyes Right!" and every eye swung right in perfect unison. A tattered and weary Chapelle brought a surprised hand up to salute and the Narakan Rifles came to a snappy halt.

A small, black haired figure threw itself at Terrence and his arms were again holding Joan Allen. "I knew you'd come," she said, "only a big, crazy Irishman like you could do it."

He kissed her and then pressed his mud-caked face against hers as he said into her ear. "Only three hundred big, crazy Irishmen, baby. There's not a drop of anything else in me boys."
STOP LOOK AND DIG
By George O. Smith

The enlightened days of mental telepathy and ESP should have made the world a better place, but the minute the Rhine Institute opened up, all the crooks decided it was time to go collegiate!

Someone behind me in the dark was toting a needle-ray. The impression came through so strong that I could almost read the filed-off serial number of the thing, but the guy himself I couldn't dig at all. I stopped to look back but the only sign of life I could see was the fast flick of taxicab lights as they crossed an intersection about a half mile back. I stepped into a doorway so that I could think and stay out of the line of fire at the same time.

The impression of the needle-ray did not get any stronger, and that tipped me off. The bird was following me. He was no peace-loving citizen because honest men do not cart weapons with the serial numbers filed off. Therefore the character tailing me was a hot papa with a burner charge labelled "Steve Hammond" in his needler.

I concentrated, but the only impression I could get would have specified ninety-eight men out of a hundred anywhere. He was shorter than my six-feet-two and lighter than my one-ninety. I could guess that he was better looking. I'd had my features arranged by a blocked drop kick the year before the National Football League ruled the Rhine Institute out because of our use of mentals and perceptives. I gave up trying— I wanted details and not an overall picture of a hotbird carrying a burner.

I wondered if I could make a run for it.

I let my sense of perception dig the street ahead, casing every bump and irregularity. I passed places where I could zig out to take cover in front of telephone poles, and other places where I could zag in to take cover beyond front steps and the like. I let my perception run up the block and by the time I got to the end of my range, I knew that block just as well as if I'd made a practise run in the daytime.

At this point I got a shock. The hot papa was coming up the sidewalk hell bent for destruction. He was a mental sensitive, and he had been following my thoughts while my sense of perception made its trial run up the street. He was running like the devil to catch up with my mind and burn it down per schedule. It must have come as quite a shock to him when he realized that while the mind he was reading was running like hell up the street, the hard old body was standing in the doorway waiting for him.

I dove out of my hiding place as he came close. I wanted to tackle him hard and ask some pointed questions. He saw me as I saw him skidding to an unbalanced stop, and there was the dull glint of metal in his right hand. His needle-ray came swinging up and I went for my armpit. I found time to curse my own stupidity for not having hardware in my own fist at the moment. But then I had my rod in my fist. I felt the hot scorch of the needle going off just over my shoulder, and then came the godawful racket of my ancient forty-five. The big slug caught him high in the belly and tossed him back. It folded him over and dropped him in the gutter while the echoes of my cannon were still racketing back and forth up and down the quiet street.

I had just enough time to dig his wallet, pockets, and billfold before the whole neighborhood was up and out. Sirens howled in the distance and from above I could hear the thin wail of a jetcopter. Someone opened a window and called: "What's going on out there? Cut it out!"

"Tea party," I called back. "Go invite the cops, Tommy."

The window slammed down again. He didn't have to invite the law. It arrived in three ground cruisers and two jetcopter emergency squads that came closing in like a collapsing balloon.

The leader of the squadron was a Lieutenant Williamson whom I'd never met before. But he knew all about me before the 'copter hit the ground. I could almost feel his sense of perception frisking me from the skin outward, going through my wallet and inspecting the Private Operator's license and my Weapon-Permit. I found out later that Williamson was a Rhine Scholar with a Bachelor's Degree in Perception, which put him head and shoulders over me. He came to the point at once.

"Any ideas about this, Hammond?"

I shook my head. "Nope," I replied. He looked at one of his men.

The other man nodded. "He's levelling," he said.

"Now look, Hammond," said the lieutenant pointedly, "You're clean and we know it. But hot papas don't go out for fun. Why was he trying to burn you?"

"I wouldn't know. I'm as blank as any perceptive when it comes to reading minds. I was hoping to collect him
...whole enough to ask questions, but he forced my hand." I looked to where some of the clean-up squad were tucking the corpse into a basket. "It was one of the few times I'd have happily swapped my perception for the ability to read a mind."

The lieutenant nodded unhappily. "Mind telling me why you were wandering around in this neighborhood? You don't belong here, you know."

"I was doing the job that most private eyes do. I was tailing a gent who was playing games off the reservation."

"You've gone into this guy's wallet, of course?"

I nodded. "Sure. He was Peter Rambaugh, age thirty, and----"

"Don't bother. I know the rest. I can add only one item that you may not know. Rampaugh was a paid hotboy, suspected of playing with Scarmann's mob."

"I've had no dealings with Scarmann, Lieutenant."

The Lieutenant nodded absently. It seemed to be a habit with him, probably to cover up his thinking-time. Finally he said, "Hammond, you're clean. As soon as I identified you I took a dig of your folder at headquarters. You're a bit rough and fast on that prehistoric cannon of yours, but----"

"You mean you can dig a folder at central files all the way from here?"

"I did."

Here was a real esper for you. I've got a range of about two blocks for good, solid, permanent things like buildings and street-car tracks, but unfamiliar things get foggy at about a half a block. I can dig lethal machinery coming in my direction for about a block and a half because I'm a bit sensitive about such things. I looked at Lieutenant Williamson and said, "With a range like yours, how come there's any crime in this town at all?"

He shook his head slowly. "Crime doesn't out until it's committed," he said. "You'll remember how fast we got here after you pulled the trigger. But you're clean, Hammond. Just come to the inquest and tell all."

"I can go?"

"You can go. But just to keep you out of any more trouble, I'll have one of the jetcopters drop you off at home. Mind?"

"Nope. But isn't that more than the police are used to doing?"

He eyed me amusedly. "If I were a mental," he said, "I could read your mind and know that you were forming the notion of calling on Scarmann and asking him what-for. But since I'm only a mind-blank esper, all I can do is to fall back on experience and guesswork. Do I make myself clear?"

Lieutenant Williamson's guess-work and experience were us good as mental sensitivity, but I didn't think it wise to admit that I had been considering just exactly how to get to Scarmann. I was quickly and firmly convoyed home in a jetcopter but once I saw them take off I walked out of the apartment again.

I had more or less tacitly agreed not to go looking for Scarmann, but I had not mentioned taking a dig at the apartment of the dear departed, Peter Rambaugh.

Rambaugh's place was uptown and the front door was protected by an eight tumbler cylinder job that would have taxed the best of esper lockpicks. But there was a service entrance in back that was not locked and I took it. The elevator was a self-service job, and Rambaugh's back door was locked on a snaplatch that a playful kitten could have opened. I dug the place for a few minutes and found it clean, so I went in and took a more careful look.

The desk was not particularly interesting. Just papers and letters and unpaid bills. The dresser in the bedroom was the same, excepting for the bottom drawer. That was filled with a fine collection of needle-rays and stunguns and one big force blaster that could blow a hole in a brick wall. None of them had their serial numbers intact.

But behind a reproduction of a Gainsborough painting was a wall safe that must have been built before Rhine Institute discovered the key to man's latent abilities. Inside of this tin can was a collection of photographs that must have brought Rambaugh a nice sum in the months when the murder business went slack. I couldn't quite dig them clear because I didn't know any of the people involved, and I didn't try too hard because there were some letters and notes that might lead me into the answer to why Rambaugh was hotburning for me.

I fiddled with the dial for about fifteen minutes, watching the tumblers and the little wheels go around. Then it went click and I turned the handle and opened the door. I was standing there with both hands deep in Rambaugh's safe when I heard a noise behind me.

I whirled and slid aside all in one motion and my hand streaked for my armpit and came out with the forty five. It was a woman and she was carrying nothing more lethal than the fountain pen in her purse. She blanched when she saw my forty-five swinging towards her middle, but she took a deep breath when I halted it in midair.

"I didn't mean to startle you," she apologized.

"Startle, hell!" I blurted. "You scared me out of my shoes."

I dug her purse. Beside the usual female junk she had a wallet containing a couple of charge-account plates, a driver's license, and a hospital card, all made out to Miss Martha Franklin. Miss Franklin was about twenty-four, and
she was a strawberry blonde with the pale skin and blue eyes that goes with the hair. I gathered that she didn't belong there any more than I did.

"I don't, Mr. Hammond," she said.

So Martha Franklin was a mental sensitive.

"I am," she told me. "That's how I came to be here."

"I'm esper. You'll have to explain in words of one syllable because I can't read you."

"I was not far away when you cut loose with that field-piece of yours," she said flatly. "So I read your intention to come here. I've been following you at mental range ever since."

"Why?"

"Because there is something in that safe I want very much."

I looked at her again. She did not look the type to get into awkward situations. She colored slightly and said, "One indiscretion doesn't make a tramp, Mr. Hammond."

I nodded. "Want it intact or burned?" I asked.

"Burned, please," she said, smiling weakly at me for my intention. I smiled back.

On my way to Rambaugh's bedroom I dug the rest of the thug's safe but there wasn't anything there that would give me an inkling of why he was gunning for me. I came back with one of his needle-rays and burned the contents of the safe to a black char. I stirred up the ashes with the nose of the needler and then left it in the safe after wiping it clean on my handkerchief.

"Thank you, Mr. Hammond," she said quietly. "Maybe I can answer your question. Rambaugh was probably after you because of me."

"Huh?"

"I've been paying Rambaugh blackmail for about four years. This morning I decided to stop it, and looked your name up in the telephone book. Rambaugh must have read me do it."

"Ever think of the police?" I suggested.

"Of course. But that is just as bad as not paying off. You end up all over the front pages anyway. You know that."

"There's a lot of argument on both sides," I supposed. "But let's finish this one over a bar. We're crowding our luck here. In the eyes of the law we're just a couple of nasty break-ins."

"Yes," she said simply.

We left Rambaugh's apartment together and I handed Martha into my car and took off.

It struck me as we were driving that mental sensitivity was a good thing in spite of its limitations. A woman without mental training might have every right to object to visiting a bachelor apartment at two o'clock in the morning. But I had no firm plans for playing up to Martha Franklin; I really wanted to talk this mess out and get it squared away. This she could read, so I was saved the almost-impossible task of trying to convince an attractive woman that I really had no designs upon her beautiful white body. I was not at all cold to the idea, but Martha did not seem to be the pushover type.

"Thank you, Steve," she said.


"I like your sentiments. That's why I'm here, and maybe we can get our heads together and figure something out."

I nodded and went back to my driving, feeling pretty good now.

A man does not dig his own apartment. He expects to find it the way he left it. He digs in the mailbox on his way towards it, and he may dig in his refrigerator to see whether he should stop for beer or whatever else, because these things save steps. But nobody really expects to find trouble in his own home, especially when he is coming in at three o'clock in the morning with a good looking woman.

They were smart enough to come with nothing deadly in their hands. So I had no warning until they stepped out from either side of my front door and lifted me into my living room by the elbows. They hurled me into an easy chair with a crash. When I stopped bouncing, one of the gorillas was standing in front of me, about as tall as Washington Monument as seen from the sidewalk in front. He was looking at my forty-five with careful curiosity.

"What gives?" I demanded.

The crumb in front of me leaned down and gave me a back-and-forth that yanked my head around. I didn't say anything, but I thought how I'd like to meet the buzzard in a dark alley with my gun in my fist.

Martha said, "They're friends of Rambaugh, Steve. And they're a little afraid of that prehistoric cannon you carry."

The bird in front of Martha gave her a one-two across the face. That was enough for me. I came up out of my chair, lifting my fist from the floor and putting my back and thigh muscles behind it. It should have taken his head
off, but all he did was grunt, stagger back, dig his heels in, and then come back at me with his head down. I chopped at the bridge of his nose but missed and almost broke my hand on his hard skull. Then the other guy came charging in and I flung out a side-chop with my other hand and caught him on the wrist.

But Rhine training can't do away with the old fact that two big tough men can wipe the floor with one big tough man. I didn't even take long enough to muss up my furniture.

I had the satisfaction of mashing a nose and cracking my hand against a skull again before the lights went out. When I came back from Mars, I was sitting on a kitchen chair facing a corner. My wrists and ankles were taped to the arms and legs of the chair.

I dug around. They had Martha taped to another chair in the opposite corner, and the two gorillas were standing in the middle of the room, obviously trying to think.

So was I. There was something that smelled about this mess. Peter Rambaugh was a mental, and he should have been sensitive enough to keep his take low enough so that it wouldn't drive Martha into thinking up ways and means of getting rid of him. Even so, he shouldn't have been gunning for me, unless there was a lot more to this than I could dig.

"What gives?" I asked sourly.

There was no answer. The thug with my forty-five took out the clip and removed a couple of slugs.

He went into the kitchen and found my pliers and came back teasing one of the slugs out of its casing. The other bird lit a cigarette.

The bird with the cartridge poured the powder from the shell into the palm of my hand. I knew what was coming but I couldn't wiggle my fingers much, let alone turn my hand over to dump out the stuff. The other guy planted the end of the cigarette between my middle fingers and I had to squeeze hard to keep the hot end up. My fingers began to ache almost immediately, and I was beginning to imagine the flash of flame and the fierce wave of pain that would strike when my tired hand lost its pep and let the cigarette fall into that little mound of powder.

"Stop it," said Martha. "Stop it!"

"What do they want?" I gritted.

"They won't think it," she cried.

The bright red on the end of the cigarette grayed with ash and I began to wonder how long it would be before a fleck of hot ash would fall. How long it would take for the ash to grow long and top-heavy and then to fall into the powder. And whether or not the ash would be hot enough to touch it off. I struggled to keep my hands steady, but they were trembling. I felt the cigarette slip a bit and clamped down tight again with my aching fingers.

Martha pleaded again: "Stop it! Let us know what you want and we'll do it."

"Anything," I promised rashly.

Even if I managed to hold that deadly fuse tight, it would eventually burn down to the bitter end. Then there would be a flash, and I'd probably never hold my hand around a gun butt again. I'd have to go looking for this pair of lice with my gun in my left. If they didn't try the same trick on my other hand. I tried to shut my mind on that notion but it was no use. It slipped. But the chances were that this pair of close-mouthed hotboys had considered that idea before.

"Can you dig 'em Martha?"

"Yes, but not deep enough. They're both concentrating on that cigarette and making mental bets when it will--" Her voice trailed off. A wisp of ash had dropped and my mental howl must have been loud enough to scorch their minds. It was enough to stop Martha, at any rate. But the wisp of ash was cold and nothing happened except my spine got coldly wet and sweat ran down my face and into my mouth. The palm of my hand was sweating too, but not enough to wet the little pile of powder.

"Look," I said in a voice that sounded like a nutmeg grater, "Rambaugh was a louse and he tried to kill me first. If it's revenge you want--why not let's talk it over?"

"They don't care what you did to Rambaugh," said Martha.

"They didn't come here to practice torture," I snapped. "They want something big. And the only guy I know mixed up with Peter Rambaugh is Scarmann, himself."

"Scarmann?" blurted Martha.

Scarmann was a big shot who lived in a palace about as lush as the Taj Mahal, in the middle of a fenced-in property big enough to keep him out of the mental range of most peepers. Scarmann was about as big a louse as they came but nobody could put a finger on him because he managed to keep himself as clean as a raygunned needle. I was expecting a clip on the skull for thinking the things I was thinking about Scarmann, but it did not come. These guys were used to having people think violence at their boss. I thought a little harder. Maybe if I made 'em mad enough one of them would belt me on the noggin and put me out, and then I'd be cold when that cigarette fell into the gunpowder and ruined my hand.
I made myself a firm, solid promise that if, as, and when I got out of this fix I would find Scarmann, shove the nose of my automatic down his throat through his front teeth and empty the clip out through the top of his head.

Then the hotboy behind me lifted the cigarette from my fingers very gently and squibbed it out in the ashtray, and I got the pitch.

This is the way it is done in these enlightened days. Rhine Institute and the special talents that Rhine developed should and could have made the world a better, brighter place to live in. But I've heard it said and had it proved that the minute someone comes up with something good, there are a lot of buzzards who turn it bad and make it a foul, rotten medium for their lousy way of life.

No, in these days of mental telepathy and extra sensory perception, crumbs do not erase other crumbs. They just grab some citizen and put him in a box until he is ready to do their dirty work for them.

Guilt? That would be mine. A crime is a crime and the guy who does it is a criminal, no matter how he justifies his act of violence.

The truth? Any court mentalist who waded through that pair of unwashed minds would find no evidence of any open deal with Steve Hammond. Sure, he would find violence there, but the Court is more than well aware of the fact that thinking of an act of violence is not illegal. This Rhine training has been too recent to get the human race trained into the niceties of polite mental behavior. Sure, they'd get a few months or maybe a few years for breaking and entering as well as assault, but after all, they were friends of Rambaugh and this might well be a matter of retaliation, even though they thought Rambaugh was an incompetent bungler.

So if Steve Hammond believed that he could go free with a whole hand by planning to rub out a man named Scarmann, that would be Steve Hammond's crime, not theirs.

They didn't take any chances, even though I knew that they could read my mind well enough to know that I would go through with their nasty little scheme. They hustled Martha into the kitchen, chair and all, and one of them stood there with my paring knife touching her soft throat enough to indent the skin but not enough to draw blood. The other rat untaped me and stood me on my feet.

I hurt all over from the pasting I'd taken, so I took a boiling shower and dressed leisurely. The guy handed me my forty-five, all loaded, as I came out of the bathroom. The other bird hadn't moved a muscle out in the kitchen. His knife was still pressing against Martha's throat. He was still standing pat when I passed out of esper range on the street below.

In pre-Rhine days, a citizen in my pinch would holler for the cops because he couldn't be sure that the crooks would keep their end of the bargain. But Rhine training has produced a real "Honor Among Thieves" so that organized crime can run as fast as organized justice. If I kept my end and they didn't keep theirs, the word would get around from their own dirty minds that they couldn't keep a bargain. Well, I was going to keep mine for the same reason, even though I am not a thief.

That's the way it's done these days. You get a good esper like me to knock off a sharp mental operator like Scarmann.

The trouble was that I didn't really want Scarmann, I wanted that pair of mental sadists up in my apartment who were holding a knife against Martha's throat. I wanted them, and I wanted Martha Franklin's skin to be happily whole. And if I crossed them now, the only guys that wouldn't play ball with me in the future would be the crooks. Them I could do without.

So if they figured that an esper could take a mental like Scarmann, why couldn't an esper take the pair of them?

All I had to do was to think of something else until I could get my hands on their throats. Sure, they'd follow my mind as soon as they felt my mental waves within range, but if I could really find something interesting enough to occupy my attention--and maybe theirs as well--they could not identify me.

So I went back into the lobby of my apartment and dug into the mailbox of another party, thus identifying myself as the man in three eight four. Then I punched the elevator button for the Fourth and leaned back against the elevator and let my mind wander up through the apartments above.

I violated all the laws against Esping Toms as the elevator oozed upwards. Eventually my sense of perception wandered through my own apartment and I located her lying on the bed, fully dressed. She'd probably been freed lest some esper cop get to wondering why there was a woman taped to a chair in a bachelor's kitchen. I shut my mind like a clam, but I couldn't withdraw my perception too fast. I let it ooze back there like the eyes of a lecherous old man at a burlecue.

I left the elevator at the Fourth and walked up the stairs by reflex, while my mind was positively radiating waves of vulgarity.

My mind managed to identify her as "The girl on the bed" without thinking any name. She was a good looking strawberry blonde with a slender waist and a high bosom and long, slender legs. She was wearing a pair of Dornier shoes with three inch heels that did things to her ankles. Her nylons were size eight and one half, medium length, in
that dark shade that always gives me ideas. Her dress was a simple thing that did not have a store label on it, and so I
dug the stitches for a bit and decided that it had been hand made. Someone was a fine dress-maker because it fitted
her slender body perfectly. Her petticoat was store type. It was simple and fitted, too, but it had a label from
Forresters in the hem. Her bra was a Graceform, size thirty two, medium cup, but the girl on the bed did not have
much need for molding, shaping, uplifting, padding or pretense. She was all her and she filled it right to the brim. I
let my perception dawdle on the slender ankles, the lissome waist, and the rounded hips.

My door key came out by habit-reflex and entered the keyhole while my sense of perception let them have one
last vicarious thrill. The girl on the bed was an honest allover strawberry blonde. She....

Then the door swung open and hell went out for breakfast.

My forty-five bellowed at the light as I slid in and sloped to one side. The room went dark as I dropped to the
floor in front of my bookcase. From across the room a hitburner seared the door and slashed sidewise, cutting a
smoking swathe across my encyclopedia from A-AUD to CAN-DAN and then came down as I squirmed aside. It
took King Lear right out of Shakespeare before the beam winked out. It went off just in time to keep me from
sporting a cooked stripe down my face.

I triggered the automatic again to make a flash in their faces while I dug the room to locate them in the dark.
The needle beam flared out again and drilled a hole in the bookcase behind me. The other guy made a slashing
motion with his beam to pin me down, but he made a mistake by standing up to do it.

I put a slug in his middle that slammed him back against the wall. He hung there for a moment before he fell to
the floor with a dull, limp sound. His needle beam slashed upward and burned the ceiling before his hand went limp
and let the weapon drop.

I whirled to dig the other guy in the room just as the throb of a stun-gun beam moaned over my head. I
wondered where they'd got the arsenal, dug the serial number, and realized that it was mine. It gave me a chuckle.
I'm a pistol man, so the stun-gun that old gorilla-man was toting couldn't have had more than one more charge. I
tried to dig it but couldn't. Even a Doctor Of Perception can't really dig the number of kilo-watt-seconds in a meson
chamber.

My accurate esping must have made the other guy desperate, because he made a dive and let his needle ray
burn out a slashing beam that zipped across over my head. My forty-five blazed twice. He missed but I didn't, just as
the throb of the stun-gun rang the air again. I whirled to face my stun-gun coming out of the bedroom door in front
of Martha Franklin.

The slug intended for Martha's body never came out of my gun because her stun-gun got to me first. It froze me
like a hunk of Greek statuary and I went forward and toppled over until I came on a three-point landing of elbow,
the opposite knee, and the side of my face.

I was as good as dead.

My brain was still functioning but nothing else was. I was completely paralyzed. My heart had stopped
breathing and my lungs had stopped breathing, and I've been told that a healthy man can retain consciousness for
maybe a minute or so without a fresh supply of blood to the brain. Then things get muddy black and you've had it
for good. My esp was still functioning, but that would black out with the rest of Steve Hammond.

There was no physical pain. They could have drilled me with a blunt two-by-four and I'd not have felt it.

Then because I couldn't stare Death in the face, I shut my mind on the fact and esped my late girl friend. She
was standing there with my stun-gun in her hand with a smile on her beautiful puss and that vibrant body swaying
gently. I wanted to vomit and I would have if I'd not been frozen solid. That beautiful body presided over by that
vicious brain made me sick.

Her smile faded as I began to realize the truth. Her story was thin. Rambaugh, a mental, would have been able
to play his blackmail game to the fine degree; he would have known when Martha's patience was about to grow
short--if Martha's story were true. No blackmailer pushed his victim to the breaking point. And Rambaugh wouldn't
have gone for me if this had just been a plain case of blackmail.

No, by thinking deeply, Martha Franklin had engineered the death of Rambaugh and she'd almost engineered
the rubbing-out of Scarmann. A mental, Martha Franklin. A high-grade mental, capable of controlling her thoughts
so that her cohorts could be led by the mind into doing her dirty work.

Her mind chucked. I'd be gone before they caught up with Martha, but they'd catch up all right. She'd leave the
apartment positively radiating her act of violence and then the cops would have a catch. And you should see how a
set of Court Mentalists go to work on a guilty party these days. Once they get the guy that pulled the trigger on the
witness stand, in front of a jury consisting of mixed mentals and espers, with no holds barred, the court record gets a
full load of the killer's life, adventures, habits, and attitude; just before the guilty party heads for the readjustment
chamber.

Things were growing blacker. Waves of darkness clouded my mind and I found it hard to think straight. My
esper sense faded first and as it faded I let it run once more over Martha's attractiveness and found my darkening mind wishing that she were the girl I'd believed her to be instead of the female louse she was. It could have been fun.

But now I was about to black out from stun-gun paralysis, and Martha was headed for the readjustment chamber where they'd reduce her mental activity to the level of a menial, sterilize her, and put her to work in an occupation that no man or woman with a spark of intelligence, ambition, or good sense would take.

She would live and die a half-robot, alone and ignored, her attractiveness lost because of her own lack-luster mind.

And I'd been willing to go out and plug Scarmann for her.

Hah!

And then she was at my side. I perceived her dimly, inconstantly, through the waves of blackness and unreality that were like the half-dreams that we have when lying a-doze. She levered my frozen body over on its hard back and went to work on my chest. Her arms went around me and she squeezed. Air whooshed into my dead lungs, and then she was beating my breastbone black and blue with her small fists. Beat. Beat-beat. Beat. I couldn't feel a thing but I could dig the fact that she was hurting her hands as she beat on my chest in a rhythm that matched the beat of her own heart.

I dug her own heartbeat for her, and she read my mind and matched the beat perfectly.

Then I felt a thump inside of me and dug my own heart. It throbbed once, sluggishly. It struggled, slowly. Then it throbbed to the beat of her hands and the blackening waves went away. My frozen body relaxed and I came down to rest on the floor like a melting lump of sugar.

Martha dropped on top of my body and pressed me down. Her arms were around my chest as she forced air into my lungs. She beat my ribs sore when my heart faltered, and squeezed me when my breathing slowed. I felt the life coming back into me; it came in like the tide, with a fringe of needles-and-pins that flowed inward from fingers and toes and scalp.

Martha pressed me down on the carpet and kissed me, full, open mouthed, passionate. It stirred my blood and my mind and I took a deep, shuddering breath.

I looked up into her soft blue eyes and said, "Thanks--slut!"

She kissed me again, pressing me down and writhing against me and obviously getting a kick out of my reaction.

Then I came alive and threw her off with no warning. I sat up, and swung a roundhouse right that clipped her on the jaw and sent her rolling over and over. Her eyes glazed for a moment but she came out of it and looked pained and miserable.

"You promised," she said huskily.

"Promised?"

"To kill Scarmann."

"Yeah?"

"You thought how you'd kill Scarmann for me, Steve."

"Someday," I said flatly, "I may kill Scarmann, but it won't be for you!"

She tried to claw me but I clipped her again and this time I made it stick. She went out cold and she was still out like a frozen herring by the time Lieutenant Williamson arrived with his jetcopter squad to take her away.

The last time I saw Martha Franklin, she was still trying to convince twelve Rhine Scholars and True that any woman with a body as beautiful as hers couldn't possibly have committed any crime. She was good at it, but not that good.

Funny. Mental sensitives always think they're so damn superior to anyone else.

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**Contents**

**THE VENUS TRAP**

By Evelyn E. Smith

One thing Man never counted on to take along into space with him was the Eternal Triangle--especially a true-blue triangle like this!

"What's the matter, darling?" James asked anxiously. "Don't you like the planet?"

"Oh, I love the planet," Phyllis said. "It's beautiful."

It was. The blue--really blue--grass, blue-violet shrubbery and, loveliest of all, the great golden tree with
sapphire leaves and pale pink blossoms, instead of looking alien, resembled nothing so much as a fairy-tale version of Earth.

Even the fragrance that filled the atmosphere was completely delightful to Terrestrial nostrils—which was unusual, for most other planets, no matter how well adapted for colonization otherwise, tended, from the human viewpoint, anyway, to stink. Not that they were not colonized nevertheless, for the population of Earth was expanding at too great a rate to permit merely olfactory considerations to rule out an otherwise suitable planet. This particular group of settlers had been lucky, indeed, to have drawn a planet as pleasing to the nose as to the eye--and, moreover, free from hostile aborigines.

As a matter of fact, the only apparent evidence of animate life were the small, bright-hued creatures winging back and forth through the clear air, and which resembled Terrestrial birds so closely that there had seemed no point to giving them any other name. There were insects, too, although not immediately perceptible—but the ones like bees were devoid of stings and the butterflies never had to pass through the grub stage but were born in the fullness of their beauty.

However, fairest of all the creatures on the planet to James Haut—just then, anyhow—was his wife, and the expression on her face was not a lovely one.

"You do feel all right, don't you?" he asked. "The light gravity gets some people at first."
"Yes, I guess I'm all right. I'm still a little shaken, though, and you know it's not the gravity."

He would have liked to take her in his arms and say something comforting, reassuring, but the constraint between them had not yet been worn off. Although he had sent her an ethergram nearly every day of the voyage, the necessarily public nature of the messages had kept them from achieving communication in the deeper sense of the word.

"Well, I suppose you did have a bit of a shock," he said lamely. "Somehow, I thought I had told you in my 'grams."
"You told me plenty in the 'grams, but not quite enough, it seems."
Her words didn't seem to make sense; the strain had evidently been a little too much. "Maybe you ought to go inside and lie down for a while."
"I will, just as soon as I feel less wobbly." She brushed back the long, light brown hair which had got tumbled when she fainted. He remembered a golden rather than a reddish tinge in it, but that had been under the yellow sun of Earth; under the scarlet sun of this planet, it took on a different beauty.

"How come the preliminary team didn't include—it in their report?" she asked, avoiding his appreciative eye.
"They didn't know. We didn't find out ourselves until we'd sent that first message to Earth. I suppose by the time we did relay the news, you were on your way."
"Yes, that must have been it."

The preliminary exploration team had established the fact that the planet was more or less Earth-type, that its air was breathable, its temperature agreeably springlike, its mineral composition very similar to Earth's, with only slight traces of unknown elements, that there was plenty of drinkable water and no threatening life-forms. Human beings could, therefore, live on it.

It remained for the scout team to determine whether human beings would want to live on it—whether, in fact, they themselves would want to, because, if so, they had the option of becoming the first settlers. That was the way the system worked and, in the main, it worked well enough.

After less than two weeks, this scout team had beamed back to Earth the message that the planet was suitable for colonization, so suitable that they would like to give it the name of Elysium, if there was no objection.

There would be none, Earth had replied, so long as the pioneers bore in mind the fact that six other planets had previously been given that name, and a human colony currently existed on only one of those. No need to worry about a conflict of nomenclature, however, because the name of that other planet Elysium had subsequently been changed by unanimous vote of settlers to Hades.

After this somewhat sinister piece of information, Earth had added the more cheerful news that the wives and families of the scouts would soon be on their way, bringing with them the tools and implements necessary to transform the wilderness of the frontier into another Earth. In the meantime, the men were to set up the packaged buildings with which all scout ships were equipped, so that when the women came, homes would be ready for them.

The men set to work and, before the month was out, they discovered that Elysium was neither a wilderness nor a frontier. It was populated by an intelligent race which had developed its culture to the limit of its physical abilities—actually well beyond the limit of what the astounded Terrestrials could have conceived its physical abilities to be—
then, owing to unavoidable disaster, had started to die out.

The remaining natives were perspicacious enough to see in the Terrestrials' coming not a threat but a last hope of revivifying their own moribund species. Accordingly, the Earthmen were encouraged to go ahead building on the sites originally selected, the only ban being on the type of construction materials used—and a perfectly reasonable one under the circumstances.

James had built his cottage near the largest, handsomest tree in the area allotted to him; since there were no hostile life-forms, there was no need for a closely knit community. Everyone who had seen it agreed that his house was the most attractive one of all, for, although it was only a standard prefab, he had used taste and ingenuity to make it a little different from the other unimaginative homes.

And now Phyllis, for whom he had performed all this labor of love, for whom he had waited five long months—the tedium of which had been broken only by the intellectual pleasure of teaching English to a sympathetic native neighbor—Phyllis seemed unappreciative. She had hardly looked at the inside of the cottage, when he had shown her through, and now was staring at the outside in a blank sort of way.

The indoctrination courses had not, he reflected, reconciled her to the frontiersman's necessarily simple mode of living—which was ironic, considering that one of her original attractions for him had been her apparent suitability for the pioneer life. She was a big girl, radiantly healthy, even though a little green at the moment.

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He just managed to keep his voice steady. "You don't like the house—is that it?"
"But I do like it. Honestly I do." She touched his arm diffidently. "Everything would be perfect if only—"
"If only what? Is it the curtains? I'm sorry if you don't like them. I brought them all the way from Earth in case the planet turned out to be habitable. I thought blue was your favorite color."
"Oh, it is, it is! I'm mad about the curtains."

Perhaps it wasn't the house that disappointed her; perhaps it was he himself who hadn't lived up to dim memory and ardent expectation.

"If you want to know what is bothering me—" she glanced up apprehensively, lowering her voice as she did—"it's that tree. It's stuck on you; I just know it is."

He laughed. "Now where did you get a preposterous idea like that, Phyl? You've been on the planet exactly twenty-four hours and—"

"--and I have, in my luggage, one hundred and thirty-two ethergrams talking about practically nothing but Magnolia this, Magnolia that. Oh, I had my suspicions even before I landed, James. The only thing I didn't suspect was that she was a tree!"

"What are you talking about, honey? Magnolia and I—we're just friends."

"Purely a platonic relationship, I assure you," the tree herself agreed. It would have been silly for her to pretend not to have overheard, since the two were still standing almost directly underneath her. "Purely platonic."

"She's more like a sister to me," James tried to explain.

* * * * *

Phyllis stiffened. "Frankly, if I had imagined I was going to have a tree for a sister-in-law, I would have thought before I married you, James." Bursting into tears, she ran inside the cottage.

"Sorry," he said miserably to Magnolia. "It's a long trip out from Earth and an uncomfortable one. I don't suppose the other women were especially nice to her, either. Faculty wives mostly and you know how they are.... No, I don't suppose you would. But she shouldn't have acted that way toward you."

"Not your fault," Magnolia told him, sighing with such intensity that he could feel the humidity rise. "I know how you've been looking forward to her arrival. Rather a letdown, isn't it?"

"Oh, I'm sure it'll be all right." He tried to sound confident. "And I know you'll like Phyllis when you get to know her."

"Possibly, but so far I'm afraid I must admit—since there never has been any pretense between us—that she is a bit of a disappointment. I—and my sisters also—had expected your females, when they came, to be as upright and true blue as you. Instead, what are they? Shrubs."

The door to the cottage flew open. "A shrub, am I!" Phyllis brandished an axe which, James winced to recall, was an item of the equipment he had ordered from Earth before the scout team had learned that the trees were intelligent. "I'll shrub you!"

"Phyllis!" He wrested the axe from her grip. "That would be murder!"

"Woodman," as the Terrestrial poem goes," the tree remarked, "spare that tree! Touch not a single bough! In youth it sheltered me and I'll protect it now!"

Good of her to take the whole thing so calmly—rather, to pretend to take it so calmly, for he knew how sensitive Magnolia really was—but he was afraid this show of moral courage would not diminish Phyllis's dislike for her;
those without self-control seldom appreciate those who have it.

"If you'll excuse us," he said, putting his arm around his wife's heaving shoulders, "I'd better see to Phyllis; she's a little upset. Holdover from spacesickness, I expect. Poor girl, she's a long way from home and frightened."

"I understand, Jim," Magnolia told him, "and, remember, whatever happens, you can always count on me."

"I must say you're not a very admirable representative of Terrestrial womanhood!" James snapped, as soon as the door had slammed behind him and his wife, leaving them alone together in the principal room of the cottage. "Insulting the very first native you meet!"

"I did not either insult her. All I said was, 'What beautiful flowers--do you suppose the fruit is edible?' How was I to know it--she could understand? Naturally I wouldn't dream of eating her fruit now. It would probably taste nasty anyway. And how do you think I felt when a tree answered me back? You don't care that I fainted dead away, and I've never fainted before in my life. All you care about is that old vegetable's feelings! It was bad enough, feeling for five months that someone had come between us, but to find out it wasn't someone but something--!"

"Phyllis," he said coldly, "I'll thank you to keep a civil tongue in your head."

Dropping into the overstuffed chair, his wife dabbed at her eyes with a handkerchief. "She wasn't so very polite to me!"

"Look, Phyllis--" he strove to make his voice calm, adult, reasonable--"you happened to have hit on rather a touchy point with her. Those trees are dioecious, you know, like us, and she isn't mated. And, well, she has rather a lot of xylem zones--rings, you know."

"Are you trying to tell me she's old?"

"Well, she's no sapling any more. And, consideration aside, you know it's government's policy for us to establish good relations with any intelligent life-form we have to share a planet with. You weren't in there trying."

Phyllis put away her handkerchief with what he hoped would be a final sniff. "I suppose I shouldn't have acted that way," she conceded.

"Now you're talking like my own dear Phyllis," James said tenderly, though, as a matter of fact, he had a very remote idea of what his own dear Phyllis was like. He had met her only a couple of months before the scout mission was scheduled, and so their courtship had been brief, and the actual weeks of marriage even briefer. He had remembered Phyllis as beautiful--and she was beautiful. He had not, however, remembered her as pig-headed--and pig-headed she was, too.

"How come she hasn't a mate? I didn't think trees were choosy."

He wouldn't take exception to that statement, uncharitable though it was; after all, someone whose only acquaintance with trees had been with the Terrestrial variety would naturally be incapable of appreciating the total tree at its highest development.

"It's a great tragedy," he told her in a hushed tone. "There was a blight some years back and most of the male trees died off, except for a few on the other side of the planet--well out of bee-shot, even if the females there would let the females here have any pollen, which they absolutely won't."

"I don't blame them," Phyllis said coldly. Of course she would identify at once with the trees whose domestic lives seemed to be threatened.

"It's not that so much. It's that the male trees produce so little pollen."

"This would be a good place for people with hay fever then, wouldn't it?"

"And even when there is fruit, so much of it tends to be parthenocarpous--no seeds." He sighed. "The entire race is dying out."

"How is it you know so much about botany?" she asked suspiciously. "It's not your field."

"I don't know so very much, really," he smiled. "I had to learn a little, if I wanted to work the land, so I borrowed an elementary text from Cutler." Had he been a trifle idealistic in quitting his snug, if uninspiring, job on the faculty to join in this Utopian venture? So many of the other men at the university had enrolled, it had seemed a splendid idea until Phyllis's arrival.

"Daddy never had any trouble working his land and he doesn't know a thing about botany. You've been boning up on it just to please her!"

"Phyllis! How can you jump to conclusions without a shred of evidence?" Not that she wouldn't be able to collect such evidence later, because the allegation happened to be correct. If, instead of coming to Elysium, I had merely gone to China, would she have thought it so odd that I studied Chinese? Then why, where the natives are trees, shouldn't I study botany? The woman is unreasonable.

"And will her--people let you farm?"
Now he could show her how cogently and comprehensively he could answer a logical question. "That aspect of
the situation will be all right, dear, because only the trees are an intelligent species and, even of them, some aren't so
bright. They won't have any more objection to our eating the other fruit and vegetables than we would have to an
extraterrestrial's eating our eggs and chickens, for example. We're going to try to introduce some Earth plants here,
though, as the higher forms of vegetation are dying out and we're afraid the lower might follow. Pity it's too late for
a sound conservation program."

Phyllis said grimly, "She doesn't think it's too late for a sound conservation program. She still has hopes--far-
fetching, maybe, and I'm not so sure they are. Mark my words, James, she's got designs on you."
"Don't be idiotic," he protested. "That would be--" he attempted to introduce a light note--"it would be
miscegenation."
"These foreigners can't be expected to have our standards." And she burst into tears again. "A fine thing to go
through that miserable five-month trip only to find out a tree has alienated my husband's affections."
"Oh, come on, Phyl!" He still was trying for a smile. "What would a tree see in me?"
"I'm beginning to wonder what I saw in you. You never loved me; you just wanted a wife to come out and
colonize with you and b-b-breed."

What could he say? It was almost true. Phyllis was a beautiful girl and he loved her, but, if he had planned to
remain as an instructor with the Romance Languages Department instead of joining the scout mission, he knew he
would never have asked her to be his wife ... for her sake, of course, as well as his own. He should say something to
reassure her, but the words wouldn't come.

"I don't like it here," Phyllis sobbed. "I don't like blue leaves. I don't like blue grass. I like them green, the way
they're supposed to be. I hate this nasty planet. It's all wrong. I want to go home."

She was very young--less than eight years younger than he, true, but he was mature for his age. They didn't
know each other very well. And, finally, there were more men than women on the planet and he had noticed that the
bachelors had seemed readily disposed, upon her arrival the day before, to overlook the fact that she had no college
degree. So he must be patient with her.

"There's nothing wrong about it, dear. The plants here synthesize cyanophyll instead of chlorophyll; that's why
the leaves are blue instead of green. And, of course, there are different mineral constituents of the soil--more
aluminum and copper, for instance, than on Earth, and some elements we haven't quite isolated yet. So, you see,
they're bound to be a little different from Terrestrial trees."
"A little different I wouldn't mind," she said sulkily, "but they're a lot different without being nearly alien
enough."

"Look, Phyllis--dear--those trees have been very hospitable, very kind. We owe them a lot. They themselves
suggested that we come here and live with them in, so to speak, symbiosis."
"That's a fine idea!"

He beamed. "I knew you'd understand after I had explained it to you."
"We provide the brains and they provide the furniture."
"Phyllis! What a thing to say!"
"I've heard of man-eating trees before. I suppose there could be man-loving ones, too."
"Phyllis, these trees are as gentle and sweet as--as--" He didn't know how he could explain it to her. No one
who had never been friends with a tree could appreciate the true beauty of the xylemic character. "Why, we even
offered to go over to the other side of the planet and fetch some pollen for them, but they wouldn't hear of it.
Unfortunately, they'd rather die than be mated to anyone they had never met."
"What a perfectly disgusting idea!"
"I don't think so. Trees can be idealistic--"
"You fetching pollen for her, I mean. Naturally she wouldn't want pollen from a tree on the other side of the
planet. She wants you!"

"Don't be silly. Incompatibility usually exists between the pollen of one species and the stigmata of another.
Besides," he added patiently, "I haven't got pollen."
"You'd better not, or it won't be her who'll have the stigmata."
"Phyllis--" he sat down on the arm of her chair and tried to embrace her--"you know that you're the only life-
form I love."
"Please, James." She pushed him away. "I guess I love you, too, in spite of everything ... but I don't want to
make a public spectacle of myself."
"What do you mean now?"
"That tree would know everything that goes on. She's telepathic."
"Where did you get a ridiculous idea like that? What kind of rubbish have you been reading?"
"All right, tell me: how else did she learn to speak such good English?"
"It's because she's of a very high order of intelligence. And I suppose--" he laughed modestly--"because I'm such a good teacher."
"I don't care how good a teacher you are--a tree couldn't learn to speak a language so well in five months. She must be telepathic. It's the only explanation."
* * * * *
"Give her time," the tree advised later, as James came out on the lawn to talk to his only friend on the planet.
He hadn't seen much of the other scouts since the house-building frenzy had started, and visits among the men had decreased. The base camp, where the bachelors and the older married couples lived, was located a good distance away from his land, for he had raised his honeymoon cottage far from the rest; he had wanted to have his Phyllis all to himself. In the idyll he had visualized for the two of them, she would need no company but his. Little had he imagined that, within twenty-four hours of her arrival, he would be looking for company himself.
"I suppose so," he said, kicking at a root. "Oh, I'm sorry, Maggie; I didn't think."
"That's all right," Magnolia said bravely. "It didn't really hurt. That female has got you all upset, you poor boy."
James muttered a feeble defense of his wife.
"Jim, forgive me if I speak frankly," the tree went on in a low rustle, "but do you think she's really worthy of you?"
"Of course she is!"
"Surely on your planet you could have found a mate more admirable, high-minded, exemplary--more, in short, like yourself. Or are all the human females inferior specimens like Phyllis?"
"They're--she suits me," James said doggedly.
"Of course, of course. It's very noble of you to defend her; you would have disappointed me if you had said anything else, and I honor you for it, James."
He kicked at one of the pebbles. The tree meant well, he knew, yet, like so many well-meaning friends, she succeeded only in dispiriting him. It was almost like being back at the faculty club.
"I don't suppose a clod like her would have brought any more books along," the tree changed the subject. James's own library had been insufficient to slake the tree's intellectual thirst, so he had gone all over the planet to borrow books for Magnolia. Dr. Lakin, at Base, who had formerly taught English literature, possessed a fine collection which he had been reluctant to lend until he had learned that they were not for James but for a tree. At that, he had fetched the books himself, since he was anxious to meet her.
"A lot of the trees here have learned the English language," he had told James, "but none seems to have developed a taste for its literature. Your Magnolia is undoubtedly a superior specimen. Excellent natural taste, too--perhaps a little unformed when it comes to poetry and the more sophisticated aspects of life, but she'll learn, she'll learn."
* * * * *
Unfortunately, the same, James knew, could hardly be said of his wife. "Phyllis did bring some books," he told Magnolia.
"For you, no doubt. That was kind of her. I'm sure she has many good qualities which will unfold one by one, as her meristems start differentiating. I hope you don't feel I've been too--well, personal, Jim. I was only trying to help. If I've gone too far...."
"Of course not, Maggie. After all--" he laughed bitterly--"I do know you better than I know her."
"We have been good friends, haven't we, Jim? It was rather nice--these five months we spent alone together. For the first time in my life, I have never regretted being so far from my sisters. 'And this our life, exempt from public haunt, finds tongues in trees, books in the running Brooks, sermons in stones, and good in everything.'"
Her blue leaves shone violet in the scarlet rays of the setting sun; the gold of her trunk was lit with red radiance. She was the most beautiful creature he had ever seen ... but she was a tree, not a woman.
"I'm sure she'll fit in after a while," Magnolia continued. "Perhaps she isn't well. She seems to guttate an awful lot. Do you suppose she's been overwatered?"
"That wasn't guttation," James said heavily. "It was tears. It means she's unhappy."
"Unhappy? Perhaps she won't fit in on this planet, in which case she should by all means go back to Earth. It's cruel and unfair to keep an intelligent--loosely speaking--life-form anywhere against her will, don't you think?"
"She'll be happy here," James vowed. "I'll make her happy."
"Well, I certainly hope you can manage it! By the way, do you suppose you'll have a chance to read me the books she brought, or will she be keeping you too busy?"
"I'll never be too busy to read to you, Magnolia."
"That's very nitrogenous of you, Jim. Our--intellectual communions have meant a lot to me. I'd hate to have to give them up."
"So would I," he said. "But there won't be any need to. Phyllis will understand."
"I certainly hope so. I so admire your English literature. It's so deeply cognizant of the really meaningful things in life. And if your coming to this planet has served only to add poetry to our cultural heritage, it would be reason enough to welcome you with open limbs. For it was a truly perceptive versifier who wrote the immortally simple lines: 'Poems are made by fools like me, but only God can make a tree.'"
"And such a charming tune to go with it, too," Magnolia went on. "We have always sung the music that the wind and the rain have taught us, but, until you came, we never thought of putting words and melody together to form one glorious whole. 'A tree that may in summer wear,'” she caroled in a pleasing contralto, "'a nest of robins in her hair.' By the way, Jim, ever since reading that poem, I've been meaning to ask you precisely what are robins and do you think they'd look well in my hair, by which, I suppose the bard refers, in a somewhat pedestrian flight of fancy, to leaves?"
"They're a kind of bird," he said drearily.
"Birds--nesting in my hair! I wouldn't think of allowing it. But then I suppose Terrestrial birds are quite different from ours? More housebroken, shall we say?"
"Everything's different," James said and, for an irrational moment, he hated everything that was blue that should have been green, everything sweet that should have been vicious, everything intelligent that should have been mindless.
* * * * *
Since matters could not grow much worse, they improved to a degree. After a day or two had passed, Phyllis, being a conscientious girl, came to realize how wrong it had been for her as a Terrestrial immigrant to show overt hostility toward a native of the planet that had welcomed her.
"But how can she be a--a person?" Phyllis wanted to know, when they were inside the cottage, for she had learned to hold her tongue when they were near Magnolia or any of her sisters, who, though they could not speak the language as fluently as she, understood it very well and eavesdropped at every possible opportunity in order, they said, to improve their accents. "She's a tree. A plant. And plants are just vegetables." She stabbed her needle energetically through the tablecloth she was embroidering.
"You mustn't project Terrestrial attitudes upon Elysian ones," James said, patiently looking up from his book. "And don't underestimate Magnolia's capabilities. She has sense organs, and motor organs, too. She can't move from where she is, because she's rooted to the ground, but she's capable of turgor movements, like certain Terrestrial forms of vegetation--for example, the sensitive plant or blue grass."
"Blue grass," Phyllis exclaimed. "I'm sick of blue grass. I want green grass."
"However, these trees have conscious control of their pulvini, whereas the Earth's plants don't, and so they can do a lot of things that Earth plants can't."
"It sounds like a dirty word to me."
"Pulvini merely means motor organs."
"Oh."
* * * * *
He closed his book, which was a more advanced botany text, covered with the jacket of a French novel in order to spare Phyllis's feelings. "Darling, can't you get it through your pretty head that they're intelligent life-forms? If it'll make it easier for you to think of them as human beings who happen to look like trees, then do that."
"That's exactly what I am doing. And I'm quite sure she thinks of you as a tree who happens to look like a human being."
"Phyllis, sometimes I think you're being deliberately difficult. Do you know one of the reasons why I took such pains to teach Magnolia English? It was that I hoped she would be a companion for you, that you could talk to each other when I had to be away from home."
"Why do you call her Magnolia? She isn't a lot like one."
"Isn't she? I thought she was. You see, I don't know so much botany, after all." Actually, he had picked that name for the tree because it expressed both the arboreal and the feminine at the same time--and also because it was one of the loveliest names he knew. But he couldn't tell Phyllis that; there would be further misunderstanding. "Of course she has a name in her own language, but I can't pronounce it."
"They do have a language of their own then?"
"Naturally, though they don't get much chance to speak it, since they've grown so few and far apart that verbal communication has become difficult. They communicate by a network of roots that they've developed."
"I don't think that's so clever."
"I merely said ... oh, what's the use of trying to explain everything to you? You just don't want to understand."

Phyllis put down her needlework and closed her eyes. "James," she said, opening them again, "it's no use pretending. I've been trying to be sympathetic and understanding, but I can't do it. That tree--I've forced myself to be nice to her, but the more I see of her, the more convinced I am that she's trying to steal you from me."

Phyllis was beginning to poison his mind, he thought, because it had seemed to him also, in his last conversation with Magnolia, that he had discerned more than ordinary warmth in her attitude toward him ... and perhaps a trace of spite toward his wife?

Preposterous! The tree had only been trying to cheer him up as any friend might reasonably do. After all, a tree and a man.... Nonsense! One had an anabolic metabolism, one a catabolic.

But this was a different kind of tree. She spoke, she read, she was capable of conscious turgor movements. And he, he had often thought secretly, was a different kind of man. Whereas Phyllis....

But that was disloyalty--to the type as well as the individual. The tree could be a companion to him, but she could not give him sons to work his land; she could not give him daughters to populate his planet; moreover, she did not, could not possibly know what human love meant, while Phyllis could at least learn.

"Look, dear," he said, sitting down beside his wife on the couch and taking her hand in his. She didn't draw away this time. "Suppose that what you say is true--not that it is, of course. Just because the tree has a crush on me doesn't mean I necessarily have a crush on her, does it?"

His wife looked up at him, her rose-red lips parted, her moss-gray eyes shining. "Oh, if only I could believe that, James!"

"Anyhow, she doesn't know what the whole thing's about, poor kid!"

"Poor kid!"

"Phyllis, you know you're prettier than any tree." That was not literally true, but reason was useless; he had to make his point in terms she could understand. "And, remember, she's got a lot of rings--she must be centuries old--while you are only nineteen."

"Twenty," Phyllis corrected. "I had a birthday on the ship."
"Well, you certainly must allow me to wish you a happy birthday, darling."

She was in his arms at last; he was about to kiss her, and the tree seemed very remote, when she drew back.

"But are you sure she doesn't--she isn't--she can't be watching us?"

"Darling, I swear it!" "Lady, by yonder blessed moon I swear, that tips with silver all these fruit-tree tops"....

But he had sense enough not to say it, and Elysium had not one blessed moon, but three, and everything was all right.

For a while anyway.

"I see your wife is developing a corm," the tree remarked, as James paused for a chat. He hadn't much time to be sociable those days, for there was such a lot of work to be done, so many preparations to be made, so many things to be requisitioned from Earth. The supply ships were beginning to come now, bringing necessities and an occasional luxury for those who could afford it.

"She's pregnant," James explained. "Happened before I left Earth."

"How do you mean?"

"She's about to fruit. Didn't I read that zoology book to you?"

"Yes, but--oh, James, it all seems so vulgar! To fruit without ever having bloomed--how squalid!"

"It all depends on how you look at it," he said. "I--that is, we had hoped that when the baby came, you would be godmother to it. You know what that is, don't you?"

"Of course I do. You read Cinderella to me. I know it's a great honor. But I'm afraid I must decline."

"Why? I thought you were my--our friend."

"Jim, there is something I must confess: my feelings toward you are not merely those of a friend. Although Phyllis doesn't have too many rings of intellect, she is a female, so she knew all along," Magnolia's leaves rustled diffidently. "I feel toward you the way I never felt toward any intelligent life-form, but only toward the sun, the soil, the rain. I sense a tropism that seems to incline me toward you. In fact, I'm afraid, Jim, in your own terms, I love you."

"But you're a tree! You can't love me in my own terms, because trees can't love in the way people can, and, of course, people can't love like trees. We belong to two entirely different species, Maggie. You can't have listened to that zoology book very attentively."

"Our race is a singularly adaptable one or we wouldn't have survived so long, Jim, or gone so far in our
particular direction. It's lack of fertility, not lack of enterprise, that's responsible for our decline. And I think your species must be an adaptable one, too; you just haven't really tried. Oh, James, let us reverse the classical roles—let me be the Apollo to your Daphne! Don't let Phyllis stand in our way. The Greek gods never let a little thing like marriage interfere with their plans."

* * * * *

"But I love Phyllis," he said in confusion. "I love you, too," he added, "but in a different way."

"Yes, I know. More like a sister. However, I have plenty of sisters and I don't need a brother."

"We're starting a conservation program," he tried to comfort her. "We have every hope of getting some pollen from the other side of the planet once we have explained to the trees there how far we can make a little go, and you've got to accept it; you mustn't be silly about it."

"It isn't the same thing, Jim, and you know it. One of the penalties of intelligence is a diffusiveness of the natural instincts. I would rather not fruit at all than—"

[Illustration]

"Magnolia, you just don't understand. No matter how much you--well, pursue me, I can never turn into a laurel tree."

"I didn't--"

"Or any kind of tree! Look, some more books were just sent over from Base."

Magnolia gave a rueful rustle. "Just were sent? Didn't they come over a month ago?"

James flushed. "I know I haven't had a chance to do much reading to you in the last few weeks, Maggie--or any at all, in fact--but I've been so busy. After the baby's born, things will be much less hectic and we'll be able to catch up."

"Of course, James. I understand. Naturally your family comes first."

"One of the books that came was an advanced zoology text that might make things a little clearer."

"I should very much like to hear it. When you have the time to spare, that is."

"Tell you what," he said. "I'll get the book and read you the chapter on the reproductive system in mammals. Won't take more than an hour or so."

"If you're in a hurry, it can wait."

"No," he told her. "This will make me feel a little less guilty about having neglected you."

* * * * *

"Whereupon the umbilical cord is severed," he concluded, "and the human infant is ready to take its place in the world as a separate entity. Now do you understand, Magnolia?"

[Illustration]

"No," she said. "Where do the bees come in?"

I thought you were in such a hurry to get to Base, James," Phyllis remarked sweetly from the doorway, wiping her reddening hands on a dish towel.

"I am, dear." He slipped the book behind his back; it was possible that, in her present state of mind—induced, of course, by her delicate condition—Phyllis might misunderstand his motive in reading that particular chapter of that particular book to that particular tree. "Just stopped for a chat with Magnolia. She's agreed to be godmother to the baby."

"How very nice of her. Earth Government will be so pleased at such a fine example of rapport with the natives. You might even get a medal. Wouldn't that be nice?... James," she hurried on, before he could speak, "you still haven't found any green-leafed plants on the planet, have you? Have you looked everywhere? Have you looked hard?"

"Haven't I told you time and time again, Mrs. Haut," the tree said, "that there aren't any--that there can't be any? It's impossible to synthesize chlorophyll from the light rays given off by our sun--only cyanophyll. What do you want with a green-leafed plant, anyway?"

Phyllis's voice broke. "I think I'd lose my mind if I was convinced that I'd never see a green leaf again. All this awful blue, blue, all the time, and the leaves never fall, or, if they do, there are new ones right away to take their place. They're always there—always blue."

"We're everblue," Magnolia explained. "Sorry, but that's the way it is."

"Jim, I hate to hurt your feelings, but I just have to take down those curtains. The colors--I can't stand it!"

* * * * *

"Pregnant women sometimes get fanciful notions," James said to the tree. "It's part of the pregnancy syndrome. Try not to pay any attention."

"Kindly don't explain me to a tree!" Phyllis cried. "I have a right to prefer green, don't I?"

"There is, as your proverb says, no accounting for strange tastes," the tree murmured. "However--"
"We're going to have a formal christening," James interrupted, for the sake of the peace. "We thought we should, since ours will be the first baby born on the planet. Everybody on Elysium will come--that is, all the human beings. Only because they can come, you know; we'd love to have the trees if they were capable of locomotor movement. You'll get to widen your social contacts, Maggie. Dr. Lakin and Dr. Cutler will probably be here; I know you'll be glad to see Dr. Lakin again, and you've been anxious to meet Dr. Cutler. They've been asking after you, too. I think Dr. Lakin is planning to write a monograph on you for the Journal of the American Association of Professors of English Literature--with your permission, of course."

"Christening--that's one of your native festivals, isn't it? It should be most interesting."

"That's right," Phyllis murmured. "It will be Christmas soon. I'd almost forgotten. It'll be the first Christmas I've ever spent away from home. And there won't be any snow or--or anything." She started to guttate--to cry again.

"Cheer up, honey," Jim said. "It won't be as bad as you think, because I didn't forget Christmas was coming. There's something specially nice for you on its way from Earth; I only hope it gets here on time." Phyllis sniffled. "Maybe we'll have a Christmas party, too. Would you like that?" But she remained unresponsive.

He turned to the tree. "Christening's entirely different, though," he explained. "It's--I guess naming the fruit would be the best way to describe it."

"Is that so?" Magnolia said. "What kind of fruit do you expect to have, Mrs. Haut? Oranges? Bananas? As your good St. Luke says, the tree is known by its fruit. You look as if yours might be a watermelon."

"Why, the--idea!" Phyllis choked. "Are you going to stand there, James, and let that vegetable insult me?"

"I'm sure she didn't mean to," he protested. "She got confused by--that zoology book I read her."

The door slammed behind his weeping wife.

"I don't think you quite understand, Maggie," he said. "In fact, sometimes I almost think you, too, don't want to understand."

"I know what kind of fruit it's going to be," the tree concluded triumphantly. "Sour apples."

"Ouch," exclaimed Magnolia, "that tickles! There's more to acting as a Christmas tree than I had anticipated from your glowing descriptions, Jim."

"Here, dear," Phyllis said, "maybe you'd better let me put the decorations on her."

"You can't get on the ladder in your condition," he said, apprehensive not only for her welfare but for the tree's. Phyllis had not taken kindly to the idea of having Magnolia as official Christmas tree, suggesting that, if she must participate in the ceremonies, it might be better in the capacity of Yule log. However, Jim knew Magnolia would be offended if any other tree were chosen to be decorated.

"I'll manage all right," he assured his wife. "If you want to be useful, you might put on some coffee and make sandwiches or something. The bachelors are coming over from Base with that equipment that arrived yesterday, and they'll probably be glad of a snack before turning in."

"The coffee's already on and the canapes made," Phyllis smiled. "And I've baked cookies, too, and whipped up a batch of penuche. What kind of a Christmas party do you think it would be without refreshments?"

"Very efficient, isn't she?" Magnolia remarked, as the battery-powered lights that James had affixed to her began to wink on, for the deep red-violet dusk had already fallen and the first moon was rising. "Have you thought, Mrs. Haut, that if you fruit today, it will save the expense of another festival?"

"I don't expect to fruit for another two months," Phyllis said coldly, "and why shouldn't we have another festival? We can afford it and I like parties. I haven't been to one since the day I landed."

"Is the life out here getting a little quiet for you, petiole?" the tree asked solicitously. "It must be hard when one has no intellectual resources upon which to draw."

Phyllis held her peace for ten seconds; then, "I wonder where those boys can be," she said. "I hope they bring some pickles along. I asked to have some sent, but I'm accustomed to having no attention paid to what I want."

"There's a surprise coming for you, Phyllis," James could not help telling her again, hoping to arouse some semblance of interest. "Something I know you'll love. And for you, too," he said courteously to Magnolia.

"You mean the same surprise for both, or a surprise apiece?" the tree asked.

"Oh, one for each, of course."

"I see the lights of the 'copter now!" Phyllis cried and, running out into the middle of the lawn, began waving her handkerchief. He hadn't seen her so pleasantly excited for a long time.

"I don't suppose I'll need to turn on the landing lights," he said to Magnolia. "You should do the trick."

"Am I all finished?" she rustled anxiously. "I do wish I could see myself. How do I look?"
"Splendid. I've never had as beautiful a Christmas tree as you, Maggie," he told her with complete honesty.

"Not even on Earth."

"I'm glad, Jim, but I still wish I could be more to you than just a Christmas tree."

"Shh. The others might hear."

For the helicopter had landed and the visitors were pouring out, with shouts of admiration. Not only the bachelors had come--and in full force--but some of the older men from Base, who apparently felt they could manage to do without their wives for twelve hours, even if those hours included Christmas Eve. He wondered where he and Phyllis could put them all, but some could sleep outside, if need be, for it was never cold on Elysium. The winds were gentle and the rains light and fragrant.

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While the visitors were crowding around Phyllis and the tree, James rooted eagerly through the packages they had brought, until he found what he wanted. Then he rushed over to the group. "I know I should wait until tomorrow, but I want to give the girls their presents now." The other men smiled sympathetically, almost as joyful as he. "Merry Christmas, Magnolia!" He hoped Phyllis would understand that it was etiquette which dictated that the alien life-form should get her gift first.

"Thank you," the tree said. "I am deeply touched. I don't believe anyone ever gave me a present before. What is it?"

"Liquid plant food--vitamins and minerals, you know. For you to drink."

"What fun!" she exclaimed in pretty excitement. "Pour some over me right now!"

"Not so fast, Jim, boy!" Dr. Cutler, the biologist, snatched the jug from James' hand. "First you-all better let me take a sample of this here stuff back to Base to test on a lower life-form, so's I can make sure it won't do anything bad to Miss Magnolia. Might have iron in it and I have a theory that iron may not be beneficial for the local vegetation."

"Oh, thank you!" the tree rustled. "It's so very thoughtful of you, Doctor, but I'm sure Jim would never give me anything that would injure me."

"I'm sure he isn't fixing to do a thing like that, ma'am, but he's no botanist."

"And for you, Phyllis...." James handed his wife the awkward bundle to unwrap for herself. She tore the papers off slowly. "Oh, Jim, darling, it's--it's--"

"You wanted a bit of green, so I ordered a plant from Earth. You like it? I hope you do."

"Oh, Jim!" She embraced him and the pot simultaneously. "More than anything!"

"It won't stay green," Magnolia observed. "Either it'll turn blue or it'll die. Puny-looking specimen, isn't it?"

"Well," said James, "it's only a youngster. I guess this Christmas is too early, but next Christmas there ought to be berries. It's a holly plant, Phyl."

"Holly," she repeated, her voice shaking a little. "Holly." She and Dr. Cutler exchanged glances.

"I told you, Miz Phyllis, ma'am--he may know the first thing about botany, but he doesn't know anything after that."

"Jim," Phyllis said, linking her free arm through his, "I misjudged you. Dr. Cutler is right. You don't know so very much about botany, after all."

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He looked at her blankly. Her voice was trembling, and not with tears this time. "I love this little plant; it's just what I wanted ... but there aren't ever going to be any berries, because, to have berries, you have to have two plants. And the right two. Holly's di--dio--it's just like us."

"Oh," James said, feeling thoroughly inadequate. "I'm sorry."

"But you mustn't be sorry. I'm going to plant it here on Elysium, and I hope it will stay green in spite of what she says, and it'll have blossoms anyway ... and it was very, very sweet of you, dear."

She kissed his cheek.

"Is this one a boy or a girl?" Magnolia asked.

"You-all can't tell till it blooms, Miss Magnolia, ma'am," Dr. Cutler informed her.

"Maybe I can. Hand it up here, please."

Phyllis paused for an irresolute moment, then, smiling nervously at her guests, obliged.

"It's a boy," Magnolia announced, after a minute. "A boy." She gave back the pot reluctantly. "Phyllis," she said, "you and I have never been friends and I admit that it's been my fault just as much as yours."

"As much as mine?" Phyllis echoed. "I like that--" and was going to go on when she obviously recollected that they had company, and stopped.

"So I know it's presumptuous of me to ask you a favor."

"Yes, Magnolia?" Phyllis said, her fine cornsilk eyebrows arched a trifle. "What is this favor?"
"When you plant the little fellow—you said you were going to, anyhow—would you plant him near me?"

Phyllis looked down at the plant she held cradled in her arms and then up at the tree. "Of course, Magnolia," she said, frowning slightly. "I didn't realize..." Her voice began to tremble. "I have been pretty rotten, haven't I?" She looked toward James, but he turned his glance away.

"Just because you were a plant," Phyllis continued, "didn't mean I had to be a b-b-beast. It must have been awful for you, seeing me like this, practically crowing over you, and knowing that you yourself would never have the chance to be a m-m-m-mother."

"'Full many a flower is born to blush unseen,'" Magnolia said sadly, "'and waste its sweetness on the desert air.'"

Phyllis was crying unashamedly now. "I'll plant him right next to you--Maggie. I want you to have him. He can be your baby."

"Thank you, Phyl," Maggie said softly. "That's very ... blue of you."

"Although I think that's a jim-dandy idea," the biologist said, "and I sure wouldn't want to do anything to discourage it, being real interested in the results of an experiment like that my own self, I don't think you ought to feel so mean about it, Miz Phyllis. If all she wanted--begging your pardon, Miss Magnolia, ma'am--was a baby, why didn't she take an interest in the holly until she found out it was a male? Why wouldn't a little old girl holly have done as well?"

"Why--why, you scheming vegetable!" Phyllis exploded at Magnolia, clutching the holly plant to her protective bosom. "He's much too young for you, and I'm going to plant him far away, where he can't possibly fall into your clutches."

"Now, Miss Phyllis, we-all mustn't look at things out of their proper perspective."

"Then why did you take your hat off when you were introduced to Miss Magnolia, Cutler?" Dr. Lakin asked interestedly.

"Sir, where I come from, we respect femininity, whether it be animal, vegetable or mineral. Nonetheless, we-all got to remember, though Miss Magnolia is unquestionably a lady, she is not a woman."

Phyllis began to laugh hysterically. "You're right!" she gasped. "I had almost forgotten she was only a tree. And that it is only a little Christmas holly plant that's probably going to die, anyway--they almost always do."

"That's cruel, Phyllis," James said, "and you know it is."

"Do you really think I'm cruel? Are you going to tell the Society for the Prevention of Cruelty to Vegetables on me? But why am I cruel? I'm giving her the holly. That's what she wants, isn't it? Do you hear that, Miss Magnolia, ma'am? He's all yours. We'll plant him next to you--right away. And I hope he doesn't die. I hope he grows up to make you a good husband."

"She's really quite remarkable," Dr. Lakin said to James later that same evening, after the planting ceremonies were over and the rest of the party had gone into the cottage for fresh coffee and more sandwiches and cookies and penuche. "Quite remarkable. You're a lucky man, Haut."

"Thank you, sir," James replied abstractedly. "I'm sure Phyllis will be pleased to--"

"Phyllis! Oh, Mrs. Haut is a very remarkable woman, of course. A handsome, strong girl; she'll make a splendid mother, I'm sure. But I was referring to Miss Magnolia. She's a credit to you, my boy. If for no other reason, your name will go down in the history of our colony as that of the guide and mentor of Miss Magnolia. That's quite a tree you have there."

James looked at the dark form of the tree--for the lights had been turned out--silhouetted against the three pale moons and the violet night. "Yes, she is," he said.

"You're fortunate to be her neighbor ... and her friend."

"Yes, I am."

"Well, I expect I'd better join the rest. Are you coming on in, Jim?"

"In a little while, sir. I thought I'd--I wanted to have a word with Magnolia. I won't be long."

"Of course, of course. I'm delighted to see that there is such an excellent relationship between you.... Good night, Miss Magnolia!" he called.

"Good night, Dr. Lakin," the tree replied, politely enough, but it was obvious that she was preoccupied with her new charge, who stood as close to her as it was possible to plant him and yet allow room for him to grow.

The door closed. James walked across the lawn until he was quite near Magnolia. "Maggie," he whispered, reaching out to touch her trunk--smooth it was, and hard, but he could feel the vibrant life pulsing inside it. Certainly she was not a plant, not just a plant, even though she was a tree. She was a native of Elysium, neither animal nor
vegetable, unique unto the planet, unique unto herself. "Maggie."
"Yes, Jim. Don't you think his silhouette is so graceful there in the moonlight? He isn't really puny--just frail."
"Maggie, you're not serious about this holly?"
"What do you mean?" And still he didn't have her full attention. Would he ever have it again?
"Serious about raising him to be your--your--"
"Why not, Jim?"
"It's impossible."
"Is it? It certainly is far more possible with him, isn't it? That much I understood from your zoology books."
"I suppose so."
"Besides, I have nothing to lose, have I?"
"But even if it were possible, wouldn't it be humiliating for you? The creature's mindless!"
Magnolia's leaves rustled in the darkness. She was laughing--a little bitterly. "Your Phyllis isn't your intellectual equal, Jim, and yet you say you love her and I suppose you do. Am I not entitled to my follies also?"
But she couldn't compare Phyllis to a holly plant! It was unreasonable.
"He may die, of course," Magnolia said. "I've got to be prepared for that. The soil is different, the air is different, the sun is different. But the chances are, if he survives, he'll turn blue. And if he turns blue, who knows what other changes might be brought about? Maybe the plants on your Earth aren't inherently mindless, Jim. Maybe they just didn't have a chance. 'Know ye the land where the cypress and myrtle are emblems of deeds that are done in their clime...?' That land isn't Earth, Jim, so it might just possibly be Elysium."
* * * * *
Again he didn't say anything. What he wanted to say, he had no right to say, so he kept silent.
"It'll be a chance for me, too, Jim. At least we're both plants, he and I. That gives us a headstart."
"Yes, I suppose it does."
"Intellct doesn't count for much in the propagation of the species. Life goes on without regard for reason, and that's mainly what we're here for, to make sure that life goes on--if we're here for anything at all. Thanks to your kind, Jim, life will continue on this planet; it will certainly be your kind of life--and I hope it can be ours as well."
"Yes," he said. "I hope so, too."
And he did, but he wished it didn't have to continue in quite that way. Perhaps it was a trick of the three moons, but the holly plant's leaves seemed to have changed color. They were no longer green, but almost blue--powder blue.
"You'd best be getting on to your party, Jim," Magnolia said. "You wouldn't want to be remiss in your duties as host. And please close the door gently when you go inside. The little holly plant's asleep."

As he closed the door carefully behind him, he heard a burst of laughter coming from the kitchen, where the guests apparently had assembled--raucous animal laughter--and, rising shrill and noisy above it, Phyllis's company laugh.
What? Oh, sorry. John--down here for breakfast? What was the matter? The kid sick or something? Every morning he took his meal to his room to eat in solitude. Funny kid.

Philon removed the food capsule from the wall dock, stopping the soft gushing of air in the suction tube. Setting it on the table he snapped it open and removed the individual thermocels of food.

Philon poured coffee from the thermos and absently stirred in cream and sugar. Fifty thousand....

John was well into his breakfast already. "Phil, I was down to visit those people on the corner--you know, the house that appeared there over-night."

"Um."

"Their name is MacDonald," John said. "And they have a son, Jimmie, just my age, and a younger girl, Jean. Gosh, you ought to see the inside of their house, Phil. Old-fashioned! At the windows they got something called venetian blinds instead of our variable mirror thermopanes. And you know what? They don't even have an FP connection. They prepare all their meals in the house!"

John's excitement finally aroused Philon's attention. "No Food Preparation service? But that's unheard of!"

"They're sure swell people though."

"Where in the world did they come from?" Philon poured more coffee.

"Some place out West--Oregon, I think. Lived in a small town."

"How come their house appeared over-night?"

"Yeah, I asked them about that," John said. "They said their house is a prefab and it was cheaper to move it from Oregon than to buy one here. So they moved in one night--lock, stock and barrel."

John looked at Philon with a tentative air. "And another thing--Jimmie and Jean are their real children."

Philon began to frown in disgust. "Real children--how vulgar! No one does that anymore. That custom went out years ago with the Eugenic Act of two thousand twenty-nine. Breeding perfect children is the job of selected specimens. Why, I remember the day we passed our check over to Maternity Clinic! You were the best specimen in the place--and you carried the highest price tag too--ten thousand dollars!"

At that moment Ursula, his wife, her green rinse tumbling in stringy tufts over her forehead pattered into the breakfast room. Her right eye was closed in a tight squint against her cigarette smoke.

"Well, do I get my share of breakfast," she muttered, "or do I have to scrabble at the trough like the rest of the hogs around here?"

Philon nodded at a third thermocel in the capsule. "That's yours, Ursula." He fixed her with a cocked eye.

"What time did that gigolo get you home this morning?"

Ursula blew the hair out of her eyes, then took a good look at her husband. "Why all the sudden concern about my affairs? I feel like going to the Cairo I call up Francois. He dances divinely. I feel like making love I call up Jose...." She shrugged. "So, I say, why the sudden concern? All these years you say nothing. Every minute away from home you're involved in big deals to make money, steal money--maybe even eat it."

He looked at her cryptically. "I've got to raise a fifty-grand quota."

Without even looking up from her breakfast Ursula said absentely, "Oh, that. It is election year again, isn't it?"

"And I'll have to ask you to cancel all unnecessary expenditures for the time being."

She shook her head. "Can't--I've already reserved Love's Passion for this afternoon and a whole block of titles for three months."

Philon compressed his mouth, then practically blew the words at her. "Damn it, Ursula, you're spending too much time psycho-dreaming these cheap plays. You know the psychiatrist has warned you to lay off them. Stimulates your endocrine system too much. No wonder you live on sleeping pills."

"Oh, shut up!" She stared at him, the anger in her tugging at her loose mouth. "If I feel like a psychoplay I'm going to have me a psychoplay. It's the only stimulation I get any more."

Muttering, "'Thell with it!" Philon got up from the table and walked into the living room. Slipping into his gray top coat and hat he ascended to the copter roofport.

Before stepping into the copter seat he paused to study the MacDonald house on the corner. Odd-looking house at that. Mid-twentieth century, yet it looked brand new.

Then, putting the house out of mind, Philon shot his copter skyward and joined Skyway No. 7 traffic into town. Descending on his office building he left the ship in care of the parking attendant and by elevator dropped to his floor. At a door marked Miller Electronic Manufacturing Co, he walked in.

In his office he slouched into his chair and stared at the small calendar on his desk. Rakoff wanted the fifty-thousand before Royal Pastel Mink Monday. One week--that wasn't very much time.

Flinching from the unpleasant problem, he stared at the city skyline, his mind drifting lazily. He thought about Royal Pastel Mink Monday. Some said it was just another Day dreamed up by furriers to make people fur-conscious. Others said it commemorated a period of great public indifference which cost large numbers their
freedom to vote.

Of course the other party had their symbology too--like the Teapot Celebration. No one seemed to know for sure what it meant. Anyway, why worry how they started? Why did people knock on wood for luck--or throw salt over their left shoulder?

But then once in awhile there arose some who spelled out a strange lonely cry, calling themselves the conscience of the people. They spoke sternly of the thin moral fiber of the country, berating the people for what they called their amoral evolution brought on by indifference and negligence until they no longer could hear the still guiding voice of their conscience. But they were scornfully laughed down and it seemed to Philon he heard less and less of these men.

In the late afternoon a whip from party headquarters dropped in. "Hello, Feisel," Philon said with little enthusiasm for the swarthy-faced man.

Without even the formality of a greeting Feisel smiled down at Philon in a half-sneer. "Well, Philon, how we doin' with the fifty grand, eh?"

Philon tossed a sheaf of papers on the desk with a gesture of impatience. "Now look, I'll raise the fifty G's by the end of the week."

Feisel lifted a thin black eyebrow and shrugged elaborately. "Just inquiring, my friend, just inquiring. You know--just showing friendly interest."

"Well, go peddle your papers to somebody else. You make me nervous."

Feisel sniffed with injured pride. "That's gratitude for you. And just when I was going to put a little bee in your bonnet. I thought you'd like to know what happened to another guy just like you. You see, he got ideas, instead of digging to get his quota. He tried to lam out and you know where they found him? On the sidewalk below his twenty-third-floor window."

As Feisel went out, Philon swore softly at his retreating back. But Feisel's little story sent a chill through him. That evening when he descended from his copter port and stepped into his living room he was surprised to hear young voices upstairs. Deciding to investigate he stepped on the escalator. At John's door he poked his head in.

"Hello."

A young blond-headed boy with bright clear eyes turned to look at him and a younger girl with short curly hair smiled back.

John said, "Phil, this is Jimmie, and Jean, his sister. They don't have a home-school teleclass rig yet, so they're attending with me."

"I see." Philon nodded to the children. "And how did you like your first day at school?"

"Fine," Jean said, beaming until her eyes almost disappeared. "It was fun. The teacher was talking about the history of atomic energy and when I told her we had one of the first editions of the famous Smyth report on Atomic Energy she was surprised."

"A first edition of the Smyth Report? No wonder your teacher was surprised." Through Philon's mind ran the recollection that first editions of the Smyth Report brought as high as seventy thousand dollars.

The children's excited chatter was suddenly interrupted by the front door chimes. Stepping to the wall televiewer, Philon pressed a button and said, "Who is it?"

A pleasant-faced man with a startled look said, "Oh--sorry. This gadget on the door-casing surprised me. Ah--I think my children, Jimmie and Jean, are here. I'm Bill MacDonald."

Behind him Philon heard Jean suppress a dismayed cry. "Gosh, Jimmie, it's late. Daddy's had to come for us!"

Philon said, "And I'm Phil Miller, MacDonald. Come in. We'll be down in a moment."

The MacDonald children and John headed for the stairs in a happy rush, ignoring the descending escalator, two steps at a time. Philon followed at a meditative pace, his thoughts trooping stealthily abreast. Seventy thousand dollars. Now, if he were to....

"Beautiful home you've got here, Miller."

Philon came out of his daydreaming to see MacDonald coming into view around the corner of a living room ell. Philon pressed his extended hand. "Thanks. Glad you like it."

Jean broke in breathlessly. "Oh, Daddy, you ought to see how they conduct classes--by school TV. You write on a glass square and it appears immediately at the teacher's roll-board. And when you--"

Jimmie interrupted. "Aw, lemme tell 'im something too, Jean. Dad, John used a spare TV for Jean's freshman class while we 'showed' for junior class on his. Gosh, in history, Dad, their old newsreels go back to World War Two. I even saw your Marine unit--"

MacDonald cut his son short. "That's enough, Jimmie. You can tell us about it later." He herded his children toward the front door. "Thanks, Miller, for letting the kids use the school TV. I'm having one installed tomorrow."

After they left John said with a sparkle Philon had never seen before, "You know, Phil, those are the most
interesting kids I've ever met. All the others I know are bored stiff. They've been everyplace and they've done everything.

"But Jimmie and Jean ask more questions about things than anybody I know. They're really interested. Every time I drop in on them they're studying history beginning with the middle of the Twentieth Century. They're absolutely fascinated and read it like fiction."

With more on his mind than his neighbors' unusual behavior Philon said, "Mmm." He stood looking at the boy for a long moment until John finally shifted self-consciously.

"What's the matter, Phil?"

Philon ended his musing. "Tomorrow night we're all going to call on the MacDonalds. And while we're there I want you to slip that copy of the Smyth Report out of their library."

For a moment the young boy's smooth face was a blank mask. Then it filled in with shocked surprise, then resentment and finally anger. "You mean--steal?"

"Of course. If they're too innocent to realize the value of the book that's their hard luck."

"But, Phil, I can't imagine myself stealing from..."

Impatiently, Philon said, "Since when did you suddenly get so holier-than-thou? Life is harsh, life is iron-fisted and if you don't keep your guard up you're going to get socked in the kisser."

John said slowly with a certain tone of shame, "Yes, I know. As far back as I can remember you've told me that. But in spite of it I can't help feeling it isn't right to treat the MacDonalds that way. They're too nice, too good."

"Look, John. You might as well learn the hard facts of life. All the high-sounding arguments for a moral world and all the laws on the books implementing those arguments are just eyewash. Sure, the President swears that he will uphold the constitution and enforce all the laws."

"Then we carefully surround him with counterspies--wire his rooms with dictaphones, slit his mail, install secret informers on his staff. All because no matter who the party is able to elect we don't trust him--because the society he represents does not trust itself."

"Is that why we have more and bigger jails than ever?"

Philon shrugged. "All I'm trying to tell you is don't go soft-headed or the world will take your shirt."

The next day before leaving for the office Philon said to his wife, "Call up the MacDonalds and if they're going to be home tonight tell them we'll be over for a visit."

Ursula made a face. "Do we have to call on those people? They'll bore me stiff."

For heaven's sake, Ursula! It's a matter of vital importance to me--and you also, if I have to appeal to your wide streak of selfishness."

"I can't see it."

"I'll explain later. I've got to go."

During the day Ursula called him. "Well, Phil, I called as you said and I've committed us for dinner tonight."

"Dinner! Hmm, they are convivial people."

"Yes and the dinner is going to be cooked right there in their house. How vulgar can some people get?"

That evening while dressing Ursula said, "Phil, John spends a lot of time at the MacDonalds'. What do you suppose he sees in them? It gets me the way he quotes them all the time and reports their least doings. Today he came tearing into the house and said, 'Ursula, it's wonderful!' I said, 'What's wonderful?' And John said, 'The dinner they're cooking at MacDonalds'. I've never smelled anything like it in all my life. Why don't we cook in our house like they do? Mrs. MacDonald was baking cookies and let me have one right out of the oven. Mmmm, boy was it good!'"

Ursula finished, "Now, I ask you, did you ever hear anything so barbaric--cooking in the house and having all the odors permeate the whole place?"

"Well, we'll see."

Later when they arrived at the MacDonalds' they were welcomed with a quiet warmth and friendliness that Philon cynically assumed to be a new and different front.

As they sat down to dinner Mrs. MacDonald, a rosy-cheeked woman with a quick and ready smile, said, "I'm sorry we aren't able to get a connection yet. So everything we're eating tonight is right out of our deep-freeze."

John Miller said, "Gosh, Mrs. MacDonald, as far as I'm concerned, I'd rather eat from your deep-freeze anytime than from the FP!"

Bill MacDonald looked across the table at Jean and said, "All right, Jean."

Jean and all the MacDonalds bent their heads and the girl began, "We thank Thee for our daily bread as by Thy hands..."

As the girl spoke Phil's gaze drifted around to his wife, who lifted her shoulders in mystified amazement. But it was a bigger surprise to see John's bent head. For the moment John was a part of this family--part of a wholeness
tied together by an invisible bond. The utter strangeness of it shocked Philon into rare clarity of insight.

He saw himself wrapped up in his business with little regard for Ursula or John, letting them exist under his roof without making them a part of his life. Ursula with her succession of gigolos and her psycho-plays and John withdrawn into his upstairs room with his books. Then he closed his mind again as if the insight were too blinding.

What strange customs these MacDonalds had! Yet he had to admit the meal looked more appetizing than anything he had ever seen. It gave an impression of sumptuous plenty to see the food for everybody in one place instead of individually packaged under glistening thermocel. And instead of throwaway dishes they used chinaware that could have come right out of a museum.

Ursula asked, "What kind of fish is this?"

Bill MacDonald answered with a big grin. "It's Royal Chinook salmon that I caught in the fish derby on the Columbia River only last--"

Mrs. MacDonald colored suddenly. "You'll have to forgive Bill. He gets himself so wrapped up in his fishing."

Glancing at MacDonald Philon was surprised to see the same confusion and embarrassment on his host's face. It was after dinner when Mrs. MacDonald and Jean were clearing the table that Philon looked over the library shelves. MacDonald himself appeared uneasy and hovered in the background.

"You'll have to excuse my selection. They're all pretty old. I--er--inherited most of them from a grandfather."

In a few minutes Philon spotted the Smyth Report. Fixing its position well in mind he turned away. MacDonald was saying, "Come down in the basement and I'll show you my hobby room."

"Glad to." As MacDonald led the way Philon whispered to John, "You'll find the book on the second shelf from the bottom on the right side."

John returned him a stony stare of belligerence and Philon clamped his jaw. The boy dropped his glance and gave a reluctant nod of acquiescence.

Upstairs a half hour later Ursula, who had filled her small ashtray with a mound of stubs, suddenly told Philon she was going home.

"But, Ursula, I thought that--"

With thin-lipped impatience she snapped, "I just remembered I had another engagement at eight."

Mrs. MacDonald was genuinely sorry. "Oh, that's too bad, I thought we could have the whole evening together."

Casting a meaningful glance at John and getting a confirming cold-eyed nod in return, Philon got on his feet. "Sorry, folks. Maybe we'll get together another time."

"I hope so," MacDonald said.

In angry silence Philon walked home. Not until they were all in the house and Ursula was hastening toward her second-floor room did he say a word. "I suppose your 'other engagement' means the Cairo again tonight?"

Ascending on the escalator Ursula turned to look scornfully over her shoulder. "Yes! Anything to escape from boredom. All that woman talked about while you were in the basement was redecorating the house or about cooking and asking my opinions. Ugh!"

Philon laughed mirthlessly. "Yeah, I guess she picked a flat number to discuss those things with. Anything you might have learned about them you must have got out of a psychoplay."

Stepping off the escalator at the top Ursula spit a nasty epithet his way, then disappeared into the upstairs hall. John stood at the foot of the escalator, a reluctant witness to the bickering. Divining his attitude Philon mentally shrugged it off. The kid might as well learn what married life was like in these modern days.

"You got the book, eh?"

John pulled a book from his suit coat and laid it on a small table. "Yes, there's the book--and I never felt so rotten about anything in all my life!"

Philon said, "Kid, you've got a lot to learn about getting along in this world."

"All right--so I've got a lot to learn," John cried bitterly. "But there must be more to life than trying to stop the other guy from stripping the shirt off your back while you succeed in stripping off his!"

With that he took the escalator to the upper hall while Philon watched him disappear.

Left alone now, Philon settled into a chair by a window and stared down the street at the MacDonald house. Odd people--it almost seemed they didn't belong in this time and period, considering their queer ways of thinking and looking at things. MacDonald himself in particular had some odd personal attitudes.

Like that incident in his basement--Philon had curiously pulled open a heavy steel door to a small cubicle filled with a most complex arrangement of large coils and heavy insulators and glassed-in filaments. MacDonald was almost rude in closing the door when he found Philon opening it. He had fumbled and stuttered around, explaining the room was a niche where he did a little experimenting on his own. Yes, strange people.

The next day Philon eagerly hastened to a bookstore dealing in antique editions. Hugging the book closely
Philon told himself his troubles were all over. The book would surely bring between fifty and a hundred grand.

A clerk approached. "Can I help you?"

"I want to talk to Mr. Norton himself."

The clerk spoke into a wrist transmitter. "Mr. Norton, a man to see you."

In a few moments a bulbous man came heavily down the aisle, peering through dark tinted glasses at Philon.

"Yes?"

"I have a very rare first edition of Smyth's Atomic Energy," said Philon, showing the book.

Norton adjusted his glasses, then took the book. He carefully handled it, looking over the outside of the covers, then thumbed the pages. After a long frowning moment, he said, "Publication date is nineteen forty-six but the book's fairly new. Must have been kept hermetically sealed in helium for a good many years."

"Yeah, yeah, it was," Philon said matter-of-factly. "Came from my paternal grandfather's side of the family. A book like this ought to be worth at the very least seventy-five thousand."

But the bulbous Mr. Norton was not impressed. He shrugged vaguely. "Well--it's just possible--" He looked up at Philon suddenly. "Before I make any offer to you I shall have to radiocarbon date the book. Are you willing to sacrifice a back flyleaf in the process?"

"Why a flyleaf?"

"We have to convert a sample of the book into carbon dioxide to geigercount the radioactivity in the carbon. You see, all living things like the cotton in the rags the paper is made of absorb the radioactive carbon fourteen that is formed in the upper atmosphere by cosmic radiation. Then it begins to decay and we can measure very accurately the amount, which gives us an absolute time span."

With a frustrated feeling Philon agreed. "Well okay then. It's a waste of time I think. The book is obviously a first edition."

"It will take the technician about two hours to complete the analysis. We'll have an answer for you--say after lunch."

The two hours dragged by and Philon eagerly hastened to the store.

When Mr. Norton appeared he wore the grim look of a righteously angry man. He thrust the book at Philon. "Here, sir, is your book. The next time you try to foist one over on a book trader remember science is a shrewd detective and you'll have to be cleverer than you've been this time. This book is, I'll admit, a clever job, but nevertheless a forgery. It was not printed in nineteen forty-six. The radiocarbon analysis fixes its age at a mere five or six years. Good day, sir!"

Philon's mouth fell open. "But--but the MacDonalds have had it for...." He caught himself, and stammered, "There must be some mistake because I...."

Norton said firmly, "I bid you good day, sir!"

With a sense of the sky falling in on him, Philon found himself out on the street. No one could be trusted nowadays and he shouldn't have been surprised at the MacDonalds. Everyone had a little sideline, a gimmick, to put one over on whoever was gullible enough to swallow it.

Why should he assume a hillbilly family from way out in Oregon was any different? This was probably Bill MacDonald's little racket and it was just Philon's bad luck to stumble on it. MacDonald probably peddled his spurious first editions down on Front Street for a few hundred dollars to old bookstores unable to afford radiocarbon dating.

For awhile he stared out his office window, brooding. The fifty grand just wasn't to be had--legally or illegally. And when he recalled Feisel's little gem about the man falling out his office window Philon was definitely ill.

Then the cunning that comes to the rescue of all scheming gentry who depend on their wits emerged from perverse hiding. An ingenious idea to solve the nagging problem of the fifty thousand arrived full-blown. Grinning secretively to himself, he walked into the telecommunications room.

He got the Technical Reference Room at the Public Library and asked for the detailed plans of the big electronic National Vote Tabulating machine in Washington. At the other end a microfilm reel clicked into place, ready to obey his finger-tip control.

For two hours he read and read, making notes and studying the circuits of the complicated machine. Then, satisfied with his information, he returned the microfilm.

Leaving the office he descended to the streets and set out for the party headquarters. Now if only he could sell the neat little idea to the hierarchy....

At the luxurious marbled headquarters he asked to be let into the general chairman's office. The receptionist announced him and Philon walked in to find Rakoff awaiting him behind his beautiful carved desk.

Rakoff's dead-white cheeks never stirred and his stiff blond hair stood up in a rigid crew cut. He rolled his cigar in his big mouth. "Hello, Miller. What's on your mind?"
Philon took a breath and it seemed to him now that this idea was a crazy one. "I came to tell you I'm unable to raise my fifty grand quota, Rakoff."

The man's brows moved slightly and his eyes narrowed significantly. With a rasp in his voice he said deliberately, "That's too bad, Mr. Miller--for you."

The rasping tongue put a faint quaver in Philon's voice but he went on. "However, I've brought you an idea that's worth more than fifty grand. It's worth millions."

Rakoff's eyes hardly blinked. "I'm listening--you're talking."

And Philon talked, talked rapidly and convincingly. When he finished Rakoff slapped his fat thigh in excitement.

That evening Philon dropped in on Bill MacDonald, who was sitting in his slippers smoking an old fashioned wood pipe.

"Come in, come in." MacDonald greeted him with a friendly smile. "I was just doing a little reading."

Philon held out the book. "I'm returning your masterpiece," he said with a sardonic smile.

MacDonald received it, glancing at the title. "Oh, Smyth's Atomic Energy. Good book--did you find it interesting?"

* * * * *

Philon began to laugh. "Well, I'll tell you, Bill, your little racket of having spurious first editions printed some place and then peddling them sure caught up with me."

The good-natured smile on MacDonald's face faded in a look of incredulity. He took the pipe from his mouth.

"Spurious first editions?"

"Yeah, I sure took a beating today but I couldn't help laughing over it afterwards. Here I've been thinking of you folks as simon-pure numbers. But I got to hand it to you. You sure took me in with Smyth's Atomic Energy as being a genuine first edition," Philon went on to explain the radiocarbon dating of the book.

MacDonald finally broke in to protest, "But that book really is over a hundred years old." Then he looked up at his wife. "Of course, Carol, that's the explanation. The radiocarbon wouldn't decay a full hundred years any more than we..." Suddenly, he seemed to catch himself, as his wife raised a hand in apparent agitation.

"But why did you want to sell my book to a dealer?" MacDonald continued.

Philon went on to explain the system of the poll quota. He told him a lot of other things too about the election of a President and the organized political machines that levied upon all registered voters what amounted to a checkoff of their incomes.

Carol MacDonald said, "You mean that not everyone can vote?"

Philon looked at her in surprise. "Well, of course not. Only people of means vote--and why shouldn't they? They take the most interest in the elections and all the candidates come from the higher-middle-class of income. Anyway why should the people squawk? They took less and less interest in the elections. "When the proportion of voters turning out for elections got down to thirty percent those that did turn out passed laws disenfranchising those who hadn't voted for two Presidential elections. So if things aren't being run to suit those who lost their rights to vote they've got no one to thank but themselves."

Bill MacDonald looked at his wife and said in a voice filled with incredulity, "My lord, Carol, if the people back there only knew what their careless and negligent disinterest would one day do to their country!"

Philon looked from one to the other, saying, "You sound as if you were talking about the past."

MacDonald said hurriedly, "I--er--was referring to the history books."

That night Philon did not sleep well for the morrow would be a day he'd never forget. Even to his calloused mind the dangers involved in the exploit were considerable.

In the morning he went into John's room and stood looking down at the boy, who sleepily opened his eyes.

Philon said, "I'm going to be gone from my office all day. And if anyone calls or comes to see me here at the house tell him I'm sick. If necessary I'm ordering you to swear in court that I was here all day and night. Ursula's gone for the weekend to the seashore, so I'm depending on you. Do you understand?"

John frowned in confusion. "You say you're sick and staying home all day?"

Impatience edging his words Philon went over the explanation again.

"What d'you mean 'swear in court'? What are you planning to do, Phil?" John's eyes were wide open now and full of apprehension.

"Never mind what I'm doing. Just tell anybody inquiring that I'm sick at home."

"You mean lie, eh?"

Phil lifted his hand, then swung, leaving the imprint of his four fingers on the boy's left cheek. "Now do you understand?"

The boy blinked back a tear and nodded wordlessly.
In the late afternoon Philon landed at Washington and under an assumed name made his way to the government building housing the big Election Tabulator. At the technical maintenance offices Philon asked, "Is Al Brant around?"

"Nope. He doesn't come on duty until tomorrow."

At Brant's address Philon knocked on an apartment door. Footsteps approached inside and the door was opened by a medium-sized man with black tousled hair. He appeared less than happy to see Philon.

"Hello, Phil. What's on your mind?"

Philon stuck out his hand. "Al, glad to see you again. I know you're not pleased to see me but let's let bygones be bygones. Can we talk?"

Al Brant stepped back reluctantly. "Well, I guess so. I thought we'd said everything we had to say the last time."

Philon walked in and settled himself on the davenport. "Yeah, I know, Al, we had some pretty harsh words. But at least I got you out of the mess."

Brant said bitterly, "Yeah, got me out of a mess I got into helping you on one of your shady deals when I worked for you. Well, as I said before, what's on your mind?"

Philon patted his right chest saying, "Got a hundred thousand here for you, Al."

Brant's brows lifted in amazement. "A hundred thousand! What's the catch, Phil?"

Philon's voice dropped to a confidential tone. "You always were a clever man with electronics, Al, and I've got something here that's just your meat. I've been studying the design of the Election Tabulator, and I've discovered a wonderful opportunity for you and me.

"Now listen--it's possible to replace two transmitters on the main teletype trunk so that a winning percentage of the incoming votes will be totaled up for my party. Simple little job, isn't it? Worth a hundred thousand!"

For a long moment Al Brant sat and stared at Philon in cold silence. Finally, he said, "Do you know what the penalty is for jimmying the Tabulator to influence voting?"

"No."

"It's life imprisonment!" Brant got up slowly and started across the room to Philon. "I fell for your line once and got burned--and here you come again. You must think I'm a born sucker. This time I'm doing the talking. Give me the hundred grand or I'll kill you with my bare hands!"

Philon watched him coming as if he were witness to a nightmare. He was trapped. And in this moment of snowballing fear he ceased to think. The gun in his pocket went off without conscious effort. Brant stopped, then collapsed to the floor. Panic took over Philon's mind and he fled the apartment building as rapidly as was safe.

He was almost back in the city when he tuned in a news broadcast. As he listened, he sat in stunned silence. Brant had roused himself enough before he died to talk to the man who found him in his apartment. Brant had named his killer as Philon Miller. Miller felt as if he had turned to ice.

Then his mind thawed out with a rush of reassuring words. After all, why should he be worrying? He had John's word in court as a perfect alibi. Yes, everything would be all right. Everything had to be all right.

In the late evening Philon arrived at his house with a consuming sense of great relief, as if the very act of entering his home would protect him from anything. There was a sense of safety in the mere familiarity of the environment.

On the mail table he found a note from Ursula saying she had gone for the weekend. Philon shrugged indifferently. He was glad to have her out of the way anyhow. But John--there was the best ten thousand dollars he had ever spent. A sound investment, about to pay its first real dividend.

"John!" His voice echoed in the house with a disturbing hollow sound. He wet his dry lips and shouted again, "John--where are you?"

Only his echoing voice answered him. In growing fright he pounded up the escalator and rushed into John's room. It was empty. On a desk he found a message in John's neat hand--

Phil and Ursula,

For a long time I have been very unhappy living with you. I'm grateful for the food and shelter and education you've provided. But you have never given me the love and warmth that I seem to crave. The funny part of it is that I never understood my craving and what it meant until I saw how love and affection bound the MacDonald kids and their folks.

This afternoon Jimmie and Jean came over to say good-by because they said their father told them they didn't belong here--that he was taking his family back where they belonged, atomic bomb threat and all--whatever he meant by that. After they left I got to thinking how much I'd like to go with them. So I'm leaving. Somehow I'm going to talk them into taking me with them wherever they are going. So this will have to be good-by.
John.

Philon lifted his eyes from the note and his glance strayed to the window. Dreading to look he took two slow steps and peered down the street. The sight of the empty lot on the corner paralyzed him in his tracks.

John gone! The MacDonald house gone! Gone was his perfect alibi! In Washington a dying man's words had spelled out his own death sentence.

A step at the door roused him from his horror-stricken trance. He looked up to see a detective and a policeman regarding him with cold calculation.

"What's the matter, Miller?" asked the detective. "We've punched your announcer button half a dozen times. You deaf? You better come along to Headquarters to answer some questions about your movements today."
Every man wants to see a Garden of Eden. John Barth agreed with his whole heart—he knew that he'd rather see than be one!

I

Take a fellow, reasonably young, personable enough, health perfect. Suppose he has all the money he can reasonably, or even unreasonably, use. He is successful in a number of different fields of work in which he is interested. Certainly he has security. Women? Well, maybe not any woman in the world he might want. But still, a very nice, choice selection of a number of the very finest physical specimens. The finest—and no acute case of puritanism to inhibit his enjoyment.

Take all that. Then add to it the positive assurance of continuing youth and vigor, with a solid life expectancy of from 175 to 200 more years. Impossible? Well--just suppose it were all true of someone. A man like that, a man with all those things going for him, you'd figure he would be the happiest man in the world.

Wouldn't you?

Sure. A man with all that would have to be the happiest--unless he was crazy. Right? But me, Johnny Barth, I had it.

I had all of it, just like that. I sure wasn't the happiest man in the world though. And I know I wasn't crazy either. The thing about me was, I wasn't a man. Not exactly.

I was a colony.

Really. A colony. A settlement. A new but flourishing culture, you might say. Oh, I had the look of a man, and the mind and the nerves and the feel of a man too. All the normal parts and equipment. But all of it existed—and was beautifully kept up, I'll say that—primarily as a locale, not a man.

I was, as I said before, a colony.

Sometimes I used to wonder how New England really felt about the Pilgrims. If you think that sounds silly—perhaps one of these days you won't.

The beginning was some ten years back, on a hunting trip the autumn after I got out of college. That was just before I started working, as far off the bottom as I could talk myself, which was the personnel office in my Uncle John's dry cleaning chain in the city.

That wasn't too bad. But I was number four man in the office, so it could have been better, too. Uncle John was a bachelor, which meant he had no daughter I could marry. Anyway, she would have been my cousin. But next best, I figured, was to be on good personal terms with the old bull.

This wasn't too hard. Apart from expecting rising young executives to rise and start work no later than 8:30 a.m., Uncle John was more or less all right. Humor him? Well, every fall he liked to go hunting. So when he asked me to go hunting with him up in the Great Sentries, I knew I was getting along pretty well. I went hunting.

The trip was nothing very much. We camped up in the hills. We drank a reasonably good bourbon. We hunted—if that's the word for it. Me, I'd done my hitch in the Army. I know what a gun is—and respect it. Uncle John provided our hunting excitement by turning out to be one of the trigger-happy types. His score was two cows, a goat, a couple of other hunters, one possible deer—and unnumbered shrubs and bushes shot at. Luckily he was such a lousy shot that the safest things in the mountains were his targets.

Well, no matter. I tried to stay in the second safest place, which was directly behind him. So it was a nice enough trip with no casualties, right up to the last night.

We were all set to pack out in the morning when it happened. Maybe you read about the thing at the time. It got a light-hearted play in the papers, the way those things do. "A one in a billion accident," they called it.

We were lounging by the campfire after supper and a few good snorts. Uncle John was entertaining himself with a review of some of his nearer, more thrilling misses. I, to tell the truth, was sort of dozing off.

Then, all of a sudden, there was a bright flash of blue-green light and a loud sort of a "zoop-zing" sound. And a sharp, stinging sensation in my thighs.

I hollered. I jumped to my feet. I looked down, and my pants were peppered with about a dozen little holes like buckshot. I didn't have to drop my pants to know my legs were too. I could feel it. And blood started to ooze.

I figured, of course, that Uncle John had finally shot me and I at once looked on the bright side. I would be a cinch for a fast promotion to vice president. But Uncle John swore he hadn't been near a gun. So we guessed some other hunter must have done it, seen what he had done and then prudently ducked. At least no one stepped forward.

It was a moonlight night. With Uncle John helping me we made it the two and a half miles back down the trail
to Poxville, where we'd left our car and stuff. We routed out the only doctor in the area, old Doc Grandy.

He grumbled, "Hell, boy, a few little hunks o' buckshot like that and you make such a holler. I see a dozen
twice's bad as this ever' season. Ought to make you wait till office hours. Well--hike yourself up on the table there.
I'll flip 'em out for you."

Which he proceeded to do. If it was a joke to him, it sure wasn't to me, even if they weren't in very deep.
Finally he was done. He stood there clucking like an old hen with no family but a brass doorknob. Something didn't
seem quite right to him.

Uncle John gave me a good belt of the bourbon he'd been thoughtful enough to pack along.
"What was it you say hit you, boy?" Doc Grandy wanted to know, reaching absently for the bottle.
"Buckshot, I suppose. What was it you just hacked out of me?"
"Hah!" He passed the bottle back to Uncle John. "Not like any buckshot I ever saw. Little balls, or shells of
metallic stuff all right. But not lead. Peculiar. M-mpf. You know what, boy?"
"You're mighty liberal with the iodine, I know that. What else?"
"You say you saw a big flash of light. Come to think on it, I saw a streak of light up the mountainside about
that same time. I was out on the porch. You know, boy, I believe you got something to feel right set up about. I
believe you been hit by a meteor. If it weren't--ha-ha--pieces of one of them flying saucers you read about."

Well, I didn't feel so set up about it, then or ever. But it did turn out he was right.

Doc Grandy got a science professor from Eastern State Teachers College there in Poxville to come look. He
agreed that they were meteor fragments. The two of them phoned it in to the city papers during a slow week and, all
in all, it was a big thing. To them. To me it was nothing much but a pain in the rear.

The meteor, interviewed scientists were quoted as saying, must have almost burned up coming through the
atmosphere, and disintegrated just before it hit me. Otherwise I'd have been killed. The Poxville professor got very
long-winded about the peculiar shape and composition of the pieces, and finally carried off all but one for the
college museum. Most likely they're still there. One I kept as a souvenir, which was silly. It wasn't a thing I wanted
to remember--or, as I found later, would ever be able to forget. Anyway, I lost it.

All right. That was that and, except for a lingering need to sit on very soft cushions, the end of it. I thought. We
went back to town.

Uncle John felt almost as guilty about the whole thing as if he had shot me himself and, in November, when he
found about old Bert Winginheimer interviewing girl applicants for checker jobs at home in his apartment, I got a
nice promotion.

Working my way up, I was a happy, successful businessman.

And then, not all at once but gradually, a lot of little things developed into problems. They weren't really
problems either, exactly. They were puzzles. Nothing big but--well, it was like I was sort of being made to do, or not
do, certain things. Like being pushed in one direction or another. And not necessarily the direction I personally
would have picked. Like----

Well, one thing was shaving.

I always had used an ordinary safety razor--nicked myself not more than average. It seemed OK to me. Never
cared too much for electric razors; it didn't seem to me they shaved as close. But--I took to using an electric razor
now, because I had to.

One workday morning I dragged myself to the bathroom of my bachelor apartment to wash and shave. Getting
started in the morning was never a pleasure to me. But this time seemed somehow tougher than usual. I lathered my
face and put a fresh blade in my old razor.

For some reason, I could barely force myself to start. "Come on, Johnny boy!" I told myself. "Let's go!" I made
myself take a first stroke with the razor. Man! It burned like fire. I started another stroke and the burning came
before the razor even touched my face. I had to give up. I went down to the office without a shave.

That was no good, of course, so at the coffee break I forced myself around the corner to the barber shop. Same
thing! I got all lathered up all right, holding myself by force in the chair. But, before the barber could touch the razor
to my face, the burning started again.

I stopped him. I couldn't take it.

And then suddenly the idea came to me that an electric razor would be the solution. It wasn't, actually, just an
idea; it was positive knowledge. Somehow I knew an electric razor would do it. I picked one up at the drug store
around the corner and took it to the office. Plugged the thing in and went to work. It was fine, as I had known it
would be. As close a shave? Well, no. But at least it was a shave.

Another thing was my approach to--or retreat from--drinking. Not that I ever was a real rummy, but I hadn't
been one to drag my feet at a party. Now I got so moderate it hardly seemed worth bothering with at all. I could only
take three or four drinks, and that only about once a week. The first time I had that feeling I should quit after four, I
tried just one—or two—more. At the first sip of number five, I thought the top of my head would blast off. Four was
the limit. Rigidly enforced.

All that winter, things like that kept coming up. I couldn't drink more than so much coffee. Had to take it easy
on smoking. Gave up ice skating—all of a sudden the cold bothered me. Stay up late nights and chase around? No
more; I could hardly hold my eyes open after ten.

That's the way it went.

I had these feelings, compulsions actually. I couldn't control them. I couldn't go against them. If I did, I would
suffer for it.

True, I had to admit that probably all these things were really good for me. But it got to where everything I did
was something that was good for me—and that was bad. Hell, it isn't natural for a young fellow just out of college to
live like a fussy old man of seventy with a grudge against the undertaker. Life became very dull!

About the only thing I could say for it was, I was sure healthy.

It was the first winter since I could remember that I never caught a cold. A cold? I never once sniffled. My
health was perfect; never even so much as a pimple. My dandruff and athlete's foot disappeared. I had a wonderful
appetite—which was lucky, since I didn't have much other recreation left. And I didn't even gain weight!

Well, those things were nice enough, true. But were they compensation for the life I was being forced to live?
Answer: Uh-uh. I couldn't imagine what was wrong with me.

Of course, as it turned out the following spring, I didn't have to imagine it. I was told.

II

It was a Friday. After work I stopped by Perry's Place with Fred Schingle and Burk Walters from the main
accounting office. I was hoping it would turn out to be one of my nights to have a couple—but no. I got the message
and sat there, more or less sulking, in my half of the booth.

Fred and Burk got to arguing about flying saucers. Fred said yes; Burk, no. I stirred my coffee and sat in a
neutral corner.

"Now look here," said Burk, "you say people have seen things. All right. Maybe some of them have seen
things—weather balloons, shadows, meteors maybe. But space ships? Nonsense."

"No nonsense at all. I've seen pictures. And some of the reports are from airline pilots and people like that, who
are not fooled by balloons or meteors. They have seen ships, I tell you, ships from outer space. And they are
observing us."

"Drivel!"

"It is not!"

"It's drivel. Now look, Fred. You too, Johnny, if you're awake over there. How long have they been reporting
these things? For years. Ever since World War II.

"All right. Ever since the war, at least. So. Suppose they were space ships? Whoever was in them must be way
ahead of us technically. So why don't they land? Why don't they approach us?"

Fred shrugged. "How would I know? They probably have their reasons. Maybe they figure we aren't worth any
closer contact."

"Hah! Nonsense. The reason we don't see these space people, Fred my boy, admit it, is because there aren't any.
And you know it!"

"I don't know anything of the damned sort. For all any of us know, they might even be all around us right now."

Burk laughed. I smiled, a little sourly, and drained my coffee.

I felt a little warning twinge.

Too much coffee; should have taken milk. I excused myself as the other two ordered up another round.

I left. The conversation was too stupid to listen to. Space creatures all around me, of all things. How wrong can
a man get? There weren't any invaders from space all around me.

I was all around them.

All at once, standing there on the sidewalk outside Perry's Bar, I knew that it was true. Space invaders. The
Earth was invaded—the Earth, hell! I was invaded. I didn't know how I knew, but I knew all right. I should have. I
was in possession of all the information.

I took a cab home to my apartment.

I was upset. I had a right to be upset and I wanted to be alone. Alone? That was a joke!

Well, my cab pulled up in front of my very modest place. I paid the driver, overtipped him—I was really upset--
and ran up the stairs. In the apartment, I hustled to the two by four kitchen and, with unshakable determination, I
poured myself a four-finger snort of scotch.

Then I groaned and poured it down the sink. Unshakable determination is all very well—but when the top of
your head seems to rip loose like a piece of stubborn adhesive coming off a hairy chest and bounces, hard, against
the ceiling, then all you can do is give up. I stumbled out to the front room and slumped down in my easy chair to think.

I'd left the door open and I was sitting in a draft. So I had to--that compulsion--go close the door. Then I sat down to think. Anyway I thought I sat down to think. But, suddenly, my thoughts were not my own. I wasn't producing them; I was receiving them. "Barth! Oh, Land of Barth. Do you read us, oh Barthland? Do you read us?"

I didn't hear that, you understand. It wasn't a voice. It was all thoughts inside my head. But to me they came in terms of words.

I took it calmly. Surprisingly, I was no longer upset--which, as I think it over, was probably more an achievement of internal engineering than personal stability.

"Yeah," I said, "I read you. So who in hell-- a poor choice of expression--"are you? What are you doing here? Answer me that." I didn't have to say it, the thought would have been enough. I knew that. But it made me feel better to speak out.

"We are Barthians, of course. We are your people. We live here."

"Well, you're trespassing on private property! Get out, you hear me? Get out!"

"Now, now, noble Fatherland. Please, do not become upset and unreasonable. We honor you greatly as our home and country. Surely we who were born and raised here have our rights. True, our forefathers who made the great voyage through space settled first here in a frightful wilderness some four generations back. But we are neither pioneers nor immigrants. We are citizens born."

"Invaders! Squatters!"

"Citizens of Barthland."

"Invaded! Good Lord, of all the people in the world, why me? Nothing like this ever happened to anyone. Why did I have to be picked to be a territory--the first man to have queer things living in me?"

"Oh, please, gracious Fatherland! Permit us to correct you. In the day of our fathers, conditions were, we can assure you, chaotic. Many horrible things lived here. Wild beasts and plant growths of the most vicious types were everywhere."

"There were----?"

"What you would call microbes. Bacteria. Fungi. Viruses. Terrible devouring wild creatures everywhere. You were a howling wilderness. Of course, we have cleaned those things up now. Today you are civilized--a fine, healthy individual of your species--and our revered Fatherland. Surely you have noted the vast improvement in your condition!"

"Yes, but-----"

"And we pledge our lives to you, oh Barthland. As patriotic citizens we will defend you to the death. We promise you will never be successfully invaded."

Yeah. Well, that was nice. But already I felt as crowded as a subway train with the power cut out at rush hour.

But there was no room for doubt either. I'd had it. I still did have it; had no chance at all of getting rid of it.

They went on then and told me their story.

As they put it, even if I didn't care for myself I had to think about an entire population and generations yet unborn. Or unburdened, which was the way they did it.

Well, as they said, we had the whole weekend to work out an understanding. Which we did. When we were through, I didn't like it a whole lot better, but at least I could understand it.

It was all a perfectly logical proposition from their point of view--which differed in quite a number of respects from my own. To them it was simply a matter of survival for their race and their culture. To me it was a matter of who or what I was going to be. But then, I had no choice.

According to the Official History I was given, they came from a tiny planet of a small sun. Actually, their sun was itself a planet, still incandescent, distant perhaps like Jupiter from the true sun. Their planet or moon was tiny, wet and warm. And the temperature was constant.

These conditions, naturally, governed their development--and, eventually, mine.

Of course they were very small, about the size of a dysentery amoeba. The individual life span was short as compared to ours but the accelerated pace of their lives balanced it out. In the beginning, something like four of our days was a lifetime. So they lived, grew, developed, evolved. They learned to communicate. They became civilized-
far more so than we have, according to them. And I guess that was true. They were even able to extend their life span to something like two months.

"And to what," I inquired--but without much fire, I'm afraid; I was losing fight--"to what am I indebted for this intrusion?"

"Necessity."

It was, to them. Their sun had begun to cool. It was their eviction notice.

They had to move or adapt themselves to immeasurably harsher conditions; and they had become so highly developed, so specialized, that change of that sort would have been difficult if not impossible. And they didn't want to change, anyway. They liked themselves as they were.

The only other thing was to escape. They had to work for flight through space. And they succeeded.

There were planets nearer to them than Earth. But these were enormous worlds to them, and the conditions were intolerably harsh. They found one planet with conditions much like those on Earth a few million years back. It was a jungle world, dominated by giant reptiles--which were of no use to the folk. But there were a few, small, struggling, warm-blooded animals. Small to us, that is--they were county size to the folk.

Some genius had a great inspiration. While the environment of the planet itself was impossibly harsh and hostile, the conditions inside these warm little animals were highly suitable!

It seemed to be the solution to their problem of survival. Small, trial colonies were established. Communication with the space ships from home was achieved.

The experiment was a success.

The trouble was that each colony's existence depended on the life of the host. When the animal died, the colony died.

Life on the planet was savage. New colonies would, of course, be passed from individual to individual and generation to generation of the host species. But the inevitable toll of attrition from the violent deaths of the animals appalled this gentle race. And there was nothing they could do about it. They could give protection against disease, but they could not control the hosts. Their scientists figured that, if they could find a form of life having conscious power of reason, they would be able to establish communication and a measure of control. But it was not possible where only instinct existed.

They went ahead because they had no choice. Their only chance was to establish their colonies, accepting the certainty of the slaughter of hundreds upon hundreds of entire communities--and hoping that, with their help, evolution on the planet would eventually produce a better host organism. Even of this they were by no means sure. It was a hope. For all they could know, the struggling mammalian life might well be doomed to extermination by the giant reptiles.

They took the gamble. Hundreds of colonies were planted.

They did it but they weren't satisfied with it. So, back on the dying home moon, survivors continued to work. Before the end came they made one more desperate bid for race survival.

They built interstellar ships to be launched on possibly endless journeys into space. A nucleus of select individuals in a spore-like form of suspended animation was placed on each ship. Ships were launched in pairs, with automatic controls to be activated when they entered into the radius of attraction of a sun. Should the sun have planets such as their own home world--or Earth type--the ships would be guided there. In the case of an Earth type planet having intelligent life, they would----

They would do just what my damned "meteor" had done.

They would home in on an individual, "explode," penetrate--and set up heavy housekeeping on a permanent basis. They did. Lovely. Oh, joy!

Well. We would all like to see the Garden of Eden; but being it is something quite else again.

Me, a colony!

My--uh--population had no idea where they were in relation to their original home, or how long they had traveled through space. They did hope that someplace on Earth their companion ship had established another settlement. But they didn't know. So far on our world, with its masses of powerful electrical impulses, plus those of our own brains, they had found distance communication impossible.

"Well, look, fellows," I said. "Look here now. This is a noble, inspiring story. The heroic struggle of your--uh--people to survive, overcoming all odds and stuff, it's wonderful! And I admire you for it, indeed I do. But--what about me?"

"You, Great Land of Barth, are our beloved home and fatherland for many, many generations to come. You are the mighty base from which we can spread over this enormous planet."

"That's you. What I mean is, what about me?"

"Oh? But there is no conflict. Your interests are our interests."
That was how they looked at it. Sincerely. As they said, they weren't ruthless conquerors. They only wanted to get along.

And all they wanted for me were such fine things as good health, long life, contentment. Contentment, sure. Continued irritation—a sour disposition resulting in excess flow of bile—did not provide just the sort of environment in which they cared to bring up the kiddies. Smoking? No. It wasn't healthy. Alcohol? Well, they were willing to declare a national holiday now and then. Within reason.

Which, as I already knew, meant two to four shots once or twice a week.

Sex? Themselves, they didn't have any. "But," they told me with an attitude of broad tolerance, "we want to be fair. We will not interfere with you in this matter—other than to assist you in the use of sound judgment in the selection of a partner."

But I shouldn't feel that any of this was in any way real restrictive. It was merely practical common sense.

For observing it I would get their valuable advice and assistance in all phases of my life. I would enjoy—or have, anyway—perfect health. My life, if that's what it was, would be extended by better than 100 years. "You are fortunate," they pointed out, a little smugly I thought, "that we, unlike your race, are conservationists in the truest sense. Far from despoiling our homeland and laying waste its resources and natural scenic wonders, we will improve it."

I had to be careful because, as they explained it, even a small nick with a razor might wipe out an entire suburban family.

"But fellows! I want to live my own life."

"Come now. Please remember that you are not alone now."

"Aw, fellows. Look, I'll get a dog, lots of dogs—fine purebreds, not mongrels like me. The finest. I'll pamper them. They'll live like kings.... Wouldn't you consider moving?"

"Out of the question."

"An elephant then? Think of the space, the room for the kids to play—-

"Never."

"Damn it! Take me to--no, I mean let me talk to your leader."

That got me no place. It seemed I was already talking to their highest government councils. All of my suggestions were considered, debated, voted on—and rejected.

They were democratic, they said. They counted my vote in favor; but that was just one vote. Rather a small minority.

As I suppose I should have figured, my thoughts were coming through over a period that was, to them, equal to weeks. They recorded them, accelerated them, broadcast them all around, held elections and recorded replies to be played back to me at my own slow tempo by the time I had a new thought ready. No, they wouldn't take time to let me count the votes. And there is where you might say I lost my self control.

"Damn it!" I said. Or shouted. "I won't have it! I won't put up with it. I'll--uh--I'll get us all dead drunk. I'll take dope! I'll go out and get a shot of penicillin and--"

I didn't do a damned thing. I couldn't.

Their control of my actions was just as complete as they wanted to make it. While they didn't exercise it all the time, they made the rules. According to them, they could have controlled my thoughts too if they had wanted to. They didn't because they felt that wouldn't be democratic. Actually, I suppose they were pretty fair and reasonable—from their point of view. Certainly it could have been a lot worse.

III

I wasn't as bad off as old Faust and his deal with the devil. My soul was still my own. But my body was community property—and I couldn't, by God, so much as bite my own tongue without feeling like a bloody murderer—and being made to suffer for it, too.

Perhaps you don't think biting your tongue is any great privilege to have to give up. Maybe not. But, no matter how you figure, you've got to admit the situation was—well—confining.

And it lasted for over nine years.

Nine miserable years of semi-slavery? Well, no. I couldn't honestly say that it was that bad. There were all the restrictions and limitations, but also there was my perfect health; and what you might call a sort of a sense of inner well-being. Added to that, there was my sensationally successful career. And the money.

All at once, almost anything I undertook to do was sensationally successful. I wrote, in several different styles and fields and under a number of different names; I was terrific. My painting was the talk of the art world. "Superb," said the critics. "An astonishing other-worldly quality." How right they were—even if they didn't know why. I patented a few little inventions, just for fun; and I invested. The money poured in so fast I couldn't count it. I hired people to count it, and to help guide it through the tax loopholes—although there I was able to give them a few
sneaky little ideas that even our sharpest tax lawyers hadn't worked out.

Of course the catch in all that was that, actually, I was not so much a rich, brilliant, successful man. I was a booming, prosperous nation.

The satisfaction I could take in all my success was limited by my knowledge that it was a group effort. How could I help being successful? I had a very fair part of the resources of a society substantially ahead of our own working for me. As for knowledge of our world, they didn't just know everything I did. They knew everything I ever had known--or seen, heard, read, dreamed or thought of. They could dig up anything, explore it, expand it and use it in ways I couldn't have worked out in a thousand years. Sure, I was successful. I did stay out of sports--too dangerous; entertainment--didn't lend itself too well to the group approach; and music--they had never developed or used sound, and we agreed not to go into it. As I figured it, music in the soul may be very beautiful; but a full-size symphony in a sinus I could do without.

So I had success. And there was another thing I had too. Company.

Privacy? No, I had less privacy than any man who ever lived, although I admit that my people, as long as I obeyed the rules, were never pushy or intrusive. They didn't come barging into my thoughts unless I invited them. But they were always ready. And if those nine years were less than perfect, at least I was never lonesome. Success, with me, was not a lonely thing.

And there were women.

Yes, there were women. And finally, at the end of it, there was a woman--and that was it.

As they had explained it, they were prepared to be tolerant about my--ah--relations with women as long as I was "reasonable" in my selection. Come to find out, they were prepared to be not just tolerant but insistent--and very selective.

First there was Helga.

Helga was Uncle John's secretary, a great big, healthy, rosy-cheeked, blonde Swedish girl, terrific if you liked the type. Me, I hadn't ever made a move in her direction, partly because she was so close to Uncle John, but mostly because my tastes always ran to the smaller types. But tastes can be changed.

Ten days after that first conversation with my people I'd already cleared something like $50,000 in a few speculations in the commodity market. I was feeling a little moody in spite of it, and I decided to quit my job. So I went up that afternoon to Uncle John's office to tell him.

Uncle John was out. Helga was in. There she was, five foot eleven of big, bouncy, blonde smorgasbord. Wow! Before, I'd seen Helga a hundred times, looked with mild admiration but not one real ripple inside. And now, all at once, wow! That was my people, of course, manipulating glands, thoughts, feelings. "Wow!" it was.

First things first. "Helga, Doll! Ah! Where's Uncle John?"

"Johnny! That's the first time you ever called me--hm-m--Mr. Barth has gone for the day ... Johnny."

She hadn't even looked at me before. My--uh--government was growing more powerful. It was establishing outside spheres of influence. Of course, at the time, I didn't take the trouble to analyze the situation; I just went to work on it.

As they say, it is nice work if you can get it.

I could get it.

It was a good thing Uncle John didn't come bustling back after something he'd forgotten that afternoon.

I didn't get around to quitting my job that afternoon. Later on that evening, I took her home. She wanted me to come in and meet her parents, yet! But I begged off that--and then she came up with a snapper. "But we will be married, Johnny darling. Won't we? Real soon!"

"Uh," I said, making a quick mental plane reservation for Rio, "sure, Doll. Sure we will." I broke away right quick after that. There was a problem I wanted to get a little advice on.

What I did get, actually, was a nasty shock.

Back in my apartment--my big, new, plush apartment--I sat down to go over the thing with the Department of the Interior. The enthusiastic response I got surprised me. "Magnificent," was the word. "Superb. Great!"

Well, I thought myself that I had turned in a pretty outstanding performance, but I hadn't expected such applause. "It is a first step, a splendid beginning! A fully equipped, well-armed expedition will have the place settled, under cultivation and reasonably civilized inside of a day or two, your time. It will be simple for them. So much more so than in your case--since we now know precisely what to expect."

I was truly shocked. I felt guilty. "No!" I said. "Oh, no! What a thing to do. You can't!"

"Now, now. Gently," they said. "What, after all, oh Fatherland, might be the perfectly natural consequences of your own act?"

"What? You mean under other--that is----"

"Exactly. You could very well have implanted a new life in her, which is all that we have done. Why should
our doing so disturb you?"

Well, it did disturb me. But then, as they pointed out, they could have developed less pleasant methods of spreading colonies. They had merely decided that this approach would be the surest and simplest.

"Well, maybe," I told them, "but it still seems kind of sneaky to me. Besides, if you'd left it to me, I'd certainly never have picked a great big ox like Helga. And now she says she's going to marry me, too!"

"You do not wish this? We understand. Do not be concerned. We will--ah--send instructions to our people the next time. She will change her feelings about this."

She dropped the marriage bit completely.

We had what you might call an idyllic association, in spite of her being such a big, husky model--a fact which never bothered me when I was with her. "She is happy," I was assured, "very happy." She seemed pleased and contented enough, even if she developed, I thought, a sort of an inward look about her. She and I never discussed our--uh--people. We had a fast whirl for a couple of weeks. And then I'd quit my job with Uncle John, and we sort of drifted apart.

Next thing I heard of her, she married Uncle John.

Well. I have my doubts about how faithful a wife she was to him, but certainly she seemed to make him happy. And my government assured me Uncle John was not colonized. "Too late," they said. "He is too old to be worth the risk of settling." But they respected my scruples about my uncle's wife and direct communication with Helgaland was broken off.

But there were others.

IV

For the next nine years--things came easy for me. I suppose the restrictions, the lack of freedom should have made me a lot more dissatisfied than I was. I know, though they didn't say so, that my people did a little manipulating of my moods by jiggering the glands and hormones or something. It must have been that with the women.

I know that after Helga I felt guilty about the whole thing. I wouldn't do it again. But then one afternoon I was painting that big amazon of a model and--Wow!

I couldn't help it. So, actually, I don't feel I should be blamed too much if, after the first couple of times, I quit trying to desert, so to speak.

And time went by, although you wouldn't have guessed it to look at me. I didn't age. My health was perfect. Well, there were a couple of very light headaches and a touch of fever, but that was only politics.

There were a couple of pretty tight elections which, of course, I followed fairly closely. After all, I had my vote, along with everyone else and I didn't want to waste it--even though, really, the political parties were pretty much the same and the elections were more questions of personality than anything else.

Then one afternoon I went to my broker's office to shift around a few investments according to plans worked out the night before. I gave my instructions. Old man Henry Schnable checked over the notes he had made.

"Now that's a funny thing," he said.

"You think I'm making a mistake?"

"Oh, no. You never have yet, so I don't suppose you are now. The funny thing is that your moves here are almost exactly the same as those another very unusual customer of mine gave me over the phone not an hour ago."

"Oh?" There was nothing very interesting about that. But, oddly enough, I was very interested.

"Yes. Miss Julia Reede. Only a child really, 21, but a brilliant girl. Possibly a genius. She comes from some little town up in the mountains. She has been in town here for just the past six months and her investments--well! Now I come to think about it, I believe they have very closely paralleled yours all along the line. Fabulously successful. You advising her?"

"Never heard of the girl."

"Well, you really should meet her, Mr. Barth. You two have so much in common, and such lovely investments. Why don't you wait around? Miss Reede is coming in to sign some papers this afternoon. You two should know each other."

He was right. We should know each other. I could feel it.

"Well, Henry," I said, "perhaps I will wait. I've got nothing else to do this afternoon."

That was a lie. I had plenty of things to do, including a date with the captain of a visiting women's track team from Finland. Strangely, my people and I were in full agreement on standing up the chesty Finn, let the javelins fall where they may.

Henry was surprised too. "You are going to wait for her? Uh. Well now, Mr. Barth, your reputation--ah--that is, she's only a child, you know, from the country."

The buzzer on his desk sounded. His secretary spoke up on the intercom. "Miss Reede is here."
Miss Reede came right on in the door without waiting for a further invitation. We stood there gaping at each other. She was small, about 5’2” maybe, with short, black, curly hair, surface-cool green eyes with fire underneath, fresh, freckled nose, slim figure. Boyish? No. Not boyish.

I stared, taking in every little detail. Every little detail was perfect and—well, I can't begin to describe it. That was for me. I could feel it all through me, she was what I had been waiting for, dreaming of.

I made a quick call on the inside switchboard, determined to fight to override the veto I was sure was coming. I called.

No answer.

For the first time, I got no regular answer. Of course, by now I always had a kind of a sense or feeling of what was going on. This time there was a feeling of a celebration, rejoicing, everybody on a holiday. Which was exactly the way I felt as I looked at the girl. No objections? Then why ask questions?

"Julia," old Henry Schnable was saying, "this is Mr. John Barth. John, this is--John! John, remember----"

I had reached out and taken the girl's hand. I tucked her arm in mine and she looked up at me with the light, the fire in the green depths swimming toward the surface. I didn't know what she saw in me—neither of us knew then—but the light was there, glowing. We walked together out of Henry Schnable's office.

"John! Julia, your papers! You have to sign----"

Business? We had business elsewhere, she and I.

"Where?" I asked her in the elevator. It was the first word either of us had spoken.

"My apartment," she said in a voice like a husky torch song. "It's close. The girl who rooms with me is spending the week back home with her folks. The show she was in closed. We can be alone."

We could. Five minutes in a cab and we were. I never experienced anything remotely like it in all my life. I never will again.

And then there was the time afterwards, and then we knew.

It was late afternoon, turning to dusk. She lifted up on one elbow and half turned away from me to switch on the bedside lamp. The light came on and I looked down at her, lovingly, admiringly. Idly, I started to ask her, "How did you get those little scars on your leg there and ... those little scars? Like buckshot! Julia! Once, along about ten years ago—you must have been a little girl then—in the mountains—sure. You were hit by a meteor, weren't you??"

She turned and stared at me. I pointed at my own little pockmark scars.

"A meteor—about ten years ago!"

"Oh!"

"I knew it. You were."

"'Some damn fool, crazy hunter,' was what Pop said. He thought it really was buckshot. So did I, at first. We all did. Of course about six months later I found out what it was but we—my little people and I—agreed there was no sense in my telling anyone. But you know."

It was the other ship. There were two in this sector, each controlled to colonize a person. My own group always hoped and believed the other ship might have landed safely. And now they knew.

We lay there, she and I, and we both checked internal communications. They were confused, not clear and precise as usual. It was a holiday in full swing. The glorious reunion! No one was working. No one was willing to put in a lot of time at the communications center talking to Julia and me. They were too busy talking to each other. I was right. The other ship.

Of course, since the other ship's landfall had been a little girl then, the early movements of the group had been restricted. Expansion was delayed. She grew up. She came to the city. Then—well, I didn't have to think about that.

We looked at each other, Julia and I. A doll she was in the first place and a doll she still was. And then on top of that was the feeling of community, of closeness coming from our people. There was a sympathy. The two of us were in the same fix. And it may be that there was a certain sense of jealousy and resentment too—like the feeling, say, between North and South America. How did we feel?

"I feel like a drink."

We said it together and laughed. Then we got up and got the drinks. I was glad to find that Julia's absent roommate, an actress, had a pretty fair bar stock.

We had a drink. We had another. And a third.

Maybe nobody at all was manning the inner duty stations. Or maybe they were visiting back and forth, both populations in a holiday mood. They figured this was a once in a millennium celebration and, for once, the limits were off. Even alcohol was welcome. That's a line of thought that kills plenty of people every day out on the highway.

We had a couple more in a reckless toast. I kissed Julia. She kissed me. Then we had some more drinks. Naturally it hit us hard; we weren't used to it. But still we didn't stop drinking. The limits were off for the first
time. Probably it would never happen again. This was our chance of a lifetime and there was a sort of desperation in it. We kept on drinking.

"Woosh," I said, finally, "wow. Let's have one more, wha' say? One more them--an' one more those."

She giggled. "Aroun' an aroun', whoop, whoop! Dizzy. Woozy. Oughta have cup coffee."


"Can-not! Can-not take pill. Won' lemme. 'Gains talla rules."

"Can."

"Can-not."


Clinging to each other, we stumbled to the bathroom. Pills? The roommate must have been a real hypochondriac. She had rows and batteries of pills. I knocked a bottle off the cabinet shelf. Aspirin? Sure, fancy aspirin. Blue, special. I took a couple.

"Apsirin. See? Easy."

Her mouth made a little, red, round "O" of wonder. She took a couple.

"Gosh! Firs' time I c'd ever take a pill."

"Good. Have 'nother?"

It was crazy, sure. The two of us were drunk. But it was more than that. We were like a couple of wild, irresponsible kids, out of control and running wild through the pill boxes. We reeled around the bathroom, sampling pills and laughing.

"Here's nice bottla red ones."

There was a nice bottle of red ones. I fumbled the top off the bottle and spilled the bright red pills bouncing across the white tile bathroom floor. We dropped to our knees after them, after the red pills, the red dots, the red, fiery moons, spinning suddenly, whirling, twirling, racing across the white floor. And then it got dark. Dark, and darker and even the red, red moons faded away.

Some eons later, light began to come back and the red moons, dim now and pallid, whirled languidly across a white ceiling.

"Suicide pact?"

"Yes, Mr. Barth. Why couldn't you have settled for just one simple poison, hm-m? The lab has been swearing at you all day."

"Uh?"

"Yes. At what we pumped from your stomach. And found in the girl's. Liquor, lots of that--but then, why aspirin? Barbiturates we expect. Roach pellets are not unusual. But aureomycin? Tranquilizers? Bufferin? Vitamin B complex, vitamin C--and, finally, half a dozen highly questionable contraceptive pills? Good Lord, man!"

"It was an accident. The girl--Julia----?"

"You are lucky. She wasn't."

"Dead?"

"Yes, Mr. Barth. She is dead."

"Doctor, listen to me! It was an accident, I swear. We didn't know what we were doing. We were, well, celebrating."

"In the medicine cabinet, Mr. Barth? Queer place to be celebrating! Well, Mr. Barth, you must rest now. You have been through a lot. It was a near thing. The police will be in to see you later."

With this kindly word the doctor and his silently disapproving nurse filed out of the room.


There was only an emptiness. It was a hollow, aching sensation. It seemed to me I could hear my questions echoing inside me with a lonely sound.

I was alone. For the first time in nearly ten years, I was truly alone, with no one to turn to.
They were gone! At last, after all these years, they were gone. I was free again, truly free. It was glorious to be free--wasn't it?
The sheer joy of the thing brought a tightness to my throat, and I sniffled. I sniffled again. My nose was stuffy. The tightness in my throat grew tighter and became a pain.
I sneezed.
Was this joy--or a cold coming on? I shifted uneasily on the hospital bed and scratched at an itch on my left hip. Ouch! It was a pimple. My head ached. My throat hurt. I itched. Julia was dead. The police were coming. I was alone. What should I do?
"Nurse!" I shouted at the top of my voice. "Nurse, come here. I want to send a wire. Rush. Urgent. To my aunt, Mrs. Helga Barth, the address is in my wallet. Say, 'Helga. Am desperately ill, repeat, ill. Please come at once. I must have help--from you.'"
She'll come. I know she will. They've got to let her. It was an accident, I swear, and I'm not too old. I'm still in wonderful shape, beautifully kept up.
But I feel awful.
Well--how do you suppose New England would feel today, if suddenly all of its inhabitants died?

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**Contents**

THE JUNKMAKERS
By Albert Teichner

I

Wendell Hart had drifted, rather than plunged, into the underground movement. Later, discussing it with other members of the Savers' Conspiracy, he found they had experienced the same slow, almost casual awakening. His own, though, had come at a more appropriate time, just a few weeks before the Great Ritual Sacrifice.

The Sacrifice took place only once a decade, on High Holy Day at dawn of the spring equinox. For days prior to it joyous throngs of workers helped assemble old vehicles, machine tools and computers in the public squares, crowning each pile with used, disconnected robots. In the evening of the Day they proudly made their private heaps on the neat green lawns of their homes. These traditionally consisted of household utensils, electric heaters, air conditioners and the family servant.

The wealthiest--considered particularly blessed--even had two or three automatic servants beyond the public contribution, which they destroyed in private. Their more average neighbors crowded into their gardens for the awesome festivities. The next morning everyone could return to work, renewed by the knowledge that the Festival of Acute Shortages would be with them for months.

Like everyone else, Wendell had felt his sluggish pulse gaining new life as the time drew nearer.

A cybernetics engineer and machine tender, he was down to ten hours a week of work. Many others in the luxury-gorged economy had even smaller shares of the purposeful activities that remained. At night he dreamed of the slagger moving from house to house as it burned, melted and then evaporated each group of junked labor-blocking devices. He even had glorious daydreams about it. Walking down the park side of his home block, he was liable to lose all contact with the outside world and peer through the mind's eye alone at the climactic destruction.

Why, he sometimes wondered, are all these things so necessary to our resurrection?

Marie had the right answer for him, the one she had learned by rote in early childhood: "All life moves in cycles. Creation and progress must be preceded by destruction. In ancient times that meant we had to destroy each other; but for the past century our inherent need for negative moments has been sublimated--that's the word the news broadcasts use--into proper destruction." His wife smiled. "I'm only giving the moral reason, of course. The practical one's obvious."

Obvious it was, he had to concede. Men needed to work, not out of economic necessity any more but for the sake of work itself. Still a man had to wonder....

* * * * *

He had begun to visit the Public Library Archives, poring over musty references that always led to maddeningly frustrating dead ends. For the past century nothing really informative seemed to have been written on the subject.

"You must have government authorization," the librarian explained when he asked for older references. Which, naturally, made him add a little suspicion to his already large dose of wonder.
"You're tampering with something dangerous," Marie warned. "It would make more sense for you to take long-sleep pills until the work cycle picks up."

"I will get to see those early references," he said through clenched teeth.

He did.

All he had needed to say at the library was that his work in sociology required investigation of some twentieth century files. The librarian, a tall, gaunt man, had given him a speculative glance. "Of course, you don't have government clearance.... But we get so few inquiries in sociology that I'm willing to offer a little encouragement." He sighed. "Don't get many inquiries altogether. Most people just can't stand reading. You might be interested to know this--one of the best headings to research in sociology is Conspicuous consumption."

Then it was Wendell's turn to glance speculatively. The older man, around a healthy hundred and twenty-five, had a look of earnest dedication about him that commanded respect as well as confidence.

"Conspicuous consumption? An odd combination of words. Never heard of that before. I will look it up."

The librarian was nervous as he led his visitor into a reference booth. "That's about all the help I can offer. If anything comes up, just ring for me. Burnett's the name. Uh--you won't mention I put you on the file without authorization, I hope."

"Certainly not."

As soon as he was alone he typed Conspicuous consumption into the query machine.

It started grinding out long bibliographical sheets as well as cross-references to Obsolescence, Natural; Obsolescence, Technological; Obsolescence, Planned, plus even odder items such as Waste-making, Art of and Production, Stimulated velocity of. How did such disparate subjects tie in with each other?

* * * * *

By the end of the afternoon he began to see, if only dimly, to what the unending stream of words on the viewer pointed.

For centuries ruling classes had made a habit of conspicuously wasting goods and services that were necessities for the mass of men. It was the final and highest symbol of social power. By the time of Louis XIV the phenomenon had reached its first peak. The second came in the twentieth century when mass production permitted millions to devote their lives to the acquisition and waste of non-essentials. Hart's twenty-second century sensibilities were repelled by the examples given. He shuddered at the thought of such anti-social behavior.

But a parallel development was more appealingly positive in its implications. As the technological revolution speeded up, devices were superseded as soon as produced. The whole last half of the 1900's was filled with instances where the drawing board kept outstripping the assembly line.

Hart remembered this last change from early school days but the later, final development was completely new and shocking to him. Advertising had pressured more and more people to replace goods before they wore out with other goods that were, essentially, no improvement on their predecessors! Eventually just the word "NEW" was enough to trigger buying panics.

There had been growing awareness of what was happening, even sporadic resistance to it by such varied ideologies as Conservative Thrift, Asocial Beatnikism and Radical Inquiry. But, strangely enough, very few people had cared. Indeed, anything that diminished consumption was viewed as dangerously subversive.

"And rightly so!" was his first, instinctive reaction. His second, reasoned one, though, was less certain.

The contradiction started to give him a headache. He hurried from the scanning room, overtaxed eyes blinking at the rediscovery of daylight.

Burnett walked him to the door. "Not feeling well?" he inquired.

"I'll be all right. I just need a few days real work." He stopped. "No, that's not why. I'm confused. I've been reading crazy things about obsolescence. They used to have strange reasons for it. Why, some people even said replacements were not always improvements and were unnecessary!"

Burnett could not completely hide his pleasure. "You've been getting into rather deep stuff."

"Deep--or nonsensical!"

"True. True. Come back tomorrow and read some more."

"Maybe I will." But he was happy to get away from the library building.

Marie was horrified when he told her that evening about his studies. "Don't go back there," she pleaded. "It's dangerous. It's subversive! How could people say such awful things? You remember that Mr. Johnson around the corner? He seemed such a nice man, too, until they arrested him without giving a reason ... and how messed up he was when he got out last year. I'll bet that kind of talk explains the whole thing. It's crazy. Everyone knows items start wearing out and they have to be replaced."

"I realise that, honey, but it's interesting to speculate. Don't we have guaranteed freedom of thought?"

She threw up her hands as if dealing with a child. "Naturally we have freedom of thought. But you should have
the right thoughts, shouldn't you? Wendell, promise me you won't go back to that library."
"Well--"
"Reading's a very risky thing anyway." Her eyes were saucer-round with fright. "Please, darling. Promise."
"Sure, you're right, honey. I promise."

* * * * *

He meant it when he said it. But that night, tossing from side to side, he felt less certain. In the morning, as he went out, Marie asked him where he was going.

"I want to observe the preparations for the Preliminary Rites."

"Now that," she grinned, "is what I call healthy thinking."
For a while he did stand around the Central Plaza along with thousands of other idlers, watching the robot dump trucks assemble the piles of discarded equipment. The crowd cheered loudly as an enormous crane was knocked over on its side.

"There's fifty millions worth out there!" a bystander exulted. "It's going to be the biggest Preliminary I've ever seen."

"It certainly will be!" he said, catching a little of the other man's enthusiasm despite his previous doubts. Preliminary Rites were part of the emotion-stoking that preceded the Highest Holy Day. Each Rite was greater and more destructive than those that had gone before. As tokens of happy loyalty, viewers threw hats and watches and stickpins onto the pile just prior to the entry of the slagger. What better way could be found for each man to manifest his common humanity?

After a while doubt started assailing him again, and Hart found himself returning almost against his will to the Library Building. Burnett greeted him cordially. "To-day's visit is completely legal," he said. "Anyone doing olden time research is automatically authorized if he has been here before."

"I hope my thought can be as legal," Hart blurted out. "Well--that was just a joke."

"Oh, I can recognize a joke when I hear one, my friend."

Hart went to his booth, feeling the man's eyes measuring him more intently than ever. It was almost a welcome relief to start reading the reference scanner once more.

But not for long. As the wider pattern unfolded, his anxiety state intensified. It was becoming perfectly obvious that many, many replacements used to be made long before they were needed. And it was still true. I should not be thinking such thoughts, he told himself, I should be outside in the Plaza, being normal and human.

But he could see how it had come about, step by step. First there had been pressure from the ruling echelons, many of whose members only maintained their status through excessive production. Then, much more important, there had been the willful blindness of the masses who wanted to keep their cozy, familiar treadmills going.

He slammed down the off button and went out to the librarian's desk. "Do people want to work all the time, for the sake of work alone?"

The man's face was stolidly blank except for his brown eyes which burned like a zealot's. Fascinated by them, Hart agreed. It would be best to return anyway. Some of the bystanders had looked too curiously at him when he had left. Who would willingly leave a Rite when it was approaching its climax?

II

The Plaza was now thronged and the sacrificial pile towered over a hundred feet in the cleared center area. Then, as the first collective Ah! arose, a giant slagger lumbered in from the east, the direction prescribed for such commencements. Long polarity arms glided smoothly out of the central mechanism and reached the length for Total Destruction.

"That's the automatic setting," parents explained to their children.

"When?" the children demanded eagerly.
"Any moment now."
The unforeseen occurred.
There was a rumbling from inside the pile and a huge jagged patchwork of metal shot out, smashing both arms.
The slagger teetered, swaying more and more violently from side to side until it collapsed on its side. The rumbling grew.
And then the pile, like a mechanical cancer, ripped the slagger apart and then absorbed it.
The panicking crowd fell back. Somewhere a child began crying, provoking more hubbub. "Sabotage!" people were crying. "Let's get away!"
Nothing like this had ever happened before. But Hart knew instantly what had caused it. Some high-level servo mechanisms had not been thoroughly disconnected. They had repaired their damages, then imposed their patterns on the material at hand.
A second slagger came rushing into the square. It discharged immediately; and the pile finally collapsed and disintegrated as it was supposed to.
The crowd was too shocked to feel the triumph it had come for, but Hart could not share their horror. Burnett eyed him. "Better look indignant," he said. "They'll be out for blood. Somebody must have sabotaged the setup."
"Catch the culprits!" he shouted, joining the crowd around him. "Stop anti-social acts!"
"Stop anti-social acts!" roared Burnett; and, in a whisper: "Hart, let's get out of here."
As they pushed their way through the milling crowd, a loudspeaker boomed out: "Return home in peace. The instincts of the people are good. Healthy destruction forever! The criminals will be tracked down ... if they exist."
"A terrible thing, friend," a woman said to them.
"Terrible, friend," Burnett agreed. "Smash the anti-social elements without mercy!"
Three children were clustered together, crying. "I wanted to set the right example for them," said the father to anyone who would listen. "They'll never get over this!"
Hart tried to console them. "Next week is High Holy Day," he said, but the bawling only increased.
The two men finally reached a side avenue where the crowd was thinner. "Come with me," Burnett ordered, "I want you to meet some people."
He sounded as if he were instituting military discipline but Hart, still dazed, willingly followed. "It wasn't such a terrible thing," he said, listening to the distant uproar. "Why don't they shut up!"
"They will--eventually." Burnett marched straight ahead and looked fixedly in the same direction.
"The thing could have gobbled up the city if there hadn't been a second slagger!" said a lone passerby.
"Nonsense," Burnett muttered under his breath. "You know that, Hart. Any self-regulating mechanism reaches a check limit sooner than that."
"It has to."
They turned into a large building and went up to the fiftieth floor. "My apartment," said Burnett as he opened the door.
There were about fifteen people in the large living room. They rose, smiling, to greet their host. "Let's save the self-congratulations for later," snapped Burnett. "These were merely our own preliminaries. We're not out of the woods yet. This, ladies and gentlemen, is our newest recruit. He has seen the light. I have fed him basic data and I'm sure we're not making a mistake with him."
Hart was about to demand what was going on when a short man with eyes as intense as Burnett's proposed a toast to "the fiasco in the Plaza." Everyone joined in and he did not have to ask.
"Burnett, I don't quite understand why I am here but aren't you taking a chance with me?"
"Not at all. I've followed your reactions since your first visit to the library. Others here have also--when you were completely unaware of being observed. The gradual shift in viewpoint is familiar to us. We've all been through it. The really important point is that you no longer like the kind of world into which you were born."
"That's true, but no one can change it."
"Miss Wright, time enough for that later," interrupted Burnett. "What we must know now, Mr. Hart, is how much you're willing to do for your new-found convictions? It will be more work than you've ever dreamed possible."
He felt as exhilarated as he did in the months after High Holy Day. "I'm down to under ten hours labor a week. I'd do anything for your group if I could get more work."
Burnett gave him a hearty handshake of congratulation ... but was frowning as he did so. "You're doing the right thing--for the wrong reason. Every member of this group could tell you why. Miss Wright, since you feel like talking, explain the matter."
"Certainly. Mr. Hart, we are engaged in an activity of so-called subversion for a positive reason, not merely to
avoid insufficient work load. Your reason shows you are still being moved by the values that you despise. We want to cut the work-production load on people. We want them to face the problem of leisure, not flee it."

"There's a heart-warming paradox here," Burnett explained. "Every excess eventually undermines itself. Everybody in the movement starts by wanting to act for their beliefs because work appears so attractive for its own sake. I was that way, too, until I studied the dead art of philosophy."

"Well--" Hart sat down, deeply troubled. "Look, I deplore destroying equipment that is still perfectly useful as much as any of you do. But there is a problem. If the destruction were stopped there would be so much leisure people would rot from boredom."

Burnett pounced eagerly on the argument. "Instead they're rotting from artificial work. Boredom is a temporary, if recurring phenomenon of living, not a permanent one. If most men face the difficulty of empty time long enough they find new problems with which to fill that time. That's where philosophy showed me the way. None of its fundamental mysteries can ever be solved but, as you pit yourself against them, your experience and capacity for being alive grows."

"Very nice," Hart grinned, "wanting all men to be philosophers. They never have been."

"You shouldn't have brought him here," growled the short man. "He's not one of us. Now we have a real mess."

"Johnson, I'm leader of this group!" Burnett exploded. "Credit me with a little understanding. All right, Hart, what you say is true. But why? Because most men have always worked too hard to achieve the fruits of curiosity."

"I hate to keep being a spoil-sport, but what does that prove? Some men who had to work as hard as the rest have been interested in things beyond the end of their nose."

They all groaned their disapproval.

"A good point, Hart, but it doesn't prove what you think. It just shows that a minority enjoy innate capacities and environmental variations that make the transition to philosopher easier."

"And you haven't proven anything about the incurious majority."

"This does, though: whenever there was a favorable period the majority who could, as you put it, see beyond the ends of their noses increased. Our era is just the opposite. We are trapped in a vicious circle. Those noses are usually so close to the grindstone that men are afraid to raise their heads. We are breaking that circle!"

"It's a terribly important thing to aim for, Burnett, but--" He brought up another doubt and somebody else answered it immediately.

For the next half hour, as one uncertainty was expressed after another, everybody joined in the answers until inexorable logic forced his surrender.

"All right," he conceded, "I will do anything I can--not to make work for myself, but to help mankind rise above it."

Except for a brief, triumphant glance in Johnson's direction, Burnett gave no further attention to what had happened and plunged immediately into practical matters.

To halt the blind worship of work, the Rites had first to be discredited. And to discredit the Rites, the awe inspired by their infallible performance had to be weakened. The sabotage of the Preliminary had been the first local step in that direction. There had been a few similar, if smaller, episodes, executed by other groups, but they had received as little publicity as possible.

"Johnson, you pulled one so big this time that they can't hide it. Twenty thousand witnesses! When it comes to getting things done you're the best we have!"

The little man grinned. "But you're the one who knows how to pick recruits and organize our concepts. This is how it worked. I re-fed the emptied cryotron memory box of a robot discard with patterns to deal with anything it was likely to encounter in a destruction pile. I kept the absolute-freeze mechanism in working order, but developed a shield that would hide its activity from the best pile detector. He spread a large tissue schematic out on the floor and they all gathered around it to study the details. "Now, the important thing was to have an external element that could resume contact with a wider circuit, which could in turn start meshing with the whole robot mechanism and then through that mechanism into the pile. This little lever made the contact at a pre-fed time."

Miss Wright was enthusiastic. "That contact is half the size of any I've been able to make. It's crucially important," she added to Hart. "A large contact can look suspicious."

While others took miniphotos of the schematic, Hart studied the contact carefully. "I think I can reduce its size by another fifty per cent. Alloys are one of my specialties--when I get a chance to work at them."

"That would be ideal," said Burnett. "Then we could set up many more discarded robots without risk. How long will it take?"

"I can rough it out right now." He scribbled down the necessary formulas and everyone photographed that too.
"Maximum security is now in effect," announced Burnett. "You will destroy your copies as soon as you have transferred them to edible base copies. At the first hint of danger you will consume them. Use home enlargers for study. In no case are you to make permanent blowups that would be difficult to destroy quickly." He considered them sternly. "Remember, you are running a great risk. You're not only opposing the will of the state but the present will of the vast majority of citizens."

"If there are as many other underground groups as you indicate," said Hart, "they should have this information."
"We get it to them," answered Burnett. "I'm going on health leave from my job."
"And what will be your excuse?" Wright demanded anxiously.
"Nervous shock," smiled their leader. "After all, I did see today's events in the Plaza."

When Hart reached home his wife was waiting for him. "Why did you take so long, Wendell. I was worried sick. The radio says anti-socials are turning wild servos loose. How could human beings do such a thing?"
"I was there. I saw it all happen." He frowned. "The crowd was so dense I couldn't get away."
"But what happened? The way the news was broadcast I couldn't understand anything."

He described the situation in great detail and awaited Marie's reaction. It was even more encouraging than he had hoped for. "I understand less than before! How could anything reactivate that rubble? They put everything over five years old into the piles, and the stuff's supposed to be decrepit already. You'd almost think we were destroying wealth before its time, because if those disabled mechanisms reactivated--" She came to a dead halt. "That's madness! Oh, I wish High Holy Day were here already so I could get back to work and stop this empty thinking!"

Her honest face was more painfully distorted than he had ever seen it before, even during the universal pre-Rite doldrums. "Only a few more days to go," he consoled. "Don't worry, honey. Everything's going to be all right. Now I'd like to be alone in the study for a while. I've been through an exhausting time."
"Aren't you going to eat?"

The last word triggered the entry of Eric, the domestic robot, pushing the dinner cart ahead of him. "No food tonight," Hart insisted. The shining metal head nodded its assent and the cart was wheeled out.

"That's not a very humane thing to do," she scolded. "Eric's not going to be serving many more meals--"
"Good grief, Marie, just leave me alone for a while, will you?" He slammed the study door shut, warning himself to display less nervousness in the future as he listened to her pacing outside. Then she went away.

The projector gave him a good-sized wall image to consider. He spent most of the night calculating where he could place tiny self-activators in the "obsolescent" robots that were to be donated by his plant. Then he set up the instruction tapes to make the miniature contacts. Production then would be a simple job, only taking a few minutes, and during a working day there were always many periods longer than that when he was alone on the production floor.

But thinking the matter out without computers was much more difficult. Human beings ordinarily filled their time on a lower abstracting level.

When he unlocked the study door in the morning he was startled to see Marie bustling down the corridor, pushing the food service cart herself. That did not make sense, especially considering last night's statement about Eric.

"I thought you'd want breakfast early," she coughed.
"You didn't have to bother, honey. Eric could have done it."

If she had been prying, the cart might have been a prop to take up as soon as he came out. On the other hand, what could she in her technical ignorance make of such matters anyway?

It was best not to rouse any deeper suspicions by openly noticing her wifely nosiness. At breakfast they pretended nothing had happened, devoting the time to mutually disapproved cousins, but all day long he kept wondering whether ignorant knowledge couldn't be as dangerous as the knowing kind.

The next morning, after a long sleep, he went to the factory for the first of his semi-weekly work periods.

He sat before a huge console, surveying scores of dials, at the end of a machine that was over five hundred yards long. Today it was turning out glass paper the color of watered blood, made only for Ritual publications, packing it in sheets and dispatching them in automatic trucks; but the machine could be adjusted to everything from metal sheeting to plastic felts. At the far end sat another man, diminished by distance, busily tending more dials that could really take care of themselves.

After a while the man went out for a break. Hart ran a hundred yards to a section that was not working. He snapped it into the alloy supply and fed in the tape. In a minute, several dozen tiny contacts came down a chute. He pocketed them and disconnected the section just before his fellow worker reappeared.
The man walked down the floor to him, looking curious.
"Anything the matter?" he asked, hopeful for some break in routine.
"No, just felt like a walk."
"Know what you mean--I feel restless too. Too bad this plant's only two years old. Boy, wouldn't she make a great disintegration!" He grinned, slapping a fender affectionately.
Hart joined in the joke. "Gives us something to look forward to in ten years."
"A good way to look at things," said the other man.
At home he locked the contacts in a desk drawer. Tomorrow he would deliver most of them to Burnett's apartment.

But the next morning an emergency letter came from his group leader, warning him not to appear there. I am going completely underground. I think they may suspect my activities. The dispersion plan must go into effect. You know how to reach Johnson and Wright and they each in turn can get to two others. Good luck!

He had just put the letter in his pocket when Eric announced the arrival of a Rituals Inspector.
The man had nervous close-set eyes and seemed embarrassed by his need to make such a visit. Hart took the offensive as his best defense. "I don't understand this, Inspector," he protested. "You people should be busy with High Holy preparations. Are you losing your taste for work?"
"Now, now, Mr. Hart, that's a very unkind remark. I dislike this nonsense as much as anyone." His square jaw chewed into each word as he opened his scanning box. "It's the anti-social sabotage."
"Do you mean to say I am under suspicion?" Marie was now loitering in the doorway, worse luck.
"Oh, no. Nothing so insulting. This is strictly impersonal. The Scanning Center has picked apartments at complete random and we're to make spot checks."

The eye at one end of the box blinked wickedly, waiting for an information feed. "Now, sir, if you'll pardon me, I'll just take the records from one of those desk drawers--any drawer--and put them in the box." Hart slid open a drawer. "No, sir, I think I'll try the next one. It's regulation not to accept suggestions."

With a hand made deft by practise he scooped out all the sheets and tapes and put them in the box. The scanner's fingers rapidly sorted them past the eye. Hart exhaled, relieved that an innocuous drawer had been selected, and the inspector handed back the material to him. "Well, Inspector, that's that."

"Not quite." The Inspector selected another drawer at the other end of the desk and dumped everything before the scanner. His examination was speeding up and that was not good; he would have time to take more sample readings.

"Now if you'll empty your left pocket--"

* * * * *

"Oh, this is too much!" Marie exploded. "My husband struggles all night on secret work, studying to find ways to stop the anti-socials, and you treat him like one of them!"

"You're working on the problem?" the Inspector said respectfully. "What are you doing?"

Frying pan to fire. Hart preferred the pan and pulled open a drawer. "It's too complicated, too much time needed to explain!"

The Inspector glanced at his watch. "I'm falling behind schedule." He closed up his box. "Sorry, but I have to leave. Heavy time sheet today."

As soon as he was gone, Hart breathed easier. Nothing incriminating would be fed into the Central Scanner.
Marie became apologetic. "I'm sorry I said it, Wendell, but I couldn't keep quiet. All I did last night was peek in once or twice."

He shrugged. "I'm just on a minor project."

"Every bit counts." She shook her head. "Only you have to wonder--I mean, don't think I'm treasuring, but while I was shopping an hour ago a lot of women said you have to think--how come all that obsolescent junk could work so well, after being thoroughly wrecked, too? You almost wonder whether some of it was too good for disintegration."

Wendell pretended to be shocked. "Just a fluke of circumstance. If something like that happened again you'd be right to wonder. But it could not ever happen again."

"Don't get me wrong, Wendell. None of the women attacked anything. It was more like what you just said. They said if it happened again, then you'd have to wonder. But of course it couldn't happen again."

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How well the tables had turned! Not only had Marie's ignorant knowledge proven helpful but she had now given him a positive idea also.

When he met Wright and Johnson at the latter's apartment that evening he explained it to them. "We can propagate 'dangerous' thoughts and yet appear completely loyal. We can set up the reaction to next High Holy Day."

"How?" demanded Johnson. "That's having your cake and eating it."

"Nothing's impossible in the human mind," Wright said. "Let's listen."

"Here's the point. Wherever you go there will be people tsk-tsking about the Preliminary fiasco. Just reassure them, say it meant nothing at all by itself. If it ever happened again, then there would be room for doubt but, of course, it could not happen again!"

Wright smiled. "That's almost feminine in its subtlety."

He smiled back. "My wife inspired it. Don't get nervous--it was unconscious, sheerly by accident."

"Whatever the cause, it's the perfect result," Johnson conceded. "We'll spread it through the net."

"Along with this, I hope." Wendell dumped the contacts on a table top. "It's the smallest size possible. A lot should get by unnoticed. Find cell members who can set up cryotrons with a wide range of instructions to cope with anything in the piles. Some weirdly alive concoctions of 'obsolescent' parts ought to result."

"Some day the world's going to know what you've done for it," said Johnson solemnly.

"That could happen too soon!" Miss Wright's face, honest and open in its horse-like length, broke into a wide grin.

"Amen," said Hart, adding the private hope that Marie, blessed with superior looks, might be able to show as much superior wisdom some day.

* * * * *

The hope was not immediately fulfilled. When he reached home Marie was in a tizzy of excitement. "You're just in time, darling. They just caught three subversives. One of them was a woman," she added as this were compounding an improbability with an impossibility. "They're going to show them."

He gripped his belt tightly. "A woman?"

"That's right. There she is now."

A uniformed officer was gently helping a pale little old woman sit down before the camera, as if she were more an object of pity than of fear. Hart relaxed.

"--caught red-handed with the incriminating papers," shouted an offstage announcer. "Handbills asserting objects declared obsolescent could actually last indefinitely!"

"What do you have to say for yourself?" the officer asked gently. "You must realize, of course, that such irreligious behavior precludes your moving in general society for a long time to come."

"I don't know what came over me," she sobbed in a tired voice. "Curiosity. Yes, curiosity, that's what it was. I saw these sheets of paper in the street and they said we should stop working so hard at compulsory tasks and start working to expand our own interests and personalities."

"Self-contradictory nonsense!" said the voice.

"Yes, I know that. But it made me curious and I took it home to read, and it said our compulsory tasks were artificially manufactured and, if you didn't believe that, look at the pile that reactivated itself the other day." She stopped, reorganizing her thoughts. "Of course, though, that thing in the Plaza was unique, you know. I don't think it could mean a thing... unless it happened a few times. And the fact is it won't ever happen again."

"Well, that much makes very good sense," said Marie. "You said the same thing, Wendell. I don't think that poor woman knew what she was doing--just a dupe for subversive propaganda."

"--a dupe for subversive propaganda," the announcer was saying.

"See, exactly what I said."

"Yes, dear."

How swiftly the decentralized underground was working! Hart could not tell whether the old woman was an active member or just a passive responder, but it did not matter. She was now spreading the seeds for future doubt across the land.

Two old men were brought in and they mumbled the same disconnected story as their sister.

"We have intensively interrogated these prisoners," boomed the announcer, "and know there is nothing more to the rumored anti-social plot than this stupid chatter. Remain vigilant and you have nothing to fear!"

"You are sentenced to five years isolation from general society," said the officer, in a voice dulcet enough to sell advance orders for replacement products that had not yet been made. "Our intention is to protect you from bad influences. Our hope is that others will take your lesson to heart."

"God bless you," said the woman and her brothers joined in effusive thanks.

"Makes me proud to be a human being," Marie said. "I was getting some stupid doubts myself, dear. I must admit it. But that's all past. I can hardly wait for the Highest Holy Day."

"Neither can I," sighed her husband.

III

The next day at noon Eric came to him, functioning on the final set of servo instructions that had been installed in him at the factory of his birth eight years before. He shook hands with the two of them and said: "Now I am
prepared for death."

Marie was tearful. "I will miss you, Eric. If you were only under five years old your span could be extended."

"Everything that happens is right," Eric said impassively.

He clambered on to the operation table, instinctively knowing which flat surface was for him, and, breaking all his major circuits, gave up the ghost that only man could restore to him.

Hart found his wife's grief easy to bear. The day after tomorrow she would join in the general exultation of High Holy Day, with Eric well forgotten. He methodically began smashing the surface of the limbs and torso; the greater the visible damage, the greater the honor redounding to the sacrifice donor. "This will be our gift to the general pile," he said.

"I thought we could keep him for our garden sacrifice," Marie protested meekly. "Most people do."

"But the other way is the greater sacrifice."

There was no reply, because she knew he spoke for the deeper, more moving custom. But suddenly he began to act depressed himself. "I know we say it every ten years, but Eric was really the best companion we ever had." He gestured toward the table. "I want to sit here with him for a while--alone."

"That's carrying things too far, Wendell. A little grief is proper--but this much is actually morbid."

"It's all within my rights."

She tossed her head petulantly. "Well, I've done my share. I can't stand any more. It makes a person think and get depressed. I don't care what you're going to do. I'm going out to enjoy a Preliminary."

"Can't blame you for that," he nodded.

When she had gone he started to work on new instruction tapes for activating the servo-cryotron. Nothing could be surrendered to chance. Every possible circumstance in the pile had to be anticipated. There had to be instructions for action if Eric was crushed below fifty feet of metal, for assembling any kind of scrambled wiring, for adapting all types of parts in its immediate surroundings, for using these parts to absorb parts further away and for timing the operation to the start of the Highest Rite.

Some tapes had been prepared earlier, so it was possible to put everything in the cryotron box before Marie returned, as well as to attach the tiny contact that would reach out from the box until it reached its first external scrap of wire or metal.

"You poor darling," she pouted. "You missed the most wonderful thing! They demolished a whole thirty-story building!"

His blood, atavistically effected, pulsed faster until his new creed came to grips with his old emotions. "They usually don't bother with buildings for the Rites."

"I know--that's what was so wonderful! The State has decided to make this one the biggest Day of all time. We'll have enough work to fill the whole ten years! Everybody was so happy."

"I'm sure they were." He caught himself in mid-sarcasm and said, "I'm sorry I missed it."

"And I'm sorry I've been so selfishly self-centered." She frowned. "I forgot about it, but there were people in the crowd boasting they had been assigned to fight anti-social movements. I had to boast back that my husband had been honored too."

He tensed. "Oh? What did they say to that?"

"Frankly, they laughed."

"I should think so. The Central Scanner didn't pick up anything except a lot of ineffective propaganda. The sabotage business was all hysteria."

"That's just what they said--the assignments were an empty honor." She coldly considered Eric. "I want to wreck him too."

"I've smashed the insides," he said. "You'd better just work the surface."

"That's all I want to do," she answered, starting to scratch traditional marks all over the dead robot. It gave her a full afternoon of happy, busy labor.

* * * * *

The next day a large open truck came around and the street echoed to the appeal for contributions. Festival spirit was running high everywhere and when the neighborhood crowd saw the young robot porters carry Eric out there was a loud cheer of appreciation.

"My husband decided on a major contribution right away," Marie announced to them.

"It's the least we could do," he said modestly.

Many onlookers, swept away by their example, rushed indoors to bring out additional items of sacrifice. But only two others gave up their robots. The rest clung to them for private Holy Night ceremonies. Soon Eric disappeared under the renewed deluge of egg-beaters and washers.

"The best collection I have seen today," said the inspector accompanying the truck. "You people are to be
congratulated for your exceptional patriotism."

"Destroy!" they shouted back joyously. "Make work!"

At dawn the Central Plaza was already crowded and new hordes kept pouring in from outlying areas. Wendell and his wife had been among the first to arrive. They waited, impatient in their separate ways, on the borderline five hundred yards from the ten-story pyre.

Martial music roared from loudspeakers, interrupted by the mellifluous boom of a merchandising announcer:

"New product! Better models! One hundred years of High Holy Days! New! New! NEW!"

"Destroy!" came the returning shout. "Make work! Work! Work!"

All the sounds echoed back and forth until baffled away by the open area across the Plaza, where one large structure had already been destroyed. Three others were slated for collapse today.

"The biggest Holy Day ever," a restless old woman said to Marie. "I've seen all nine of them."

"Eric's in there," Marie chatted back, superficially sad, deeply happy.

"Who?"

"Our house robot."

"Imagine that! Did you hear that?" People gathered round them and cheered. The good-natured jostling continued until someone said: "Five minutes to go!"

Wendell checked his watch. Somewhere in the pile at least one element was coming to life, a metal arm reaching out for brother metal to engulf in its cybernetic sweep.

"They're coming!" A line of six shiny new slaggers came rumbling into the open with military precision. They moved along slowly, prolonging the pleasures of anticipation, then broke rank, each seeking its assigned point around the pile of appliances gathered for destruction.

"The latest improved models," said the loudspeakers. "They will first perform fifteen minutes of automatic maneuvers." The military music resumed and each slagger turned, as if circling a coin, in clanking rhythm to it.

"The three hundred and sixty degree turn. Next, making a box on the Plaza floor...."

The voice stopped, appalled.

* * * * *

An avalanche of metal slid down one side of the pile and the crowd gasped. The downward movement viscously slowed; then the metal, suddenly alive with the capacity to defy gravity, circled upward. Jagged limbs started flailing about.

"Disintegrator attack!" screamed the loudspeakers. "Attack!"

The maneuvers stopped. For one brief moment prior to changeover the Plaza was dead still, except for the deafening rumble in the pile. The slaggers broke the spell, rushing full speed toward the pile, evaporator beams working.

One by one they faltered and were sucked into the destructive pyre.

The crowd fell further back. The whole pile came alive like a mineral octopus. Then the squirming thing collapsed, every makeshift circuit irreparably broken and dead. Everything had been happening too fast for any pronounced reaction to accompany it; but now the world went crazy.

"Stand firm!" pleaded the loudspeakers. "We will get reinforcements as soon as celebrations are finished elsewhere."

A barrage of enormous boos came from the disintegrating mob. "Never again! Fakes! It's finished, done for!"

"Stand firm!"

But the breakup down side avenues continued. "I don't understand," Marie shuddered. "Everything's crazy. We've been deceived, Wendell. Who's been deceiving us?"

"Nobody--unless it's ourselves."

"I don't understand that either," Saucer-eyed she watched a great clump of disgruntled people push past. "I have to think!"

Suddenly, as they came around a corner, they were facing Burnett.

Hart tried to disregard him but the group leader would have none of that. He rushed up to Hart. "Good to see a friendly face. Shocking developments!" His face was grim, but tiny wrinkles at the corners of his eyes betrayed an amusement that could only be discovered by those who looked for it.

"Mr. Burnett," he explained to Marie. "A librarian at the main building. Mr. Burnett, my wife Marie."

"I am most happy to meet you, Mrs. Hart. Have you heard the latest?"

"No, Mr. Burnett."

"The same things have been happening everywhere! They announced it on the radio and they're saying it's due to anti-social elements. Shocking!"

She shook her head stubbornly. "I don't know what to think. Maybe we shouldn't be shocked, maybe we should
be. I just don't know, Mr. Burnett. I came to enjoy myself and look how it's ended." She bravely held back a sob, "Maybe we'd have been better off if we've never heard about High Holy Days!"

Burnett looked about with feigned apprehension. "You have to be careful what you say. The government says there's even talk--subversive handbills--about trying to rehabilitate some of the stuff in the piles."

"The government ought to keep quiet!" she exploded. "They said this couldn't happen. You can't believe anything they say any more. The people decide and the government will have to listen, that's what I say! And I'm a pretty typical person, not one of your intellectual kind. No criticism of present company intended."

"None taken, Mrs. Hart. Our human future," said Burnett, exchanging a grin with his aide, "remains, as it always has really been. Interesting--to say the least!"

END

Contents

HIGH DRAGON BUMP
By Don Thompson

If it took reduction or torch hair, the Cirissins wanted a bump. Hokum, thistle, gluck.

A young and very beautiful girl with golden blond hair and smooth skin the color of creamed sweet potatoes floated in the middle of the windowless metal room into which Wayne Brighton drifted. The girl was not exactly naked, but her few filmy clothes concealed nothing.

Wayne cleared his throat, his apprehension changing rapidly to confusion.

"You are going to reduce me?" he asked.

"The word is seduce, mister," the girl said. "They told me reduce, too, but they don't talk real good, and I think I'm supposed to seduce you so you'll tell 'em something, and then they'll let me go. I guess. I hope. What is it they wantcha to tell 'em?"

Wayne cleared his throat again, striving merely to keep a firm grip on his sanity. Things had been happening much too fast for him to have retained anything like his customary composure.

He said, "Well, they want me to get them a, uh--well, a high dragon bump." He pronounced the words carefully.

"So why dontcha?" the girl asked.

Wayne's voice rose. "I don't even know what it is. I told them and they don't believe me. Now you're here! I suppose if I can't be reduced--seduced--into getting them one, it will wind up with torch hair. Believe me, I never heard of a high dragon bump."

"Now, don't get panicky!" the girl pleaded. "After all, I'm scared too."

"I am not scared!" Wayne replied indignantly. But he realized that he was.

So far, in the hour or so he'd been a captive of the Cirissins, he'd managed to keep his fright pretty well subdued. He'd understood almost at once what had happened, and his first reaction had not been terror or even any great degree of surprise.

He was a scientist and he had a scientist's curiosity.

And at first the Cirissins—or the one that had done all the talking—had been cooperative in answering his questions. But then, when he wasn't able to comprehend what they meant by high dragon bump, they'd started getting impatient.

"What's your name?" he asked the girl. She was making gentle swimming motions with her hands and feet, moving gradually closer to him.

"Sheilah," she said. "Sheilah Ralue. I'm a model. I pose for pitchers. You know--for sexy magazines and calendars and stuff like that."

"I see. You were posing when--?"

"When they snatched me, yeah. Couple hours ago, I guess. The flash bulb went off and blinded me for a second like it always does, and I seemed to be falling. Then I was here. Only I still don't even know where here is. Do you? How come we don't weigh nothing? It's ghastly!"

"We're in a space ship," Wayne told her. "In free fall, circling earth a thousand miles or so out. I thought you at least knew we were in a space ship."

The girl said, "Oh, bull. We can't be in no space ship. How'd we get here so fast?"
"They have a matter transmitter, but I haven't the slightest idea of how it works. Obviously it's limited to living creatures or they could just as well have taken whatever it is they want instead of ... You don't happen to know what a high dragon bump is, do you?"

"Don't be dumb. Of course I ... well, unless it's a dance or something. I use to be a dancer, ya know. Sort of."

"With bubbles, I imagine," Wayne said.

"Tassels. They was my specialty. But there's more money in posing for pitchers, and the work ain't quite so--"

"I doubt that a high dragon bump is a dance," Wayne said.


The idea of space travelers visiting earth to learn a new dance was no more fantastic than the idea of them being here at all.

Wayne turned his face to the door and shouted, "Hey, is that it? A dance? You want us to teach you a dance called the high dragon bump?"

A muffled metallic voice from the other side said, "Nod danz. Bump. Huguff quig."

Wayne shrugged and grinned weakly at Sheilah. "Well, we're making headway. We know one thing that it isn't."

The girl had drifted so close to him now that he could feel the warmth of her body and smell the overwhelming fragrance of her perfume.

She put one hand on his arm, and Wayne found that he had neither the strength nor the inclination to jerk away.

But he protested weakly, "Now, listen, there's no point in you--I mean--even if we did, I couldn't produce a high dragon bump."

"What kind of work do you do, mister?" Sheilah asked softly, drawing herself even closer. "You know, you ain't even told me your name yet."

"It's Wayne," he said, fumbling in an effort to loosen his tie so he could breath more easily. "I'm an instructor. I teach physics at Kyler College, and I've got a weekly science show on TV. In fact I'd just finished my show when they got me. I was leaving the studio, starting down the stairs. Thought at first I'd missed a step and was falling, but I just kept falling. And I landed here, and ... Now, don't do that!"

"Why, I wasn't doing nothing. Whaddya do on your TV show?"

"I talk. About science. Physics. Like today, I was discussing the H-bomb. How it works, you know, and why the fallout is dangerous, and ... Oh, good Gawd! Seduce, reduce! High dragon bump!"

He shoved her away from him abruptly and violently and he went hurtling in the opposite direction.

"Well, hey!" Sheilah protested. "You don't need to get so rough. I wasn't going to--"

"Shut up," Wayne said. "I think I've figured out what the Cirissins want!"

"Hey! Hey, open the door," he shouted. "I've got to talk to you."

The door opened and a Cirissin floated in.

Sheilah turned her head away, shuddering, and Wayne found it wise to close his eyes and open them little by little to grow re-acustomed to the sight gradually.

The only thing he could think of with which to compare the Cirissins was the intestinal complex of an anemic elephant.

It was not an entirely satisfactory comparison; but then, from his point of view, the Cirissins were entirely unsatisfactory creatures.

Each of the four he had seen was nearly twice his size. They had no recognizable features such as eyes, ears, nose, head, arms or legs.

Tentacle-like protrusions of various size and length seemed to serve as the sensory and prehensile organs.

Wayne had identified one waving, restless flexible stalk as the eye. He suspected another of being the mouth, except that it apparently wasn't used for talking. The voice came from somewhere deep inside the convoluted mass of pastel-streaked tissue.

"Wand tog?" the Cirissin rumbled.

Wayne said, "Yes. Do you mind telling me what you want a high dragon bump for?"

"Blast away hearth," the Cirissin replied unhesitatingly.

Wayne swallowed and found it unnaturally difficult to do so.

"To blast away earth?" he said. "You can do that with just one high dragon bump?"

"Certificate. Alteration energy maguntoot. Compilated, though. Want splain?"

Wayne said, "Never mind. I believe you. Just tell me this: Why? Who do you feel it's necessary to do it?"

"Cause is necessary," the Cirissin explained. "Hearth no good. Whee dun lake. Godda gut red oft."

Sheilah gasped, "Why the inhuman beasts!"
Wayne expended one sidelong silencing glance on her and then said, "I see. And just suppose now that I don't give you a high dragon bump? What do you do then?"

"Use hot tummy ache your arnium fishing bumps. Got them us elves. Tooking longthier, more hurtful, but can. Few don't gives high dragon bump tweddy far whores, thin godda."

Wayne was silent for a while, staring at the alien creature, aware of Sheilah staring at him.

"Twenty-four hours," he muttered. "Then they use uranium fission bombs. Oh, hell!"

Finally he shrugged. "All right, I'll do it. Anyway, I'll try. I'll do what I can."

Sheilah said, "Hey, listen mister, you can't ..."

"Shut up!" Wayne snapped. "How do you know what I can do? You just let me handle this."

"No sea juicing?" the Cirissin asked, waving his eye stem at Sheilah.

"No. No sea juicing, and no torch hair either, please. I just didn't understand what you wanted at first. Now, if I could talk to your captain--or, are you the captain?"


"Uh, yeah, very good indeed," Wayne said. "And in only three weeks! Now, Mr.--you don't mind if I call you O'Reilly, do you? Well, then, O'Reilly, do you have any suggestions as to how I should go about getting you a high dragon bump? You want me to make you one? Or--"

"Yukon mike?" O'Reilly asked.

Wayne shrugged modestly. "Of course. With proper materials and equipment--and enough time." He wondered if there was any chance at all of convincing O'Reilly of that.

"Nod mush timeless," O'Reilly said doubtfully. "God gut lab tarry, few wand lug."

Wayne hesitated, partly to translate O'Reilly's rumblings and partly to marvel at an audacious idea taking shape in his mind.

He said, "Uh, yes, by all means. I do want to look at your laboratory. Let's go."

The Cirissin offered no objections to Sheilah accompanying them, so they followed him, pulling themselves along the tubular corridor by means of metal rings set in the walls, apparently for that specific purpose.

It was the same means of propulsion employed by their guide, except that he used tentacles instead of hands.

They were more awkward than he, and so they fell behind.

"Listen, mister," Sheilah said. "You're not really gonna help these creeps, are ya? Cause, I mean, if you are I'm gonna stop you--one way or another."

Wayne looked at her, feeling a deep sadness that anything so gorgeous could be so stupid. Stirred to self-consciousness by her near-nudity, he glanced quickly away.

"Why don't you quit trying to think?" he advised her. "I may not be able to make a high dragon bump, but so help me I'm going to do my damnedest to see that they get one. And don't you get any stupid patriotic ideas. You just keep out of it. Understand?"

O'Reilly had thrown open a door and was waiting for them.

Wayne looked inside.

"Smatter? Dun lake lab tarry?" the Cirissin asked after waiting nearly a minute for some comment.

The laboratory probably wasn't adequate to produce a hydrogen bomb, Wayne realized; but he wasn't at all sure. It was the most complex, complete and compact laboratory he had ever seen. Its sheer size forced him to revise upward his estimate of the overall size of the ship.

Much of the equipment was totally alien to him, but there was also a great deal that he could at least guess the purpose of. Including a fabulous array of electronic equipment.

When Wayne still didn't say anything, the Cirissin closed the door. "Batter blan," he announced. "Wheeze india buck terth. Cup girlish ear. Torch herf youdon brink high dragon bump."

Wayne said, "Huh?"

"Flow me." O'Reilly led Wayne and Sheilah through a maze of corridors, tunnels and hatchways, stopping at last to throw open a door and let Wayne peer into the control cabin of a miniature space ship.

O'Reilly jumblingly explained that it was a reconnaissance ship, used for visiting the surface of a planet when it was impractical to land the mother ship.

The control board was simple: a few dials, one or two buttons, several switches and a view plate. It looked too simple.

Wayne said, "Now, wait. Let's see if I have this straight. You want me to take this ship to earth and swipe you a high dragon bump. And you're going to keep Sheilah here and torture her if I don't deliver the goods, huh?"

The Cirissin said that was right. "Kwiger butter. Jus bush piggest putton. Token ley tours gutther."

"I see. And what about communications?" Wayne asked. "Is the boat equipped with radio? How can I let you
know when I have your high dragon bump?"

O'Reilly said, "Can't. Combundlecommunications Cirissin only."

From his further explanation Wayne gathered that communications between the two ships was on the basis of some sort of amplified brain waves, and could carry only the brain waves of Cirissins.

Wayne considered the situation.

Two hours to get to earth. No radio. The big Cirissin ship was circling earth at an unknown distance, unknown speed and unknown direction. And although the ship was enormous, it would be impossible to spot it from earth unless you knew exactly where to look.

He said, "It would really be better, wouldn't it, if I could make the high dragon bump right here?"

O'Reilly agreed that it would be better.

"Well, let me try. You've got a good lab, and we have plenty of time. Twenty-four hours, you said? Well, give me about ten hours in the laboratory. If I can't produce a high dragon bump in that time I'll take the small ship down and get you one. Okay?"

While the Cirissin thought it over in meditative silence Wayne was aware of Sheilah watching him with cold, hostile eyes. He wished he could explain things to her, but he didn't dare try.

Finally O'Reilly said, "Hokum. Tenners in lab. Thistle."

"It'll be enough," Wayne assured him.

* * * * *

Sheilah was taken back to the room where Wayne had met her and the Cirissin instructed her to stay there. He closed the door but did not lock it. Then he took Wayne back to the lab.

"Neediest hulp?" he asked.

"Hulp? Help? Uh ... Why, no. No, thanks. I can manage fine by myself. In fact I'd rather work alone. Fewer distractions the better, you know."

"Hack saw lent. Wheel buzzy preparation. In trol room few deriding hulp needed." Then O'Reilly floated out the door.

Wayne was astounded. He'd taken it for granted that the Cirissin would insist on supervising him, and he'd been evolving elaborate plans for escaping his attention.

But Wayne thought he had the explanation for the Cirissins' idiotic behavior.

This ship and everything about it indicated an extremely high intelligence and an advanced culture.

Everything, that is, but the Cirissins themselves.

The idea of kidnapping him from earth to provide them with a weapon to destroy earth; kidnapping Sheilah to seduce him; the idea of even expecting him to be able to produce such a weapon--it was all idiotic.

There was only one explanation that he could see.

The Cirissins were idiots.

Some other race had produced this ship. These cosmic degenerates had somehow gotten hold of it and were on a mad binge through the universe, destroying all the worlds they didn't like.

He wondered how many they'd already wiped out. They had to be stopped.

Wayne immediately started constructing a radio transmitter from convenient materials in the laboratory. It was fairly simple.

He was not interrupted for nearly two hours. At which time he was saying into his improvised microphone:

"Seven hours? That long? Can't make it any sooner than that? Five hours? Six?"

And then it was not a Cirissin voice behind him which said: "Drop that. Put up your hands and turn around!"

It was Sheilah.

Wayne turned and saw her floating at the doorway pointing a long, tubular metal object at him, her finger poised on a protruding lever.

"What's that?" Wayne asked.

Sheilah said, "It's a gun I found after lookin' all over the damn ship. I'm going to kill you. And then I'm going to kill your Cirissin friends. You're nothing but a dirty traitor, and I wouldn't seduce you if--I never did trust you scientists. Maybe I'll be killed, too, but I don't care." She was close to tears.

"You're going to kill me?" Wayne said. "With that? How do you know it's even a gun? Looks more like a fire extinguisher to me. Aw, you poor little imbecile, I haven't had a chance to explain yet, but--"

Sheilah said, "You make me sick." She pulled the trigger.

The object was not a fire extinguisher, after all. It was quite obviously a weapon of some kind.

Also it seemed obvious that Sheilah had been pointing the wrong end of the weapon toward Wayne.

One more obvious fact that Wayne had time to comprehend was that the weapon was not a recoilless type.

But by then Sheilah had gone limp and the gun had rebounded from her grasp and was sailing at Wayne's head.
He ducked but not fast enough. The object whacked him solidly on top of his head. His brain exploded into a display of dazzling lights, excruciating pain and deafening noise. Then the lights went out and a long, dense silence set in. When Wayne fought through the layers of renewed pain and opened his eyes, he was still floating near his makeshift radio equipment in the laboratory. Sheilah still hung limply in mid-air near the door. The tubular weapon wavered near the ceiling. The radio transmitter was still open.

It was just as though he'd been unconscious no more than a few minutes. But Wayne had a strong feeling that it had been more than that. Therefore he was only shocked, rather than stunned, when a glance at his wristwatch indicated six hours and forty minutes had elapsed.

He held his head tightly in both hands to keep it from flying off in all directions at once, and he tried to think. He knew it was important to think--fast and straight.

Six hours and forty minutes.

That was too long to be unconscious from a simple blow on the head, and his head didn't really hurt that bad. Probably the weapon had still been firing whatever mysterious ammunition it used when it struck him; and when it bounced off his head it had turned, and he'd been caught in its blast.

But that didn't matter. That wasn't the important thing.

Six hours and forty minutes he'd been out.

Seven hours!
The Defense Department official he'd spoken to had told him seven hours.

And thank God it wasn't five hours or six, as he'd been urging them to make it.

Anyway he had only twenty minutes now. Possibly a little more, but just as likely less.

That realization should have spurred him to instantaneous and heroic action, but instead it paralyzed him for several minutes. He couldn't think what to do. He couldn't get his muscles and nerves functioning and coordinated.

The absence of gravity didn't help. He thrashed about futilely.

But at last, almost by accident, his feet touched a metal support beam, and he pushed himself toward Sheilah. He grabbed her around the waist with one arm and with his free hand pulled both of them through the door.

It seemed a long, long time before he got Sheilah to the reconnaissance ship. By then the twenty minutes were up. His life was going into overtime.

Sheilah was conscious but still disorganized and limp, struggling weakly and ineffectually. Wayne fumbled with the door, got it open and shoved her inside.

Then he pulled himself in and closed the door.

They might make it yet. They still had a chance.

He studied the control board, deciding on the proper button to push.

From behind him Sheilah screamed, "The bomb! You've got the bomb and you're going to--Well, you're not!"

Her body slammed against his shoulders and her arms encircled his neck. Her fingers clawed at his eyes. Wayne struggled, not to free himself, but only to get one hand loose, to reach the control board. When he did get a hand free, they had floated too far from the controls.

"Stop it, you stupid bitch!" Wayne snarled. "You're going to kill us both!"

Wayne said, "Listen, there's a guided missile from earth heading straight for this ship, and it has a hydrogen bomb warhead. It'll get here any minute now and when it--"

His words were broken off by the tremendous roar and concussion of the hydrogen bomb. Wayne's last thought before oblivion swallowed him was that they wouldn't have had time to escape, anyway. But that wasn't the end. Wayne woke up enough to refuse to believe he was alive, and O'Reilly was somewhere near, telling him:


Wayne groaned. The meaning of O'Reilly's words was trying to get through to his brain, and he was trying desperately to keep the meaning out.

O'Reilly's voice receded into a thick gray fog. "Keep shib. Shores. Presirent felpings. Gluck."

Metal slammed against metal. Wayne slammed against something hard. And darkness closed in once again.

But this time it wasn't so smothering and didn't last nearly so long.

When he opened his eyes his head was clear. He wasn't floating. He was lying on something hard--a floor surface of the Cirissin landing ship. He didn't ache anywhere.

All in all he felt pretty good.
For the first few seconds.
Then he started remembering things, and he wished he hadn't bothered to wake up.
Sheilah was standing by the control panel, her back to him. She blocked the view screen, but Wayne didn't want to see it anyway. He wasn't even curious.
Sheilah turned, saw him, smiled broadly.
She said, "Gee, mister, I guess you're a hero. I dunno how you done it, but you made 'em go away, and you made 'em turn us loose." Wayne could detect no mockery or bitterness in her voice.
"Aw, shut up," he growled.
"You still mad at me cause of what I done? Well, gee, I'm sorry. I didn't get whatcha were up to. I guess I still don't, but ... Oh, hell, let's don't fight about it. It don't matter now, does it?"
Wayne shook his head wearily. "No," he agreed. "It doesn't matter now."
Sheilah moved away from the control board and came toward him. In her filmy, transparent costume, she was the quintessence of womanly allure.
Wayne gasped and stared, but not at her.
The view screen had become visible when she'd moved.
It showed earth.
Or a curved, cloud-veiled slice of earth. Intact, serene and growing steadily larger.
"What the hell! Why, I thought ..." Wayne jumped to his feet, brushed past Sheilah and peered more closely at the view plate. There was no mistaking it. Earth.
"What's the matter with you, mister?" Sheilah asked.
Wayne felt dizzy. O'Reilly had said, "Earth blasted away," hadn't he? And the H-bomb hadn't destroyed the Cirissin ship. Therefore ... Well, therefore what?
In the first place what O'Reilly had actually said was, "Rid of earth now. Blasted away." It wasn't quite the same as ...
O'Reilly had never said anything about destroying earth.
Quite a sizeable re-evaluation project was taking place in Wayne's mind. It took several minutes for all the pieces to fall into their proper places. But once he was willing to realize that the Cirissins had known what they were doing, everything seemed obvious.
"Oh, good Gawd!" he muttered. "What utter idiots!"
"The Cirissins?" Sheilah asked.
"No, I mean us. Me. Good Lord, just because O'Reilly's English wasn't perfect! What did I expect for only three weeks? Hummm. The atomic structure of the entire ship must be uniformly charged to ... Damn! High dragon bump!"
"I don't getcha," Sheilah said. "What's this high dragon bump business? I thought they wanted a hydrogen bomb to destroy earth, and I thought you'd agreed to help 'em, and so I thought ..."
"Oh, never mind," Wayne said. "I know what you thought, and you weren't any more stupid than I was. We were both wrong.
"Look, the Cirissins must have been stalled--out of gas, sort of. Something had gone wrong with their nuclear drive units. They had some emergency fuel, but they didn't want to use it. Like having a can of kerosene in the car when the tank runs dry, I suppose. It will work, but it messes up the engine. You understand so far?"
"Sure."
"Okay then. They happened to be close to earth, so they went into an orbit around it and studied it for a while on radio and TV bands, and realized they might be able to get help without using their emergency fuel--uranium, incidentally, not kerosene.
"So they grabbed us. Me, I suppose because they'd seen my TV science program. They must have gotten the idea from some stupid spy show that scientists have to be seduced into revealing information. That's why they picked up you."
Sheilah interrupted, "But what did they want? I thought ..."
Patiently, Wayne said, "Just what they said. A high dragon bump. A bump, not a bomb. A boost, a push. Not to blast away earth, but to blast away from earth. That's all."
END
"We moor in ten minutes," I said.

We were flying at reduced speed because of the heavy fog we had run into at the outer fringe of Earth's atmosphere. But I knew we were within forty or fifty miles of the Trans-Space base. I had counted the miles on this particular trip because of the load of radium we were carrying from the Venusian mines. I wouldn't draw a completely relieved breath until we were down and the stuff was in the hands of the commerce agents.

I eased my position slightly to relieve the pressure on my broken flipper and grinned at the pilot, Lucky Larson, the screwiest, most unpredictable void trotter who had ever flown for dear old Trans-Space.

"You've been too good to be true this trip," I said, "and it's a good thing. The chief told me that if you so much as thought about clowning around or stunting he was going to clip your wings for good."

Lucky grinned, an impish, devil-may-care grin that lightened up his freckled face and bunched the tiny wrinkles at the corners of his eyes. Then with characteristic abruptness he scowled.

"That grandmother," he said disgustedly. "Who does he think I am, anyway? Some crazy irresponsible madman who hasn't got enough brains to stay on a space beam?"

"That's just what he does think," I grinned, "and you've given him plenty of reason to think it. You can't bring your crate in to the base without stunting around and showing off and risking your damn neck. That's why he sent me along with you this trip. Just to see that you act like a pilot--instead of circus acrobat."

"A lot of good you'd do," Lucky mumbled. "You got a broken arm. The only reason he sent you is because of that screwy luck of yours. But it won't last forever and one of these days it's going to run out just when you need it. So just remember--no stunting this trip or you'll be out of the strata for the rest of your natural life."

"Aw, that's the trouble with this racket," Lucky grumbled, "a guy can't have no fun no more. Back when I was with the Space circus--"

"Okay, okay," I cut in, "I've heard that before. Just fly your ship, now, and forget about the deep dark plot of the company to take all the joy out of your life. I'm going to take a look-see at the atomic floats and get the passengers bundled together."

I stood up and crawled over him and opened the door leading to the body of the ship. I could still hear him grumbling as I slid the light chrome-alloy door shut. I chuckled to myself and headed up the aisle to the baggage compartments. Lucky Larson was a legend as space pilots go. An unpredictable, erratic screwball but one of the finest rocket riders who ever flashed through the void.

Company regulations and interplanetary commissions were the bane of his existence. He made his own rules and regulations and got by with it. That is he had gotten by with it. Now they were cracking down on him. He had been grounded twice and the chief had threatened to set him down for life if any more infractions were charged to him. I shook my head gloomily. He was a great guy, the last of a great and gallant army of space adventurers, but he was on the way out. The rules were necessary, vital to safe space travel and the Lucky Larsons would have to live up to them, or else.

* * * * *

My mind was a long way away from the cabin of the space ship and maybe that's why I got what I did. I didn't see it coming. One minute I was walking through the aisle, thinking about Lucky Larson and the next second something slammed into the back of my head knocking me to my knees.

Through a haze of red and white lights I heard a voice bark, "Toss him into a chair and grab that good arm of his."

I wasn't out. Just damn sick. Something like a cold hand seemed to have closed over my stomach and for an awful moment I gagged and tried to retch. But the moment passed and I forced open my eyes and focused them on two tough-looking, hard-eyed gents who stood in front of me. Another unpleasant-looking little man knelt along side of me, twisting my good arm behind my back.

"Okay," I gritted, "what's the gag?"
The tallest of the three, evidently their leader, smiled at me. "It's no gag," he murmured calmly, "we happen to need the radium you're carrying. We're going to take it. Any objections?"

"You'll never get away with this," I snapped, "your names and descriptions are registered with the passenger office. You'll be tracked down in twenty-four hours."

I was bluffing, of course, and I knew from their contemptuous smiles that they knew it, too. They probably had given fictitious names, and the descriptive information which the bureau required consisted of a few generalities, such as height, weight and the like. I cursed myself for a stupid, careless fool. The three men had been the only passengers from Venus and they had kept to themselves the entire trip. Once or twice I had wondered at their reticence and quietness but I had not been suspicious enough to make a check-up.

One of the men laughed shortly. "Let us worry about that. We've covered every angle that could possibly come up. With the help of your friend up front, this ship will be flown to a certain deserted asteroid where a few friends of ours are to meet us with another ship. How you come out afterward will depend on how you co-operate now. Clear enough?"

It was clear enough all right. Lucky and I wouldn't last long after we served our purpose.

The tall man turned from me and nodded significantly to the man standing next to him and then pointed to the closed door to the pilot's chambers.

"Take care of the pilot," he murmured, "and tell him if he isn't obliging we'll take the cast off his friend's arm and--" he smiled at me, "massage it a bit."

I felt a cold sweat break out on my forehead.

The thug grinned wolfishly at me and then winked at his leader. "I'll tell him, boss." He dug his hand into his pocket and drew out a stubby atomic pistol. "If he won't listen to me maybe this'll persuade him."

Still grinning he turned and headed up the aisle, the gun clenched in his huge fist.

* * * * *

I glanced at the tall figure standing in front of me and saw that he was watching the retreating figure of his henchman with a saturnine smile on his face. I thought swiftly. If I could yell a warning to Lucky, he could bolt the door of the pilot's chamber and then set the ship down at the Trans-Space base. It was the only way to save Lucky and the radium. I wasn't very optimistic about my own chances. I knew they were zero.

I opened my mouth, took a deep breath and then, before I could scream the words that would warn Lucky, it happened. The ship shuddered for an instant and then zoomed upward, the smooth hum of the rocket motors crescendoing to a roaring song of power and speed.

The sudden jolting acceleration hurled me to the tail of the ship and I saw, like an image in a kaleidoscope, the tangled thrashing figures of the space bandits as they were tossed to the floor, a dazedly struggling mass of arms and legs.

The ship was lying over on its back in a few seconds, and before I could catch a breath it suddenly whipped over and blasted toward Earth in a screeching, hissing power-dive.

It was terrific punishment even for this type of space crate but it was worse for human beings. The three bandits were clutching at their stomachs as if they were afraid of losing them. Their faces were mottled and blotchy and their eyes were rolling beseechingly.

I didn't mind the erratic convolutions the ship was making but my arm was burning as if it were on fire. Numbing waves of pain were coursing up and down my entire body.

I tried to crawl to my knees but the floor rolled under me as the ship whipped over in a twisting spiral and I crashed forward on my face. Then everything dissolved into inky blackness....

* * * * *

When I came to, I heard a great commotion, then a sudden shot and then a babble of voices booming around me. I remember thinking fleetingly of crooks, Lucky Larson and a mountain of radium and then--because nothing made sense--I passed out again.

* * * * *

The next time I opened my eyes I found myself stretched out on a cot in the chief's office. I turned my head slightly and saw Lucky Larson, the chief and a half dozen other guys staring down at me.

"It's not very original," I said, "but where the hell am I?" That was silly of me because I knew where I was, so I said: "Never mind that but please tell me what the hell happened?"

The chief laughed and Lucky Larson laughed and then they slapped each other on the back. "Don't worry about a thing," the chief said, "those crooks are under lock and key and there's not a thing to worry about."

"But how--I mean what...?" My voice trailed off. Nothing made sense.

"Well," the chief broke in, "Lucky here really deserves the credit for catching them. And I'm not forgetting your good work either. Both of you will receive more tangible evidence of my appreciation. But Lucky really did the
"Awww," Lucky mumbled, "it wasn't much. Just a little common sense and, uh, a little luck."

"It was damn fast thinking," the chief cut in belligerently, "you knew your stunting over the base would drive me crazy. You knew I'd get so mad I'd call out the base police and have you thrown in when you moored. And when you did moor and the crooks toppled out we were right on hand to receive them. They were so weak from the shaking up you gave them that they didn't have a chance."

Lucky rolled innocent eyes to the ceiling. "Sometimes," he remarked piously, "stunting has its uses."

"Congratulations," I said weakly. "You certainly used your head. Caught the chief's attention with your stunting and almost knocked the crooks out with it too. That's killing two birds with one stone, all right." Then another thought occurred to me.

"How did you know I was in trouble?" I asked curiously. "How did you know we had those crooks on board?"

"Why--why," Lucky sputtered, "that was simple. I just happened to look behind me and I saw those boys piling into you. So I did a little fast thinking and then I whipped the ship into a few maneuvers and, like the chief says, they caught his eye all right."

The chief was beaming fondly and I turned my head to hide the smile on my lips. "So you just looked behind you," I muttered. "Well, Lucky, you certainly are--and were."

He grinned down at me and winked. "You said it, kid."

I wanted to ask him a question then, but I decided to wait until we were alone. I closed my eyes and smiled again, thinking of his expression when I would ask him how he had been able to look behind him and see me struggling with those crooks, when the door of the pilot's chamber was closed all the time....

THE END

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**Contents**

MARTIAN V. F. W.
By G. L. Vandenburg

*There's nothing like a parade, I always say. Of course, I'm a Martian.*

Mr. Cruthers was a busy man. Coordinating the biggest parade in New York's history is not easy. He was maneuvering his two hundred pounds around Washington Square with the agility of a quarterback. He had his hands full organizing marchers, locating floats, placing the many brass bands in their proper order and barking commands to assistants. But Mr. Cruthers approached the job with all the zeal of an evangelist at a revival meeting.

As he approached the south-west corner of the square he saw something that jarred his already frayed nerves. He stopped abruptly. The mass of clipboards and papers he was carrying fell to the street. There before him were one hundred and fifty ants, each of them at least six feet tall. His first impulse was to turn and run for the nearest doctor. He was certain that the strain of his job was proving too much for him. But one of the ants approached him. It seemed friendly enough, so Mr. Cruthers stood his ground.

"My group is waiting for their assignment." The ant's voice seemed to be coming from the very core of its thorax which was a violent red.

"Good Lord!" Mr. Cruthers' mouth opened up as wide as an oven door.

"Mr. Cruthers, I believe the parade is about to start and my group--"

Mr. Cruthers managed to blurt out. "What the devil are you anyway!"

"This is the parade marking the International Geophysical Year, is it not?" The ant had a pleasant, friendly voice.

"Well, yes, but--"

"And you are Mr. Cruthers, the manager of the parade, is that not correct?"

Mr. Cruthers rubbed his eyes and took another look at the strange creature. Its head was a brilliant yellow. It had two large goggle eyes which rolled like itinerant marbles when it spoke. The low slung abdomen was a burnt brown. It was bad enough, Cruthers thought, that these ants were six feet tall, but it was nightmarish to see them in three colors.

"Mr. Cruthers," the ant continued, "haven't you been instructed by the National Academy of Sciences that the Martian V.F.W. is to participate in this parade?"
"The Martian--!!" Mr. Cruthers' mouth was open again. Then he realized that when the ant spoke its mouth didn't move. He picked up his clipboard and papers from the street. His voice was hostile now. "What the hell is this, some kind of a gag! What are you trying to do, scare a man half to death!"

"Oh, we're not joking, Mr. Cruthers. The National Academy--"

"They didn't say anything to me about a bunch of clowns dressed up like ants!" Mr. Cruthers' indignation became intensified. He was loathe to admit that he'd been taken in by such obviously animated costumes. "Now look here, I'm a very busy man."

"The arrangements have been made, Mr. Cruthers. If my group is refused a place in this parade we shall file suit immediately. As manager you'll be named co-defendant." The ant was gentle but firm.

The thought of being sued softened Mr. Cruthers' attitude. "Well, I'm very sorry, pal, but every contingent in this parade is listed on my clipboard and you're not. I know this list by heart. What did you say the name of your group was?"

"The Martian V.F.W."

Mr. Cruthers was amused. "Those sure are the craziest outfits I've ever seen," he chuckled. "Where'd you get them? Walt Disney make them for you?" He followed his own little joke with a long throaty laugh.

The ant was impatient. "About the parade, Mr. Cruthers, there isn't much time."

"Oh, yes, the parade. Well, let me see," he thumbed through the clipboard, "I guess there's always room for a few laughs. How many in your group?"

"One hundred and fifty. And we also have a float with us. Not a very large one. It measures twenty by twenty."

"Tell you what. You move your group to the corner of Thompson Street and Third Street. Get behind the Tiffany float and follow them, okay?"

The ant paused a moment to record the instructions in his mind. Then he turned to leave.

"Oh, wait a minute," Mr. Cruthers cried before the ant could rejoin his group. "Just who did you speak to at the National Academy of Sciences?"

"I believe it was a Mr. Canfield."

Mr. Cruthers' face lit up. "Well, why didn't you say so in the first place! I'd have placed you right away."

"That's perfectly all right, Mr. Cruthers."

"Listen, I don't know what you guys do but those costumes should certainly bring the house down. There's going to be four million people watching this parade. I bet that's the biggest audience you've ever seen."

"It certainly is." With that the ant strode away.

"Good luck!" Mr. Cruthers shouted after him.

* * * * *

"Daddy! Daddy, look! Look at the big rocket!" The little boy jumped up and down gleefully. "It must be a whole mile long, Daddy! What kind is it?"

"That's the Vanguard, son."

An autumn breeze from the East River chilled their vantage point at Sixty-First Street and Fifth Avenue.

"The Vanguard?" The name meant nothing to the boy. "Gee, I'll bet it can fly all the way to the stars!"

"It's the rocket that carried the first artificial satellite into space."

The parade, now three hours old, continued past the reviewing stand.

"I wanna get a better look at the Vanguard!" the boy shouted.

The father lifted the boy onto his shoulders. The little fellow laughed and whooped it up, firing several shots from his Captain Video Ray gun at the passing missile.

The rocket moved on and the noise of the crowd diminished slightly.

A one-hundred piece brass band was passing in front of them. They were playing "The Stars and Stripes Forever." They were followed by the Sak's Fifth Avenue display; nine small floats, each depicting life on another planet. The National Academy of Sciences had a success on its hands.

"Wow! Daddy, I wanna ride on it! I wanna ride on that float and visit all those planets! Can I, Daddy?" The boy became all limbs trying to squirm down from his father's shoulders.

"You stay right where you are, young man," the father struggled to hold his balance.

"But I wanna go to the stars. I can watch the rest of the parade from Venus or Mercury! Please, Daddy!"

The father grinned. "Not just yet, son, but it won't be long before man will go to the stars."

"Who lives up there, Daddy?"

"Oh, there isn't any life up there yet."

"If no one's living up there why does anyone want to go there?"

"Well, maybe there'll be too many people on earth someday and then we'll have to find other planets with more room."
Another monstrous brass band was going by. The boy became restless. He began to toy with his ray gun, half interested in seeing if there were any sparks left in it. "Why can't there be something besides so many bands in a parade? I wanna see another float."

The father tried to interest the boy by pointing out all the famous people who were also there: a variety of statesmen the world's leading scientists and religious and cultural leaders, the president of the United States.

The boy was interested but not in what his elder was saying to him. He was looking downtown, his eyes squinting, trying to make out figures as far away as Fifty-sixth Street. Then his mouth opened, not uttering a sound yet, just waiting to burst with joy at what was coming toward them.

His father looked up at him. "I wish you'd tell me what you are looking at. I'm all the way down here on street level, remember?"

"Daddy, they look like ants!"

"What?"

"Ants, Daddy, ants! A whole army of them. Ain't it exciting?"

"What on earth are you talking about?"

"They're doing somersaults and back flips and everything! They're coming right this way! Gee, there's hundreds of them. And they got a float behind them, Daddy! A great big float with something burning on it."

The child sitting on his shoulders made mobility impossible for the father. And he couldn't see around the spectators. He resigned himself to stand and wait for this new spectacle to overtake them. The reaction to this new sight had already begun to work its way uptown. In the distance, but getting closer every second, he could hear unrestrained laughter and rejoicing.

"Hey, take it easy!" The boy was beginning to ride the shoulders like a bronco buster. "By the time they get here I won't have any shoulders left. Where are they now?"

"They're almost here, Daddy! And they aren't ants at all. They're just a bunch of clowns dressed up like it." He began to giggle hysterically. "Golly, they're funny. Can you see them yet, Daddy?"

Before the father could produce an answer the ants were in view. They were a sight that couldn't fail to stimulate the funny bone. By comparison with real ants everything about them had been grossly exaggerated to achieve the proper effect. They walked on their two back legs but the four front apertures were far from idle. Some of them turned somersaults, others did complicated flips consisting of two or three spins in mid-air. Still others, doing a kind of animated cakewalk, carried toy ray guns which they fired at random into the crowd. The guns were something like the little boy's Captain Video ray gun, only larger. They emitted little streaks of blue sparks which shone brightly but disappeared when contact was made with air.

They were easily the hit of the parade, a three ring circus all by themselves, as they pranced and clowned their way up Fifth Avenue giving the spectators a whale of a show that was completely new.

The guests on the reviewing stand refrained from any hilarity until they saw the float that four of the ants were pulling behind them. It was in keeping with the rest of the nonsense they were perpetrating. The float boasted eight larger ray guns, three on either side and two in the rear, that fired the same fascinating blue sparks. Behind each gun an ant stood on its head, wildly waving six legs in the breeze, begging to be noticed and laughed at. Above the guns, emblazoned in fiery orange letters, were the words: "MARTIAN V.F.W." This was interpreted by one and all as a punch line and was treated accordingly.

It was heartwarming to be able to see the president and so many other dignitaries abandon composure in favor of a good old fashioned belly laugh.

"Daddy, I can't laugh any more," the boy had to pause between every other word. "My stomach hurts. Aren't they the funniest things you ever saw?"

The father was too convulsed to be able to answer him.

"Daddy, one of them is coming this way! He's firing his Captain Video ray gun at us!" They boy squeezed his father and held on tight.

The father took a deep breath in order to be able to speak. "Take your gun and fire back at him, son. Fire away! Go on, he's just being playful!" He broke forth with another gust of laughter. "I won't see anything as funny as this again if I live to be a hundred!"

The ant pranced over to where they were standing, firing its gun in every direction. The boy fired back. The ant took one look at the lad's gun and let out a long cackling sound which built to a crescendo and then stopped as though it had been turned off. The ant rejoined the group and they continued on their merry way.

The boy fired several shots into the float as it passed. He wanted to see if he could knock out those blazing orange letters: MARTIAN V.F.W. The letters continued to burn, but in the boy's mind he was certain he had made
several direct hits.

The boy and his father watched the float until it was out of sight. They knew there wouldn't be another attraction like those ants. They must have been real professionals, the father thought. Such teamwork! Such precision! Each one of them having a specific job to do and each doing it to perfection. After them everything was bound to be anticlimactic.

More marchers, more bands, a few more floats. The boy was beginning to tire. It had been a long day. Now everything was dull. "Daddy, I don't want to see any more. Let's go home."

"We'll stay another five minutes."

* * * * *

The parade somehow seemed to be slowing down. The father yawned and let his son down from his shoulders. He looked across the street at the president and the other dignitaries on the reviewing stand. All were slowly raising their hands in salute as another color guard drowsily made its way by.

Soon the last group in the parade was passing the reviewing stand. Another brass band. They were moving with the speed of a glacier. A full five seconds elapsed between each note of music. Everything was happening in slow motion. On the reviewing stand the dignified hands went up, agonizingly slow, to a final salute and they stayed there. The greatest minds in the world stood motionless, unalterably still. Just as each wave of pandemonium had unfurled itself up Fifth Avenue during the parade, so now did silence take command.

The little boy tugged at his father's coat. "Daddy! Daddy," he pleaded, "why has the parade stopped? I wan-na-go-home--" His words came more slowly with each passing second, like a high speed phonograph playing at thirty-three and a third r.p.m. "Dad-dy--why--don't--you--an--swer--me--Da--ddy--why--don't--" His father never heard him.

* * * * *

Fifty miles above the Atlantic the fleet of spaceships hung suspended like lanterns. In the lead ship the ant in charge of communications reported to the commander.

"We've just received the first communique from the advance guard, sir."

"Read it to me."

The communications chief read from a large perforated paper. "Time--0600--mission accomplished. Manhattan island cut down the middle--immediate result of super-isonic rays; four million dead--rays spreading east and west--estimated time of rays' full effect; 0800--island will then be neutralized--awaiting further orders." The ant folded the paper and looked up at the commander. "Shall I relay further orders, sir?"

"No." The commander of the ants paused and stroked his chin. "We're moving in."

THE END

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Contents

SILVER DOME
By Harl Vincent

In her deep-buried kingdom of Theros, Phaestra reveals the amazing secret of the Silver Dome.

In a secluded spot among the hills of northern New Jersey stood the old DeBost mansion, a rambling frame structure of many wings and gables that was well-nigh hidden from the road by the half-mile or more of second-growth timber which intervened. High on the hill it stood, and it was only by virtue of its altitude that an occasional glimpse might be obtained of weatherbeaten gable or partly tumbled-down chimney. The place was reputed to be haunted since the death of old DeBost, some seven years previously, and the path which had once been a winding driveway was now seldom trod by human foot.

It was now two years since Edwin Leland bought the estate for a song and took up his residence in the gloomy old house. And it had then been vacant for five years since DeBost shot himself in the northeast bedroom. Leland's associates were sure he would repent of his bargain in a very short time, but he stayed on and on in the place, with no company save that of his man-servant, an aged hunch-back who was known to outsiders only as Thomas.

Leland was a scientist of note before he buried himself in the DeBost place, and had been employed in the New York research laboratory of one of the large electrical manufacturers, where he was much admired and not a little envied by his fellow workers. These knew almost nothing of his habits or of his personal affairs, and were much surprised when he announced one day that he had come into a sizable fortune and was leaving the organization to go
in for private research and study. Attempts to dissuade him were of no avail, and the purchase of the DeBost property followed, after which Leland dropped from sight for nearly two years.

* * * * *

Then, on a blustery winter day, a strange telephone call was received at the laboratory where he had previously worked. It was from old Thomas, out there in the DeBost mansion, and his quavering voice asked for Frank Rowley, the genial young engineer whose work had been most closely associated with Leland's.

"Oh, Mr. Rowley," wailed the old man, when Frank responded to the call, "I wish you would come out here right away. The master has been acting very queerly of late, and to-day he has locked himself in his laboratory and will not answer my knocks."

"Why don't you break in the door?" asked Frank, looking through the window at the snow storm that still raged.

"I thought of that, Mr. Rowley, but it is of oak and very thick. Besides, it is bound with steel or iron straps and is beyond my powers."

"Why not call the police?" growled Frank. He did not relish the idea of a sixty or seventy mile drive in the blizzard.

"Oh--no--no--no!" Old Thomas was panicky at the suggestion. "The master told me he'd kill me if I ever did that."

Before Frank could formulate a reply, there came a sharp gasp from the other end of the line, a wailing cry and a thud as of a falling body; then silence. All efforts to raise Leland's number merely resulted in "busy" or "line out of order" reports.

Frank Rowley was genuinely concerned. Though he had never been a close friend of Leland's, the two had worked on many a knotty problem together and were in daily contact during the nearly ten years that the other man had worked in the same laboratory.

"Say, Tommy," said Frank, replacing the receiver and turning to his friend, Arnold Thompson, who sat at an adjoining desk, "something has happened out at Leland's place in Sussex County. Want to take a drive out there with me?"

"What? On a day like this? Why not take the train?"

"Don't be foolish, Tommy," said Frank. "The place is eight miles from the nearest station, which is a flag stop out in the wilds. And, even if you could find a cab there--which you couldn't--there isn't a taxi driver in Jersey who'd take you up into those mountains on a day like this. No, we'll have to drive. It'll be okay. I've got chains on the rear and a heater in the old coupe, so it shouldn't be so bad. What do you say?"

So Tommy, who usually followed wherever Frank led, was prevailed upon to make the trip. He had no particular feeling for Leland, but he sensed an adventure, and, in Frank's company, he could ask for no more.

* * * * *

Frank was a careful driver, and three hours were required to make the sixty-mile journey. Consequently, it was late in the afternoon when they arrived at the old DeBost estate. It had stopped snowing, but the drifts were deep in spots, and Frank soon found that the car could not be driven through the winding path from the road to the house. So they left it half buried in a drift and proceeded on foot.

It was a laborious task they had undertaken, and, by the time they set foot on the dilapidated porch, even Frank, husky and athletic as was his build, was puffing and snorting from his exertions. Little Tommy, who tipped the scales at less than a hundred and twenty, could hardly speak. They both were wet to the waist and in none too good humor.

"Holy smoke!" gasped Tommy, stamping the clinging snow from his sodden trouser legs and shoes, "if it snows any more, how in Sam Hill are we going to get out of this place?"

"Rotten trip I let you in for Tommy," growled Frank, "and I hope Leland's worth it. But, darn it all, I just had to come."

"It's all right with me, Frank. And maybe it'll be worth it yet. Look--the front door's open."

* * * * *

He pointed to the huge oaken door and Frank saw that it was ajar. The snow on the porch was not deep and they saw that footprints led from the open door to a corner of the porch. At that point the snow on the railing was disturbed, as if a hurrying man had clung to it a moment before jumping over and into the drifts below. But the tracks led no further, for the drifting snow had covered all excepting a hollow where some body had landed.

"Thomas!" exclaimed Frank. "And he was in a hustle, by the looks of the tracks. Bet he was frightened while at the telephone and beat it."

They entered the house and closed the door behind them. It was growing quite dark and Frank searched for the light switch. This was near the door, and, at pressure on the upper button, the spacious old hall with its open staircase was revealed dimly by the single remaining bulb in a cluster set in the center of the high ceiling. The hall
was unfurnished, excepting for a telephone table and chair, the chair having fallen to the floor and the receiver of the telephone dangling from the edge of the table by its cord.

"You must have heard the chair fall," commented Tommy, "and it sure does look as if Thomas left in a hurry. Wonder what it was that frightened him?"

The house was eerily silent and the words echoed awesomely through the adjoining rooms which connected with the hall through large open doorways.

"Spooky place, isn't it?" returned Frank.

* * * * *

And then they were both startled into immobility by a rumble that seemed to shake the foundations of the house. Heavier and heavier became this vibration, as if some large machine was coming up to speed. Louder and louder grew the rumble until it seemed that the rickety old house must be shaken down about their ears. Then there came a whistling scream from the depths of the earth--from far underground it seemed to be--and this mounted in pitch until their eardrums tingled. Then abruptly the sounds ceased, the vibration stopped, and once more there was the eery silence.

Rather white-faced, Tommy gazed at Frank.

"No wonder old Thomas beat it!" he said. "What on earth do you suppose that is?"

"Search me," replied Frank. "But whatever it is, I'll bet it has something to do with Leland's strange actions. And we're going to find out."

He had with him the large flashlamp from the car, and, by its light, the two made their way from room to room searching for the iron-bound door mentioned by Thomas.

They found all rooms on the first and second floors dusty and unused with the exception of two bedrooms, the kitchen and pantry, and the library. It was a gloomy and spooky old house. Floor boards creaked startlingly and unexpectedly and the sound of their footsteps echoed dismally.

"Where in time is that laboratory of Leland's?" exclaimed Frank, his ruddy features showing impatient annoyance, exaggerated to an appearance of ferocity by the light of the flashlamp.

"How about the cellar?" suggested Tommy.

"Probably where it is," agreed Frank, "but I don't relish this job so much. I'd hate to find Leland stiff down there, if that's where he is."

"Me, too," said Tommy. "But we're here now, so let's finish the job and get back home. It's cold here, too."

"You said it. No steam in the pipes at all. He must have let the fire go out in his furnace, and that's probably in the cellar too--usually is."

* * * * *

While talking, Frank had opened each of the four doors that opened from the kitchen, and the fourth revealed a stairway that led into the blackness beneath. With the beam of his torch directed at the steps, he proceeded to descend, and Tommy followed carefully. There was no light button at the head of the stairs, where it would have been placed in a more modern house, and it was not until they had reached the furnace room that they located a light fixture with a pull cord. An ordinary cellar, with furnace, coal bin, and a conglomeration of dust-covered trunks and discarded furniture, was revealed. And, at its far end, was the iron-bound door:

The door was locked and could not be shaken by the combined efforts of the two men.

"Have to have a battering ram," grunted Frank, casting about for a suitable implement.

"Here you are," called Tommy, after a moment's search. "Just the thing we are looking for."

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He had come upon a pile of logs, and one of these, evidently a section of an old telephone pole, was of some ten or twelve inches diameter and about fifteen feet long. Frank pounced upon it eagerly, and, supporting most of the weight himself, led the attack on the heavy oak door with the iron bands.

No sound from within greeted the thunderous poundings. Clearly, if Leland was behind that door, he was either dead or unconscious.

Finally the double lock gave way and Tommy and Frank were precipitated headlong into the brightly lighted room beyond. Recovering their balance, they took stock of their surroundings and were amazed at what they saw--a huge laboratory, fitted out with every modern appliance that money could buy. A completely equipped machine shop there was; bench after bench covered with the familiar paraphernalia of the chemical and physical laboratory; huge retorts and stills; complicated electrical equipments; dozens of cabinets holding crucibles, flasks, bottles, glass tubing, and what not.

"Good Lord!" gasped Tommy. "Here's a laboratory to more than match our own. Why, Leland's got a fortune invested here!"

"I should say so. And a lot of stuff that our company does not even have. Some of it I don't know even the use
of. But where is Leland?"
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   There was no sign of the man they had come to help. He was not in the laboratory, though the door had been
   locked from within and the lights left burning throughout.

   With painstaking care they searched every nook and cranny of the large single room and were about to give up
   in despair when Tommy happened to observe an ivory button set into the wall at the only point in the room where
   there were no machines or benches at hand. Experimentally he pressed the button, and, at the answering rumble
   from under his feet, jumped back in alarm. Slowly there opened in the paneled oak wall a rectangular door, a door of
   large enough size to admit a man. From the recess beyond there came a breath of air, foul with the musty odor of
decayed vegetation, dank as the air of a tomb.

   "Ah-h-h!" breathed Frank. "So that is where Ed Leland is hiding! The secret retreat of the gloomy scientist!"

   He spoke half jestingly, yet when he squeezed his stalwart bulk through the opening and flashed the beam of
   his light into the darkness of a narrow passage ahead he was assailed with vague forebodings. Tommy followed
   close behind and spoke not a word.
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   The passage floor was thick with dust, but the marks of many footsteps going and returning gave mute evidence
   of the frequency of Leland's visits. The air was heavy and oppressive and the temperature and humidity increased as
   they progressed along the winding length of the rock-walled passageway. The floor sloped, ever downward and, in
   spots, was slippery with slimy seepage. It seemed that they turned back on their course on several occasions but
   were descending deeper and deeper into the heart of the mountain. Then, abruptly, the passage ended at the mouth of
   a shaft, which dropped vertically from almost beneath their feet.

   "Whew!" exclaimed Frank. "Another step and I'd have dropped into it. That's probably what happened to
   Leland."

   He knelt at the rim of the circular opening and looked into the depths of the pit, Tommy following suit. The
   feeble ray of the flashlight was lost in the blackness below.

   "Say, Frank," whispered Tommy, "turn off the flash. I think I saw a light down there."

   And, with the snapping of the catch, there came darkness. But, miles below them, it seemed, there was a tiny
   pin-point of brilliance--an eerie green light that was like a wavering phosphorescence of will-o'-the-wisp. For a
   moment it shone and was gone. Then came the dreadful vibration they had experienced in the hall of the house--the
   whistling scream that grew louder and louder until it seemed they must be deafened. The penetrating wail rose from
   the depths of the pit, and the vibration was all around them, in the damp rock floor on which they knelt, and in the
   very air of the cavern. Hastily Frank snapped on the light of his flash.

   "Oh boy!" he whispered. "Leland is certainly up to something down there and no mistake! How're we going to
   get down?"

   "Get down?" asked Tommy. "You don't want to go down there, do you?"

   "Sure thing. We're this far now and, by George, we're going to find out all there is to learn."

   "How deep do you suppose it is?"

   "Pretty deep, Tommy. But we can get an idea by dropping a stone and counting the seconds until it strikes."
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   He played the light of the flash over the floor and soon located a smooth round stone of the size of a baseball.
   This he tossed over the rim of the pit and awaited results.

   "Good grief!" exclaimed Tommy. "It's not falling!"

   What he said was true, for the stone poised lightly over the opening and drifted like a feather. Then slowly it
   moved, settling gradually into oblivion. Frank turned the flash downward and they watched in astonishment as the
   two-pound pebble floated deliberately down the center of the shaft at the rate of not more than one foot in each
   second.

   "Well, I'll be doggoned," breathed Frank admiringly. "Leland has done it. He has conquered gravity. For, in that
   pit at least, there is no gravity, or at any rate not enough to mention. It has been almost completely counteracted by
   some force he has discovered and now we know how to follow him down there. Come on Tommy, let's go!"

   And, suitting action to his words, Frank jumped into the mouth of the pit where he bobbed about for a moment
   as if he had jumped into a pool of water. Then slowly he sank from view, and Tommy followed him.
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   It was a most unique experience, that drop into the heart of the mountain. Practically weightless, the two young
   men found it quite difficult to negotiate the passage. For the first hundred or more feet they continued to bump about
   in the narrow shaft and each sustained painful bruises before he learned that the best and simplest method of
   accommodating himself to the strange condition was to remain absolutely motionless and allow the greatly
weakened gravity to take its course. Each movement of an arm or leg was accompanied by a change in direction of movement, and contact with the hard stone walls followed. If they endeavored to push themselves from the contact the result was likely to be an even more serious bump on the opposite side of the shaft. So they continued the leisurely drop into the unknown depth of the pit.

Frank had turned off the flashlamp, for its battery was giving out and he wished to conserve its remaining energy for eventualities. Thus they were in Stygian darkness for nearly a half-hour, though the green luminosity far beneath them grew stronger with each passing minute. It now revealed itself as a clearly defined disc of light that flickered and sputtered continually, frequently lighting the lower end of the shaft with an unusual burst of brilliance. Remotely distant it seemed though, and unconscionably slow in drawing nearer.

"How far do you think we must drop?" called Tommy to Frank, who was probably fifty feet below him in the shaft.

"Well, I figure we have fallen about a thousand feet so far," came the reply, "and my guess is that we are about one third of the way down."

"Then this shaft is over a half-mile deep, you think?"

"Yes, at least a thousand yards, I should say. And I hope his gravity neutralizing machinery doesn't quit all of a sudden and let us down."

"Me, too," called Tommy, who had not thought of that possibility.

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This was no joke, this falling into an unknown region so far beneath the surface of good old mother earth, thought Tommy. And how they would ever return was another thing that was not so funny. Frank was always rushing into things like this without counting the possible cost and--well--this might be the last time.

Gradually the mysterious light became stronger and soon they could make out the conformation of the rock walls they were passing at such a snail's pace. Layers of vari-colored rock showed here and there, and, at one point there was a stratum of gold-bearing or mica-filled rock that glistened with a million reflections and re-reflections. The air grew warmer and more humid as they neared the mysterious light source. They moved steadily, without acceleration, and Frank estimated the rate at about forty feet a minute. Then, with blinding suddenness, the light was immediately below and they drifted into a tremendous cavern that was illuminated by its glow.

Directly beneath the lower end of the shaft through which they had passed, there was a glowing disc of metal about fifteen feet in diameter. They drifted to its surface and sprawled awkwardly where they fell. Scrambling to gain a footing, they bounced and floated about like toy balloons before realizing that it would be necessary to creep slowly from the influence of that repelling force which had made the long drop possible without injury. Gravity met them at the disc's edge with what seemed to be unusual violence.

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At first it seemed that their bodies weighed twice the normal amount, but this feeling soon passed and they looked about them with incredulous amazement. The metal disc was quite evidently the medium through which the repelling force was set up in the shaft, and to this disc was connected a series of heavy cables that led to a pedestal nearby. On the pedestal was a controlling lever and this moved over a quadrant that was graduated in degrees, one end of the quadrant being labeled "Up" and the other "Down." The lever now stood at a point but a very few degrees from the center or "Zero" mark and on the down side. Frank pulled this lever over to the full "Down" position and they found that they could walk over the disc with normal gravity.

"I suppose," said Frank, "that if the lever is at the other end of the scale one would fall upward with full gravity acceleration--reversed. At zero, gravity is exactly neutralized, and the intermediate positions are useful in conveying materials or human beings up and down the shaft as desired. Very clever; but what is the reason for it all?"

In the precise center of the great cavern there was a dome or hemisphere of polished metal, and it was from this dome that the eery light emanated. At times, when the light died down, this dome gleamed with dull flickerings that threatened to vanish entirely. Then suddenly it would resume full brilliance, and the sight was marvelous beyond description. A slight hissing sound came from the direction of the dome, and this varied in intensity as did the light.

"Gosh!" said Tommy. "That looks like silver to me. And, if it is, what a wealthy man our friend Leland has become. He has spent his fortune well, even if he used it all to get to this."

"Yes, but where is he?" commented Frank. Then: "Leland! Leland!" he called.

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His voice echoed through the huge vault and re-echoed hollowly. But there was no reply save renewed flickerings from the dome.

Leaving the vicinity of the gravity disc, the two men advanced in the direction of the shining dome, which was about a quarter-mile from where they stood. Both perspired freely, for the air was very close and the temperature high. But the light of the dome was as cold as the light of a firefly and they had no hesitancy in drawing near. It was
a beautiful sight, this dome of silver with its flickering lights and perfect contour.

"By George, I believe it is silver," exclaimed Frank, when they were within a few feet of the dome. "No other metal has that precise color. And look! There is a wheelbarrow and some mining tools. Leland has been cutting away some of the material."

Sure enough, there was indubitable evidence of the truth of his statement. And the material was undoubtedly silver!

"Silver Dome," breathed Tommy, holding a lump of the metal in his hand. "A solid dome of pure silver--fifty feet high and a hundred in diameter. How much does that figure in dollars and cents, Frank?"

"Maybe it isn't solid," said Frank dryly, "though it's worth a sizeable fortune even if it is hollow. And we haven't found Leland."

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They circled the dome twice and looked into every corner of the great cavern, but there was no sign of the man for whom they searched. The wheelbarrow was half filled with lumps of the heavy metal, and maul and drill lay where they had been dropped by the lone miner. A cavity three feet across, and as many deep, appeared in the side of the dome to show that considerably more than one wheelbarrow load had been removed.

"Funny," grunted Tommy. "Seems almost like the old dome had swallowed him up."

At his words there came the terrific vibration. The light of the dome died out, leaving them in utter darkness, and from its interior there rose the mounting scream that had frightened old Thomas away. From so close by it was hideous, devastating; and the two men clung to each other in fright, expecting momentarily that the earth would give way beneath their feet and precipitate them into some terrible depth from which there could be no return.

Then the sound abruptly ceased and a gleam of light came from under the dome of silver. A crack appeared between its lower edge and the rocky floor of the cavern, and through this crack there shone a light of dazzling brilliancy--a warm light of rosy hue. Wider grew the opening until there was a full three feet between the floor and the bottom of the dome. Impelled by some irresistible force from within, the two men stumbled blindly to the opening, fell to the floor and rolled inside.

There was a heavy thud and the dome had returned to its normal position, with Frank and Tommy prisoners within its spacious hollow. The warm light bathed them with fearful intensity for a moment, then faded to a rosy glow that dulled their senses and quieted their nerves. Morpheus claimed them.

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When Frank awoke he found himself between silken covers, and for a moment he gazed thoughtfully at a high arched ceiling that was entirely unfamiliar. Then, remembering, he sprang from the downy bed to his feet. The room, the furnishings, his silken robe, everything was strange. His bed, he saw, was a high one, and the frame was of the same gleaming silver as the dome under which they had been trapped. The arched ceiling glowed softly with the same rosy hue as had the inner surface of the dome. A large pool of water invited him, the surface of the pool being no more than a foot below the point where it was built into the tile floor of the room. A large open doorway connected with a similar adjoining room, where he suspected Tommy had been taken. On his bare toes, he moved silently to the other room and saw that his guess had been correct. Tommy lay sleeping quietly beneath covers as soft as his own and amidst equal luxury of surroundings.

"Well," he whispered, "this doesn't look as though we would come to any harm. And I might as well take a dive in that pool."

Returning to his own room, he removed the silken garment with which he had been provided and was quietly immersed in the cool, invigorating water of the bath. His head cleared instantly.

"Hi there!" called Tommy from the doorway. "Why didn't you wake me up? Where are we, anyway?"

With dripping head and shoulders above the water, Frank was compelled to laugh at the sleepy-eyed, wondering expression on the blue-jowled face of his friend. "Thought you were dead to the world," he returned, "you old sleepy-head. And I don't know where we are, excepting that it is somewhere under the silver dome. What's more, I don't much care. You should get into this water. It's great!"

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So saying, he dived to the bottom of the pool and stood on his hands, his feet waving ludicrously above the surface. Tommy sniffed once and then made a quick dash for the pool in his own room. He was not to be outdone by his more energetic partner.

A half-hour later, shaved and attired in their own garments, which had been cleaned and pressed and hung neatly in the closets, they settled themselves for a discussion of the situation. Having tried the doors of both rooms and found them locked from the outside, there was no other course open to them. They must await developments.

"Looks like Leland has quite an establishment down here inside the mountain," ventured Tommy.

"Hm!" snorted Frank, "this place it none of Leland's work. He is probably a prisoner here, as are we. He just
stumbled on to the silver dome and was captured by whatever race is living down here beneath it, the same as we were. Who the real inhabitants are, and what the purpose of all this is, remains to be seen."

"You think we are in friendly hands?"

"These quarters do not look much like prison cells, Tommy, but I must admit that we are locked in. Anyhow, I’m not worrying, and we will soon learn our fate and have to be ready to meet it. The people who own this place must have everything they want, and they sure have some scientific knowledge that is not known to us on the surface."

"Wonder if they are humans?"

"Certainly they are. You never heard of wild beasts sleeping in beds like these, did you?"

Tommy laughed as he examined the exquisite hand-wrought figures on the silver bedstead. "No, I didn’t," he admitted; "but where on earth did they come from, and what are they doing here?"

"You ask too many questions," replied Frank, shrugging his broad shoulders. "We must simply wait for the answers to reveal themselves."

There was a soft rap at the door of Frank’s room, where the two men were talking.

"Come in," called Frank, chuckling at the idea of such consideration from their captors.

A key rattled in the lock and the door swung open to admit the handsomest man they had ever set eyes on. He was taller than Frank by several inches, standing no less than six feet five in his thin-soled sandals, and he carried himself with the air for an emperor. His marble-white body was uncovered with the exception of a loin cloth of silver hue, and lithe muscles rippled beneath his smooth skin as he advanced to meet the prisoners. His head, surmounted by curly hair of ebon darkness, was large, and his forehead high. The features were classic and perfectly regular. The corners of his mouth drew upward in a benign smile.

"Greetings," he said, in perfect English and in a soft voice, "to the domain of Theros. You need fear no harm from our people and will be returned to the upper world when the time comes. We hope to make your stay with us enjoyable and instructive, and that you will carry back kind memories of us. The morning meal awaits you now."

So taken aback were the two young Americans that they stared foolishly agape for a space. Then a tinkling laugh from the tall stranger set them once more at ease.

"You will pardon us, I hope," apologized Frank, "but this is all so unexpected and so unbelievable that your words struck me speechless. And I know that my friend was similarly affected--We place ourselves in your hands."

The handsome giant nodded understanding. "No offense was taken," he murmured, "since none was intended. And your feelings are not to be wondered at. You may call me Orrin."

He turned toward the open door and signified that they were to follow him. They fell in at his side with alacrity, both suddenly realizing that they were very hungry.

They followed in silent wonderment as Orrin led the way to a broad balcony that overlooked a great underground city—a city lighted by the soft glow from some vast lighting system incorporated in its vaulted ceiling high overhead. The balcony was many levels above the streets, which were alive with active beings of similar appearance to Orrin, these speeding hither and yon by means of the many lanes of traveling ways of which the streets were composed. The buildings—endless rows of them lining the orderly streets—were octagonal in shape and rose to the height of about twenty stories, as nearly as could be judged by earthly standards. There were no windows, but at about every fifth floor there was an outer silver-railed balcony similar to the one on which they walked. The air was filled with bowl-shaped flying ships that sped over the roof tops in endless procession and without visible means of support or propulsion. Yet the general effect of the busy scene was one of precise orderliness, unmarrred by confusion or distracting noises.

Orrin vouchsafed no explanations and they soon reentered the large building of which the balcony was a part. Here they were conducted to a sumptuously furnished dining room where their breakfast awaited them. During the meal, which consisted of several courses of fruits and cereals entirely strange to Frank and Tommy, they were tended by Orrin with the utmost deference and most painstaking attention. He anticipated their every want and their thoughts as well. For, when Frank endeavored to ask one of the many questions with which his mind was filled, he was interrupted by a wave of the hand and a smile from their placid host.

"It is quite clear to me that you have many questions to propound," said Orrin, "and this is not a matter of wonder. But it is not permitted that I enlighten you on the points you have in mind. You must first finish your meal. Then it is to be my privilege to conduct you to the presence of Phaestra, Empress of Theros, who will reveal all. May I ask that you be patient until then?"

So friendly was his smile and so polished his manner that they restrained their impatience and finished the
excellent breakfast in polite silence.

And Orrin was as good as his word, for, no sooner had they finished when he led them from the room and showed the way to the elevator which conveyed them to the upper floor of the building.

From the silver-grilled cage of the lift they stepped into a room of such beauty and magnificence of decoration that they gazed about them in wondering admiration. The paneling and mouldings were of hammered silver that gleamed with polished splendor in the soft rose glow of the hidden lights. The hangings were of heavy plush of deep green hue and bore intricate designs of silver thread woven into the material. At the opposite side of the room there was a pair of huge double doors of chased silver and on either side of this pretentious portal there stood an attendant attired as was Orrin, but bearing a silver scepter to denote his official capacity.

"Phaestra awaits the visitors from above," intoned one of the attendants. Both bowed stiffly from the waist when Orrin led the two young scientists through the great doors which had opened silently and majestically at their approach.

If the outer room was astonishing in its sumptuousness of decoration and furnishing, the one they now entered was positively breath-taking. On every side there were the exquisite green and silver hangings. Tables, divans, and rugs of priceless design and workmanship. But the beauty of the surroundings faded into insignificance when they saw the empress.

A canopied dais in the center of the room drew their attention and they saw that Phaestra had risen from her seat in a deeply cushioned divan and now stood at its side in an attitude of welcome. Nearly as tall as Frank, she was a figure of commanding and imperious beauty. The whiteness of her body was accentuated by the silver embroidered and tightly fitted black vestments that covered yet did not conceal its charms. A halo of glorious golden hair surmounted a head that was poised expectantly alert above the perfectly rounded shoulders. The exquisite oval of her face was chiseled in features of transcendent loveliness. She spoke, and, at sound of her musical voice, Frank and Tommy were enslaved.

"Gentlemen of the upper world," she said gently, "you are welcome to Theros. Your innermost thoughts have been recorded by our scientists and found good. With a definite purpose in mind, you learned of the existence of the silver dome of Theros, yet you came without greed or malice and we have taken you in to enlighten you on the many questions that are in your minds and to return you to mankind with a knowledge of Theros--which you must keep secret. You are about to delve into a mystery of the ages; to see and learn many things that are beyond the ken of your kind. It is a privilege never before accorded to beings from above."

"We thank you, oh, Queen," spoke Frank humbly, his eyes rivetted to the gaze of those violet orbs that seemed to see into his very soul. Tommy mumbled some commonplace.

"Orrin--the sphere!" Phaestra, slightly embarrassed by Frank's stare, clapped her hands.

At her command, Orrin, who had stood quietly by, stepped to the wall and manipulated some mechanism that was hidden by the hangings. There was a musical purr from beneath the floor, and, through a circular opening which appeared as if by magic, there rose a crystal sphere of some four feet in diameter. Slowly it rose until it reached the level of their eyes and there it came to rest. The empress raised her hands as if in invocation and the soft glow of the lights died down, leaving them in momentary darkness. There came a slight murmur from the sphere, and it lighted with the eerie green flickerings they had observed in the dome of silver.

Fascinated by the weaving lights within, they gazed into the depths of the crystal with awed expectancy. Phaestra spoke.

"Men from the surface," she said, 'you, Frank Rowley, and you, Arnold Thompson, are about to witness the powers of that hemisphere of metal you were pleased to term 'Silver Dome.' As you rightly surmised, the dome is of silver--mostly. There are small percentages of platinum, iridium, and other elements, but it is more than nine-tenths pure silver. To you of the surface the alloy is highly valuable for its intrinsic worth by your own standards, but to us the value of the dome lies in its function in revealing to us the past and present events of our universe. The dome is the 'eye' of a complicated apparatus which enables us to see and hear any desired happening on the surface of the earth, beneath its surface, or on the many inhabited planets of the heavens. This is accomplished by means of extremely complex vibrations radiated from the hemisphere, these vibrations penetrating earth, metals, buildings, space itself, and returning to our viewing and sound reproducing spheres to reveal the desired past or present occurrences at the point at which the rays of vibrations are directed.

In order to view the past on our own planet, the rays, which travel at the speed of light, are sent out in a huge circle through space, returning to earth after having spent the requisite number of years in transit. Instantaneous
effect is secured by a connecting beam that ties together the ends of the enormous arc. This, of course, is beyond your comprehension, since the Ninth Dimension is involved. When it is desired that events of the present be observed, the rays are projected direct. The future can not be viewed, since, in order to accomplish this, it would be necessary that the rays travel at a speed greater than that of light, which is manifestly impossible."

"Great guns!" gasped Frank. "This crystal sphere then, is capable of bringing to our eyes and ears the happenings of centuries past?"

"It is, my dear Frank," said Phaestra, "and I would that I were able to describe the process more clearly." She smiled, and in the unearthly light of the sphere she appeared more beautiful than before, if such a thing were possible.

On the pedestal which supported the sphere there was a glittering array of dials and levers. Several of these controls were now adjusted by Phaestra, the delicate motions of her tapered fingers being watched by the visitors with intense admiration. There came a change in the note of the sphere, a steadying of the flickerings within.

"Behold!" exclaimed Phaestra.

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They gazed into the depths of the sphere and lost all sense of detachment from the scene depicted therein. It seemed they were at a point several thousand miles from the surface of a planet. A great continent spread beneath them, its irregular shore line being clearly outlined against a large body of water. Here and there the surface was obscured by great white patches of clouds that cast their shadows below.

"Atlantis!" breathed Phaestra reverently.

The lost continent of mythology! The fabled body of land that was engulfed by the Atlantic thousands of years ago—a fact!

Tommy glanced at Frank, noting that he had withdrawn his gaze from the sphere and was devouring Phaestra with his eyes. As if drawn by the ardor of his observation, she raised her own eyes from the sphere to meet those of the handsome visitor. Obviously confused, she dropped her long lashes and turned nervously to the controls. Tommy experienced a sudden feeling of dread. Surely his pal was not falling in love with this Theronian empress!

Then there came another change in the note of the sphere and once more they lost themselves in contemplation of the scene within. The surface of the lost continent was rushing madly to meet them. With terrific velocity they seemed to be falling. An involuntary gasp was forced from Tommy's lips. Mountains, valleys, rivers could now be discerned.

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Then the scene shifted slightly and they were stationary, directly above a large seacoast city. A city of great beauty it was, and its buildings were of the same octagonal shape as were those of Theros! There could be but one inference—the Theronians were direct descendants of those inhabitants of ancient Atlantis.

"Yes," sighed Phaestra, in answer to the thought she had read, "our ancestors were those you now see in the streets of this city of Atlantis. A marvelous race they were, too. When the rest of the world was still savage and unenlightened, they knew more of the arts and sciences than is known on the surface to-day. The mysteries of the Fourth Dimension they had already solved. Their telescopes were of such power that they knew of the existence of intelligent beings on Mars and Venus. They had conquered the air. They knew of the relation between gravity and magnetism but recently propounded by your Einstein. They were prosperous, happy. Then— but watch!"

Faint sounds of the life of the city came to their ears. A swarm of monoplanes roared past just beneath them. The streets were crowded with rapidly moving vehicles, the roof-tops with air-craft. Then suddenly the scene darkened; a deep rumbling came from the sea. As they watched in fascinated wonder, a great chasm opened up through the heart of the city. Tall buildings swayed and crumbled, falling into heaps of twisted metal and crushed masonry and burying hundreds of the populace in their fall. The confusion was indescribable, the uproar terrific, and within the space of a very few minutes the entire city was a mass of ruins, fully half of the wrecked area having been swallowed up by the heaving waters of the ocean.

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Phaestra stifled a sob. "Thus it began," she stated. "Trovus was first—the city you just saw—then came three more of the cities of the western coast in rapid succession. Computations of the scientists showed that the upheaval was widespread and that the entire continent was to be engulfed in a very short time. The exodus began, but it was too late, and only a few hundred people were able to escape the continent before it was finally destroyed. The ocean became the tomb of two hundred millions. The handful of survivors reached the coast of what is now North America. But the rigors of the climate proved severe and more than three-quarters of them perished within a few days after their planes landed. Then the rest took to the caves along the shore, and for a while were safe."

She manipulated the controls once more and there was a quick shift to another coast, a rugged, wave-beaten shore. Closer they drew until they observed a lofty palisade that extended for miles along the barren waterfront.
They saw a fire atop this elevation and active men and women at various tasks within the narrow circle of its warmth. A cave mouth opened at the brink of the precipice near the spot they occupied.

Then came a repetition of the upheaval at Trovus. The ocean rushed in and beat against the cliff with such ferocity that its spray was tossed hundreds of feet in the air. The earth shook and the group of people around the fire made a hasty retreat to the mouth of the cave. The sky darkened and the winds howled with demoniac fury. Quake after quake rent the rugged cliffs: huge sections toppled into the angry waters. Then a great tidal wave swept in and covered everything, cliffs, cave mouths and all. Nought remained where they had been but the seething waters.

"But some escaped!" exulted Phaestra, "and these discovered Theros. Though many miles of the eastern seaboard of your United States were submerged and the coastline entirely altered, these few were saved. Their cave connected with a long passage, a tunnel that led into the bowels of the earth. With the outer entrance blocked by the upheaval they had no alternative save to continue downward."

"They traveled for days and days. Some were overcome by hunger and fell by the wayside. The most hardy survived to reach Theros, a series of enormous caverns that extends for hundreds of miles under the surface of your country. Here they found subterranean lakes of pure water; forests, game. They had a few tools and weapons and they established themselves in this underground world. From that small beginning came this!"

Phaestra's slim fingers worked rapidly at the controls. The scenes shifted in quick succession. They were once more in the present, and seemed to be traveling speedily through the underground reaches of Theros. Now they were racing through a long lighted passage; now over a great city similar to the one in which they had arrived. Here they visited a huge workshop or laboratory; there a mine where radium or cobalt or platinum was being wrested from the vitals of the unwilling earth. Then they visited a typical Theronian household, saw the perfect peace and happiness in which the family lived. Again they were in a large power plant where direct application of the internal heat of the earth as obtained through deep shafts bored into the interior was utilized in generating electricity.

They saw vast quantities of supplies, fifty-ton masses of machinery, moved from place to place as lightly as feathers by use of the gravity discs, those heavily charged plates whose emanations counteracted the earth's attraction. In one busy laboratory they saw an immense television apparatus and heard scientists discussing moot questions with inhabitants of Venus, whose images were depicted on the screen. They witnessed a severe electrical storm in the huge cavern arch over one of the cities, a storm that condensed moisture from the artificially oxygenated and humidified atmosphere in such blinding sheets as to easily explain the necessity for well-roofed buildings in the underground realm. And, in all the speech and activities of the Theronians, there was evident that all-pervading feeling of absolute contentment and freedom from care.

"What I can not understand," said Frank, during a quiet interval, "is why the Theronians have never migrated to the surface. Surely, with all your command of science and mechanics, that would be easy."

"Why? Why?" Phaestra's voice spoke volumes. "Here--I'll show you the reason."

And again the scene in the sphere changed. They were on the surface and a few years in the past—at Chateau Thierry. They saw their fellow men mangled and broken; saw human beings shot down by hundreds in withering bursts of machine-gun fire; saw them in hand-to-hand bayonet fights; gassed and in delirium from the horror of it all.

They traveled over the ocean; saw a big passenger liner the victim of torpedo fire; saw babies tossed into the water by distracted mothers who jumped in after them to join them in death.

A few years were passed by and they saw gang wars in Chicago and New York; saw militia and picketing strikers in mortal combat; saw wealthy brokers and bank presidents turn pistols on themselves following a crash in the stock market; government officials serving penitentiary terms for betrayal of the people's trust; opium dens, speakeasies, sex crimes. It was a fearful indictment.

"Ah, no," said Phaestra kindly, "the surface world has not yet emerged from savagery. We should be unwelcome were we to venture outside. And now we come to the reason for your visit. You come in search of one Edwin Leland, a fellow worker at one time. Your motives are above reproach. But Leland came as a greedy searcher of riches. We brought him within to teach him the error of his ways and to beg him to desist from his efforts at destroying the dome of silver. He alone knew the secret."

"Then you followed him and we took you in for similar reasons, though our scientists found very quickly that your mental reactions were of entirely different type from Leland's and that the secret would be safe in your keeping. Leland remains obdurate. He threatens us with physical violence, and his reactions to the thought-reading machines are of the most treacherous sort. We must keep him with us. He shall remain unharmed, but he must not be allowed to return. That is the story. You two are free to leave when you choose. I ask not that you give your word to keep the secret of 'Silver Dome.' I know it is not necessary."
The lights had resumed their normal glow, and the marvelous sphere returned to its receptacle beneath the floor. Phaestra resumed her seat on the canopied divan. Frank dropped to a seat on the edge of the dais. Tommy and Orrin remained standing, Tommy lost in thought and Orrin stolidly mute. The empress avoided Frank's gaze studiously. Her cheeks were flushed; her eyes bright with emotion.

Frank was first to break the silence. "Leland is in solitary confinement?" he asked.

"For the present he is under guard," replied Phaestra. "He was quite violent and it was necessary to disarm him after he had killed one of my attendants with a shot from his automatic pistol. When he agrees to submit peacefully, he shall be given the freedom of Theros for the remainder of his life."

"Perhaps," suggested Frank, "if I spoke to him...."

"The very thing." Phaestra thanked him with her wondrous eyes.

A high pitched note rang out from behind the hangings, and, in rapid syllables of the language of Theros, a voice broke forth from the concealed amplifiers. Orrin, startled from his stoicism, sprang to the side of his empress. She rose from her seat as the voice completed its excited message.

"It is Leland," she said calmly. "He has escaped and recovered his pistol. I have been told that he is now at large in the palace, terrorizing the household. We have no weapons here, you see."

"Good God!" shouted Frank. "Suppose he should come here?"

He jumped to his feet just as a shot rang out in the antechamber. Orrin dashed to the portal when a second shot spat forth from the automatic which must certainly be in the hands of a madman. The doors swung wide and Leland, hair disarranged and bloodshot eyes staring, burst into the room. Orrin went down at the next shot and the hardly recognizable scientist advanced toward the dais.

When he saw Frank and Tommy he stopped in his tracks. "So you two have been following me!" he snarled. "Well, you won't keep me from my purpose. I'm here to kill this queen of hell!"

Once more he raised his automatic, but Frank had been watching closely and he literally dove from the steps of the dais to the knees of the deranged Leland. As beautiful a tackle as he had ever made in his college football days laid the maniac low with a crashing thud that told of a fractured skull. The bullet intended for Phaestra went wide, striking Tommy in the shoulder.

Spun half way around by the impact of the heavy bullet, Tommy fought to retain his balance. But his knees went suddenly awry and gave way beneath him. He crumpled helplessly to the floor, staring foolishly at the prostrate figure of Leland and at Frank, who had risen to his feet and now faced the beautiful empress of Theros. Strange lights danced before Tommy's eyes, and he found it difficult to keep the pair in focus. But he was sure of one thing--his pal was unharmed. Then the two figures seemed to merge into one and he blinked his eyes rapidly to clear his failing vision. By George, they were in each other's arms! Funny world--above or below--it didn't seem to make any difference. But it was a tough break for Frank--morganatic marriage and all that. No chance--well--

Tommy succumbed to his overpowering drowsiness.

The awakening was slow, but not painful. Rather there was a feeling of utter contentment, of joy at being alive. A delicious languor pervaded Tommy's being as he turned his head on a snow white silken pillow and stared at the figure of the white-capped nurse who was fussing with the bottles and instruments that lay on an enameled table beside the bed. Memory came to him immediately. He felt remarkably well and refreshed. Experimentally he moved his left shoulder. There was absolutely no pain and it felt perfectly normal. He sat erect in his surprise and felt the shoulder with his right hand. There was no bandage, no wound. Had he dreamed of the hammer blow of that forty-five caliber bullet?

His nurse, observing that her patient had recovered consciousness, broke forth in a torrent of unintelligible Theronian, then rushed from the room.

He was still examining his unscarred shoulder in wonder, when the nurse returned, with Frank Rowley at her heels. Frank laughed at the expression of his friend's face.

"What's wrong, old-timer?" he asked.

"Why--I--thought that fool of a Leland had shot me in the shoulder," stammered Tommy, "but I guess I dreamed it. Where are we? Still in Theros?"

"We are." Frank sobered instantly, and Tommy noted with alarm that his usually cheerful features were haggard and drawn and his eyes hollow from loss of sleep. "And you didn't dream that Leland shot you. That shoulder of yours was mangled and torn beyond belief. He was using soft nosed bullets, the hell-hound!"

"Then how--?"

* * * * *
"Tommy, these Theronians are marvelous. We rushed you to this hospital and a half-dozen doctors started working on you at once. They repaired the shattered bones by an instantaneous grafting process, tied the severed veins and arteries and closed the gaping wound by filling it with a plastic compound and drawing the edges together with clamps. You were anaesthetized and some ray machine was used to heal the shoulder. This required but ten hours and they now say that your arm is as good as ever. How does it feel?"

"Perfectly natural. In fact I feel better than I have in a month." Tommy observed that the nurse had left the room and he jumped from his bed and capered like a school boy.

This drew no sign of merriment from Frank, and Tommy scrutinized him once more in consternation. "And you," he said, "what is wrong with you?"

"Don't worry about me," replied Frank impatiently. Then, irrelevantly, he said "Leland's dead."

"Should be. I knew we shouldn't have started out to help him. But, Frank, I'm concerned about you. You look badly." Tommy was getting into his clothes as he spoke.

"Forget it, Tommy. You've been sleeping for two days, you know--part of the cure--and I haven't had much rest during that time. That is all."

"It's that Phaestra woman," Tommy accused him.

"Well, perhaps. But I'll get over it, I suppose. Tommy, I love her. But there's no chance for me. Haven't seen her since the row in the palace. Her council surrounds her continually and I have been advised to-day that we are to be returned as quickly as you are up and around. That means immediately now."

"Good. The sooner the better. And you just forget about this queen as soon as you are able. She's a peach, of course, but not for you. There's lots more back in little old New York." But Frank had no reply to this sally.

* * * * *

There came a knock at the door and Tommy called, "Come in."

"I see you have fully recovered," said the smiling Theronian who entered at the bidding, "and we are overjoyed to know this. You have the gratitude of the entire realm for your part in the saving of our empress from the bullets of the madman."

"I?"

"Yes. You and your friend. And now, may I ask, are you ready to return to your own land?"

Tommy stared. "Sure thing," he said, "or rather, I will be in a few minutes."

"Thank you. We shall await you in the transmitting room." The Theronian bowed and was gone.

"Well, I like that," said Tommy. "He hands me an undeserved compliment and then asks how soon we can beat it. A 'here's your hat, what's your hurry' sort of thing."

"It's me they're anxious to be rid of," remarked Frank, shrugging his broad shoulders, "and perhaps it is just as well."

"You bet it is!" agreed Tommy enthusiastically, "and I'm in favor of making it good and snappy." He completed his toilet as rapidly as possible and then turned to face the down-hearted Frank.

"How do we go? The way we came?" he asked.

* * * * *

"No, Tommy. They have closed off the shaft that led from the cavern of the silver dome. They are taking no more chances. It seems that the shaft down which we floated was constructed by the Theronians; not by Leland. They had used it and the gravity disc to transport casual visitors to the surface, who occasionally mixed with our people in order to learn the languages of the upper world and to actually touch and handle the things they were otherwise able to see only through the medium of Silver Dome and the crystal spheres. Further visits to the surface are now forbidden, and we are to be returned by a remarkable process of beam transmission of our disintegrated bodies."

"Disintegrated?"

"Yes. It seems they have learned to dissociate the atoms of which the human body is composed and to transmit them to any desired point over a beam of etheric vibrations, then to reassemble them in the original living condition."

"What? You mean to say we are to be shot to the surface through the intervening rock and earth? Disintegrated and reintegrated? And we'll not even be bent, let alone busted?"

* * * * *

This time he was rewarded by a laugh. "That's right. And I have gone through the calculations with one of the Theronian engineers and can find no flaw in the scheme. We're safe in their hands."

"If you say so, Frank, it's okay with me. Let's go!"

Reluctantly his friend lifted his athletic bulk from the chair. In silence he led the way to the transmitting room of the Theronian scientists.
Here they were greeted by two savants with whom Frank was already acquainted, Clarux and Rhonus by name. A bewildering array of complex mechanisms was crowded into the high-ceilinged chamber and, prominent among them, was one of the crystal spheres, this one of somewhat smaller size than the one in the palace of Phaestra.

"Where do you wish to arrive?" asked Clarux.

"As near to my automobile as possible," replied Frank, taking sudden interest in the proceedings. "It is parked in the lane between Leland's house and the road."

Tommy looked quickly in his direction, encouraged by the apparent change in his attitude. The scientists proceeded to energize the crystal sphere. They were bent upon speeding the parting guests. Their beloved empress was to be saved from her own emotions.

Quick adjustments of the controls resulted in the locating of Frank's car, which was still buried to its axles in snow. The scene included Leland's house, or rather its site, for it appeared to have been utterly demolished by some explosion within.

* * * * *

Tommy raised questioning eyebrows.

"It was necessary," explained Rhonus, "to destroy the house in obliterating all traces of our former means of egress. It has been commanded that you two be returned safely, and we are authorized to trust implicitly in your future silence regarding the existence of Theros. This is satisfactory, I presume?"

Both Tommy and Frank nodded agreement.

"Are you ready, gentlemen?" asked Clarux, who was adjusting a mechanism that resembled a huge radio transmitter. Its twelve giant vacuum tubes glowed into life as he spoke.

"We are," chimed the two visitors.

They were requested to step to a small circular platform that was raised about a foot from the floor by means of insulating legs. Above the table there was an inverted bowl of silver in the shape of a large parabolic reflector.

"There will be no alarming sensations," averred Clarux. "When I close the switch the disintegrating energy from the reflector above will bathe your bodies for a moment in visible rays of a deep purple hue. You may possibly experience a slight momentary feeling of nausea. Then--presto!--you have arrived."

"Shoot!" growled Frank from his position on the stand.

Clarux pulled the switch and there was a murmur as of distant thunder. Tommy blinked involuntarily in the brilliant purple glow that surrounded him. Then all was confusion in the transmitting room. Somebody had rushed through the open door shouting, "Frank! Frank!" It was the empress Phaestra.

* * * * *

In a growing daze Tommy saw her dash to the platform, seize Frank in a clutch of desperation. There was a violent wrench as if some monster were twisting at his vitals. He closed his eyes against the blinding light, then realized that utter silence had followed the erstwhile confusion. He sat in Frank's car--alone.

The journey was over, and Frank was left behind. With awful finality it came to him that there was nothing he could do. It was clear that Phaestra had wanted his pal, needed him--come for him. From the fact that Frank remained behind it was evident that she had succeeded in retaining him. A sickening fear came to Tommy that she had been too late; that Frank's body was already partly disintegrated and that he might have paid the price of her love with his life. But a little reflection convinced him that if this were the case a portion of his friend's body would have reached the intended destination. Then, unexplainably, he received a mental message that all was well.

* * * * *

Considerably heartened, he pressed the starter button and the cold motor of Frank's coupe turned over slowly, protestingly. Finally it coughed a few times, and, after considerable coaxing by use of the choke, ran smoothly. He proceeded to back carefully through the drifts toward the road, casting an occasional regretful glance in the direction of the demolished mansion.

He would have some explaining to do when he returned to New York. Perhaps--yes, almost certainly, he would be questioned by the police regarding Frank's disappearance. But he would never betray the trust of Phaestra. Who indeed would believe him if he told the story? Instead, he would concoct a weird fabrication regarding an explosion in Leland's laboratory, of his own miraculous escape. They could not hold him, could not accuse him of murder without producing a body--the corpus delicti, or whatever they called it.

Anyway, Frank was content. So was Phaestra.

Tommy swung the heavy car into the road and turned toward New York, alone and lonely--but somehow happy; happy for his friend.
Doctor Spechaug stopped running, breathing deeply and easily where he paused in the middle of the narrow winding road. He glanced at his watch. Nine a.m. He was vaguely perplexed because he did not react more emotionally to the blood staining his slender hands.

It was fresh blood, though just beginning to coagulate; it was dabbed over his brown serge suit, splotching the neatly starched white cuffs of his shirt. His wife always did them up so nicely with the peasant's love for trivial detail.

He had always hated the silent ignorance of the peasants who surrounded the little college where he taught psychology. He supposed that he had begun to hate his wife, too, when he realized, after taking her from a local barnyard and marrying her, that she could never be anything but a sloe-eyed, shuffling peasant.

He walked on with brisk health down the narrow dirt road that led toward Glen Oaks. Elm trees lined the road. The morning air was damp and cool. Dew kept the yellow dust settled where spots of sunlight came through leaves and speckled it. Birds darted freshly through thickly hung branches.

He had given perennial lectures on hysterical episodes. Now he realized that he was the victim of such an episode. He had lost a number of minutes from his own memory. He remembered the yellow staring eyes of the breakfast eggs gazing up at him from a sea of grease. He remembered his wife screaming--after that only blankness.

He stopped on a small bridge crossing Calvert's Creek, wiped the blood carefully from his hands with a green silk handkerchief. He dropped the stained silk into the clear water. Silver flashes darted up, nibbled the cloth as it floated down. He watched it for a moment, then went on along the shaded road.

This was his chance to escape from Glen Oaks. That was what he had wanted to do ever since he had come here five years ago to teach. He had a good excuse now to get away from the shambling peasants whom he hated and who returned the attitude wholeheartedly--the typical provincial's hatred of culture and learning.

Then he entered the damp, chilled shadows of the thick wood that separated his house from the college grounds. It was thick, dense, dark. One small corner of it seemed almost ordinary, the rest was superstition haunted, mysterious and brooding. This forest had provided Doctor Spechaug many hours of escape.

He had attempted to introspect, but had never found satisfactory causes for his having found himself running through these woods at night in his bare feet. Nor why he sometimes hated the sunlight.

* * * * *

He tensed in the dank shadows. Someone else was in this forest with him. It did not disturb him. Whatever was here was not alien to him or the forest. His eyes probed the mist that slithered through the ancient mossy trees and hanging vines. He listened, looked, but found nothing. Birds chittered, but that was all. He sat down, his back against a spongy tree trunk, fondled dark green moss.

As he sat there, he knew that he was waiting for someone. He shrugged. Mysticism was not even interesting to him, ordinarily. Still, though a behaviorist, he upheld certain instinctual motivation theories. And, though reluctantly, he granted Freud contributory significance. He could be an atavist, a victim of unconscious regression. Or a prey of some insidious influence, some phenomena a rather childish science had not yet become aware of. But it was of no importance. He was happier now than he had ever been. He felt free--young and new. Life seemed worth living.

Abruptly, with a lithe liquid ease, he was on his feet, body tense, alert. Her form was vaguely familiar as she ran toward him. She dodged from his sight, then re-appeared as the winding path cut behind screens of foliage.

She ran with long smooth grace, and he had never seen a woman run like that. A plain skirt was drawn high to allow long bronzed legs free movement. Her hair streamed out, a cloud of red-gold. She kept looking backwards and it was obvious someone was chasing her.

She ran with long smooth grace, and he had never seen a woman run like that. A plain skirt was drawn high to allow long bronzed legs free movement. Her hair streamed out, a cloud of red-gold. She kept looking backwards and it was obvious someone was chasing her.

He began sprinting easily toward her, and as the distance shortened, he recognized her. Edith Bailey, a second-year psychology major who had been attending his classes two semesters. Very intelligent, reclusive, not a local-grown product. Her work had a grimness about it, as though psychology was a dire obsession, especially abnormal psychology. One of her theme papers had been an exhaustive, mature but somehow overly determined, treatise on self-induced hallucination and auto-suggestion. He had not been too impressed because of an unjustified emphasis on supernormal myth and legend, including werewolves, vampires, and the like.

She sprang to a stop like a cornered deer as she saw him suddenly blocking the path. She turned, then stopped and turned back slowly. Her eyes were wide, cheeks flushed. Taut breasts rose and fell deeply, and her hands were
poised for flight.

But she wasn't looking at his face. Her gaze was on the blood splattering his clothes.

He was breathing deeply too. His heart was swelling with exhilaration. His blood flowed hotly. Something of the whirling ecstasy he had known back in his student days as a track champion returned to him—the mad bursting of the wind against him, the wild passion of the dash.

A burly figure came lurching after her down the path. A tramp, evidently, from his filthy, smoke-sodden clothes and thick stubble of beard. He recalled the trestle west of the forest where the bindlestiffs from the Pacific Fruit line jungled up at nights, or during long layovers. Sometimes they came into the forest.

He was big, fat and awkward. He was puffing and blowing, and he began to groan as Doctor Spechaug's fists thudded into his flesh. The degenerate fell to his knees, his broken face blowing out bloody air. Finally he rolled over onto his side with a long sighing moan, lay limply, very still. Doctor Spechaug's lips were thin, white, as he kicked savagely. He heard a popping. The bum flopped sidewise into a pile of dripping leaves.

He stepped back, looked at Edith Bailey. Her full red lips were moist and gleaming. Her oddly opaque eyes glowed strangely at him. Her voice was low, yet somehow, very intense.

"Wonderful laboratory demonstration, Doctor. But I don't think many of your student embryos would appreciate it."

* * * * *

Doctor Spechaug nodded, smiled gently. "No. An unorthodox case." He lit a cigarette, and she took one. Their smoke mingled with the dissipating morning mist. And he kept on staring at her. A pronounced sweater girl with an intellect. This—he could have loved. He wondered if it were too late.

Doctor Spechaug had never been in love. He wondered if he were now with this fundamental archetypal beauty. "By the way," he was saying, "what are you doing in this evil wood?"

Then she took his arm, very naturally, easily. They began walking slowly along the cool, dim path.

"Two principal reasons. One, I like it here; I come here often. Two, I knew you always walk along this path, always late for your eight o'clock class. I've often watched you walking here. You walk beautifully."

He did not comment. It seemed unnecessary now.

"The morning's almost gone," she observed. "The sun will be out very warm in a little while. I hate the sun."

On an impulse he said: "I'm going away. I've wanted to get out of this obscene nest of provincial stupidity from the day I first came here. And now I've decided to leave."

"What are you escaping from?"

He answered softly. "I don't know. Something Freudian, no doubt. Something buried, buried deep. Something too distasteful to recognize."

She laughed. "I knew you were human and not the cynical pseudo-intellectual you pretended to be. Disgusting, isn't it?"

"What?"

"Being human, I mean."

"I suppose so. I'm afraid we're getting an extraordinarily prejudiced view. I can't help being a snob here. I despise and loathe peasants."

"And I," she admitted. "Which is merely to say, probably, that we loathe all humanity."

"Tell me about yourself," he said finally.

"Gladly. I like doing that—to one who will understand. I'm nineteen. My parents died in Hungary during the War. I came here to America to live with my uncle. But by the time I got here he was dead, too. And he left me no money, so there was no sense being grateful for his death. I got a part-time job and finished high school in Chicago. I got a scholarship to—this place." Her voice trailed off. She was staring at him.

"Hungary!" he said and repeated it. "Why—I came from Hungary!"

Her grip on his arm tightened. "I knew—somehow. I remember Hungary—its ancient horror. My father inherited an ancient castle. I remember long cold corridors and sticky dungeons, and cobwebbed rooms thick with dust. My real name is Burhmann. I changed it because I thought Bailey more American."

"Both from Hungary," mused Doctor Spechaug. "I remember very little of Hungary. I came here when I was three. All I remember are the ignorant peasants. Their dumb, blind superstition—their hatred for—"

"You're afraid of them, aren't you?" she said.

He started. "The peasants. I—" He shook his head. "Perhaps."

"You're afraid," she said. "Would you mind telling me, Doctor, how these fears of yours manifest themselves?"

He hesitated; they walked. Finally he answered. "I've never told anyone but you. There are hidden fears. And they reveal themselves consciously in the absurd fear of seeing my own reflection. Of not seeing my shadow. Of——"

She breathed sharply. She stopped walking, turned, stared at him. "Not—not seeing your—reflection!"
He nodded.
"Not seeing your--shadow--!"
"Yes."
"And the full moon. A fear of the full moon, too?"
"But how did you know?"
"And you're allergic to certain metals, too. For instance--silver?"
He could only nod.
"And you go out in the night sometimes--and do things--but you don't remember what?"
He nodded again.
Her eyes glowed brightly. "I know. I know. I've known those same obsessions ever since I can remember."
Doctor Spechaug felt strangely uneasy then, a kind of dreadful loneliness.
"Superstition," he said. "Our Old World background, where superstition is the rule, old, very old superstition.
Frightened by them when we were young. Now those childhood fixations reveal themselves in crazy symptoms."
He took off his coat, threw it into the brush. He rolled up his shirt sleeves. No blood visible now. He should be
able to catch the little local passenger train out of Glen Oaks without any trouble. But why should there be any
trouble? The blood----
He thought too that he might have killed the tramp, that popping sound.
She seemed to sense his thoughts. She said quickly: "I'm going with you, Doctor."
He said nothing. It seemed part of the inevitable pattern.
* * * * *
They entered the town. Even for mid-morning the place was strangely silent, damply hot, and still. The 'town'
consisted of five blocks of main street from which cow paths wound off aimlessly into fields, woods, meadows and
hills. There was always a few shuffling, dull-eyed people lolling about in the dusty heat. Now there were no people
at all.
As they crossed over toward the shady side, two freshly clothed kids ran out of Davis' Filling Station, stared at
them like vacant-eyed lambs, then turned and spurted inside Ken Wanger's Shoe Hospital.
Doctor Spechaug turned his dark head. His companion apparently hadn't noticed anything ominous or peculiar.
But to him, the whole scene was morose, fetid and brooding.
They walked down the cracked concrete walk, passed the big plate-glass windows of Murphy's General Store
which were a kind of fetish in Glen Oaks. But Doctor Spechaug wasn't concerned with the cultural significance of
the windows. He was concerned with not looking into it.
And oddly, he never did look at himself in the glass, neither did he look across the street. Though the glass did
pull his gaze into it with an implacable somewhat terrible insistence. And he stared. He stared at that portion of the
glass which was supposed to reflect Edith Bailey's material self—but didn't reflect anything. Not even a shadow.
They stopped. They turned slowly toward each other. He swallowed hard, trembled slightly. And then he knew
deep and dismal horror. He studied that section of glass where her image was supposed to be. It still wasn't.
He turned. And she was still standing there. "Well?"
And then she said in a hoarse whisper: "Your reflection--where is it?"
And all he could say was: "And yours?"
Little bits of chuckling laughter echoed in the inchoate madness of his suddenly whirling brain. Echoing years
of lecture on--cause and effect, logic. Little bits of chuckling laughter. He grabbed her arm.
"We--we can see our own reflections, but we can't see each other's!"
She shivered. Her face was terribly white. "What--what is the answer?"
No. He didn't have it figured out. Let the witches figure it out. Let some old forbidden books do it. Bring the
problem to some warlock. But not to him. He was only a Doctor of Philosophy in Psychology. But maybe--
"Hallucinations," he muttered faintly. "Negative hallucinations."
"Doctor. Did you ever hear the little joke about the two psychiatrists who met one morning and one said,
'You're feeling excellent today. How am I feeling?'"
He shrugged. "We have insight into each other's abnormality, but are unaware of the same in ourselves."
"That's the whole basis for psychiatry, isn't it?"
"In a way. But this is physical--functional--when psychiatry presents situation where--" His voice trailed off.
"I have it figured this way." How eager she was, Somehow, it didn't matter much now, to him. "We're
conditioned to react to reality in certain accepted ways. For instance that we're supposed to see our shadows. So we
see them. But in our case they were never really there to see. Our sanity or 'normalcy' is maintained that way. But
the constant auto-illusion must always lead to neuroticism and pathology--the hidden fears. But these fears must
express themselves. So they do so in more socially acceptable ways."
Her voice suddenly dropped as her odd eyes flickered across the street. "But we see each other as we really are," she whispered tensely. "Though we could never have recognized the truth in ourselves."

She pointed stiffly. Her mouth gaped, quivered slightly.

He turned slowly. His mouth twitched with a growing terrible hatred. They were coming for him now.

* * * * *

Four men with rifles were coming toward him. Stealthily creeping, they were, as though it were some pristine scene with caves in the background. They were bent slightly, stalking. Hunters and hunted, and the law of the wild and two of them stopping in the middle of the street. The other two branched, circled, came at him from either side, clumping down the walk. George recognized them all. The town marshal, Bill Conway, and Mike Lash, Harry Hutchinson, and Dwight Farrigon.

Edith Bailey was backed up against the window. Her eyes were strangely dilated. But the faces of the four men exuded cold animal hate, and blood-lust.

Edith Bailey's lips said faintly, "What--what are we going to do?"

He felt so calm. He felt his lips writhe back in a snarl. The wind tingle on his teeth. "I know now," he said. "I know about the minutes I lost. I know why they're after me. You'd better get away."

"But why the--the guns?"

"I murdered my wife. She served me greasy eggs. God--she was an animal--just a dumb beast!"

Conway called, his rifle crooked in easy promising grace. "All right, Doc. Come on along without any trouble. Though I'd just as soon you made a break. I'd like to shoot you dead, Doctor."

"And what have I done, exactly," said Doctor Spechaug.

"He's hog-wild," yelled Mike Lash. "Cuttin' her all up that way! Let's string 'em up!" Conway yelled something about a "fair trial," though not with much enthusiasm.

Edith screamed as they charged toward them. A wild, inhuman cry.

Doctor Spechaug's eyes flashed up the narrow street.

"Let's go!" he said to Edith Bailey. "They'll see running they've never seen before. They can't touch us."

They ran. They heard the sharp crack of rifles. They saw the dust spurting up. Doctor Spechaug heard himself howling as he became aware of peculiar stings in his body. Queer, painless, deeply penetrating sensations that made themselves felt all over his body--as though he was awakening from a long paralysis.

Then the mad yelling faded rapidly behind them. They were running, streaking out of the town with inhuman speed. They struck out in long easy strides across the meadow toward the dense woods that brooded beyond the college.

Her voice gasped exultingly. "They couldn't hurt us! They couldn't! They tried!"

He nodded, straining eagerly toward he knew not what, nosing into the fresh wind. How swiftly and gracefully they could run. Soon they lost themselves in the thick dark forest. Shadows hid them.

* * * * *

Days later the moon was full. It edged over the low hill flanking Glen Oaks on the east. June bugs buzzed ponderously like armor-plated dragons toward the lights glowing faintly from the town. Frogs croaked from the swampy meadows and the creek.

They came up slowly to stand silhouetted against the glowing moon, nosing hungrily into the steady, aromatic breeze blowing from the Conway farm below.

They glided effortlessly down, then across the sharp-bladed marsh grass, leaping high with each bound. As they came disaingly close to the silent farm house, a column of pale light from a coal oil lamp came through the living room window and haloed a neglected flower bed. Sorrow and fear clung to the house.

The shivering shadow of a gaunt woman was etched against the half drawn shade. The two standing outside the window called. The woman's shadow trembled.

Then a long rigid finger of steel projected itself beneath the partially raised window. The rifle cracked almost against the faces of the two. He screamed hideously as his companion dropped without a sound, twitching, twitching--he screamed again and began dragging himself away toward the sheltering forest. Intently and desperately the rifle cracked again.

He gave up then.

He sprawled out flately on the cool, damp, moon-bathed path. His hot tongue lapped feverishly at the wet grass. He felt the persistent impact of the rifle's breath against him, and now there was a wave of pain. The full moon was fading into black mental clouds as he feebly attempted to lift his bleeding head.

He thought with agonized irony:

"Provincial fools. Stupid, superstitious idiots ... and that damned Mrs. Conway--the most stupid of all. Only she would have thought to load her dead husband's rifle with silver bullets! Damned peasants----"
Total darkness blotted out futile revery.

Contents

THE IDEAL
By Stanley G. Weinbaum

"This," said the Franciscan, "is my Automaton, who at the proper time will speak, answer whatsoever question I may ask, and reveal all secret knowledge to me." He smiled as he laid his hand affectionately on the iron skull that topped the pedestal.

The youth gazed open-mouthed, first at the head and then at the Friar. "But it's iron!" he whispered. "The head is iron, good father."

"Iron without, skill within, my son," said Roger Bacon. "It will speak, at the proper time and in its own manner, for so have I made it. A clever man can twist the devil's arts to God's ends, thereby cheating the fiend--Sst! There sounds vespers! Plena gratia, ave Virgo--"

But it did not speak. Long hours, long weeks, the doctor mirabilis watched his creation, but iron lips were silent and the iron eyes dull, and no voice but the great man's own sounded in his monkish cell, nor was there ever an answer to all the questions that he asked--until one day when he sat surveying his work, composing a letter to Duns Scotus in distant Cologne--one day--

"Time is!" said the image, and smiled benignly.

The Friar looked up. "Time is, indeed," he echoed. "Time it is that you give utterance, and to some assertion less obvious than that time is. For of course time is, else there were nothing at all. Without time--"

"Time was!" rumbled the image, still smiling, but sternly at the statue of Draco.

"Indeed time was," said the Monk. "Time was, is, and will be, for time is that medium in which events occur. Matter exists in space, but events--"

The image smiled no longer. "Time is past!" it roared in tones deep as the cathedral bell outside, and burst into ten thousand pieces.

* * * * *

"There," said old Haskel van Manderpootz, shutting the book, "is my classical authority in this experiment. This story, overlaid as it is with mediæval myth and legend, proves that Roger Bacon himself attempted the experiment--and failed." He shook a long finger at me. "Yet do not get the impression, Dixon, that Friar Bacon was not a great man. He was--extremely great, in fact; he lighted the torch that his namesake Francis Bacon took up four centuries later, and that now van Manderpootz rekindles."

I stared in silence.

"Indeed," resumed the Professor, "Roger Bacon might almost be called a thirteenth century van Manderpootz, or van Manderpootz a twenty-first century Roger Bacon. His Opus Majus, Opus Minus, and Opus Tertium--"

"What," I interrupted impatiently, "has all this to do with--that?" I indicated the clumsy metal robot standing in the corner of the laboratory.

"Don't interrupt!" snapped van Manderpootz. "I'll--"

At this point I fell out of my chair. The mass of metal had ejaculated something like "A-a-gh-rasp" and had lunged a single pace toward the window, arms upraised. "What the devil!" I sputtered as the thing dropped its arms and returned stolidly to its place.

"A car must have passed in the alley," said van Manderpootz indifferently. "Now as I was saying, Roger Bacon--"

I ceased to listen. When van Manderpootz is determined to finish a statement, interruptions are worse than futile. As an ex-student of his, I know. So I permitted my thoughts to drift to certain problems of my own, particularly Tips Alva, who was the most pressing problem of the moment. Yes, I mean Tips Alva the 'vision dancer, the little blonde imp who entertains on the Yerba Mate hour for that Brazilian company. Chorus girls, dancers, and television stars are a weakness of mine; maybe it indicates that there's a latent artistic soul in me. Maybe.

I'm Dixon Wells, you know, scion of the N. J. Wells Corporation, Engineers Extraordinary. I'm supposed to be an engineer myself; I say supposed, because in the seven years since my graduation, my father hasn't given me much opportunity to prove it. He has a strong sense of value of time, and I'm cursed with the unenviable quality of being late to anything and for everything. He even asserts that the occasional designs I submit are late Jacobean, but that isn't fair. They're Post-Romanesque.
Old N. J. also objects to my penchant for ladies of the stage and vision screen, and periodically threatens to cut my allowance, though that's supposed to be a salary. It's inconvenient to be so dependent, and sometimes I regret that unfortunate market crash of 2009 that wiped out my own money, although it did keep me from marrying Whimsy White, and van Manderpootz, through his subjunctivisor, succeeded in proving that that would have been a catastrophe. But it turned out nearly as much of a disaster anyway, as far as my feelings were concerned. It took me months to forget Joanna Caldwell and her silvery eyes. Just another instance when I was a little late.

Van Manderpootz himself is my old Physics Professor, head of the Department of Newer Physics at N. Y. U., and a genius, but a bit eccentric. Judge for yourself.

"And that's the thesis," he said suddenly, interrupting my thoughts.

"Eh? Oh, of course. But what's that grinning robot got to do with it?"

He purpled. "I've just told you!" he roared. "Idiot! Imbecile! To dream while van Manderpootz talks! Get out! Get out!"

I got. It was late anyway, so late that I overslept more than usual in the morning, and suffered more than the usual lecture on promptness from my father at the office.

* * * * *

Van Manderpootz had forgotten his anger by the next time I dropped in for an evening. The robot still stood in the corner near the window, and I lost no time asking its purpose.

"It's just a toy I had some of the students construct," he explained. "There's a screen of photoelectric cells behind the right eye, so connected that when a certain pattern is thrown on them, it activates the mechanism. The thing's plugged into the light-circuit, but it really ought to run on gasoline."

"Why?"

"Well, the pattern it's set for is the shape of an automobile. See here." He picked up a card from his desk, and cut in the outlines of a streamlined car like those of that year. "Since only one eye is used," he continued, "the thing can't tell the difference between a full-sized vehicle at a distance and this small outline nearby. It has no sense of perspective."

He held the bit of cardboard before the eye of the mechanism. Instantly came its roar of "A-a-gh-rasp!" and it leaped forward a single pace, arms upraised. Van Manderpootz withdrew the card, and again the thing relapsed stolidly into its place.

"What the devil!" I exclaimed. "What's it for?"

"Does van Manderpootz ever do work without reason back of it? I use it as a demonstration in my seminar."

"To demonstrate what?"

"The power of reason," said van Manderpootz solemnly.

"How? And why ought it to work on gasoline instead of electric power?"

"One question at a time, Dixon. You have missed the grandeur of van Manderpootz's concept. See here, this creature, imperfect as it is, represents the predatory machine. It is the mechanical parallel of the tiger, lurking in its jungle to leap on living prey. This monster's jungle is the city; its prey is the unwary machine that follows the trails called streets. Understand?"

"No."

"Well, picture this automaton, not as it is, but as van Manderpootz could make it if he wished. It lurks gigantic in the shadows of buildings; it creeps stealthily through dark alleys; it skulks on deserted streets, with its gasoline engine purring quietly. Then--an unsuspecting automobile flashes its image on the screen behind its eyes. It leaps. It seizes its prey, swinging it in steel arms to its steel jaws. Through the metal throat of its victim crash steel teeth; the blood of its prey--the gasoline, that is--is drained into its stomach, or its gas-tank. With renewed strength it flings away the husk and prowls on to seek other prey. It is the machine-carnivore, the tiger of mechanics."

I suppose I stared dumbly. It occurred to me suddenly that the brain of the great van Manderpootz was cracking. "What the--?" I gasped.

"That," he said blandly, "is but a concept. I have many another use for the toy. I can prove anything with it, anything I wish."

"You can? Then prove something."

"Name your proposition, Dixon."

I hesitated, nonplussed.

"Come!" he said impatiently. "Look here; I will prove that anarchy is the ideal government, or that Heaven and Hell are the same place, or that--"

"Prove that!" I said. "About Heaven and Hell."

"Easily. First we will endow my robot with intelligence. I add a mechanical memory by means of the old Cushman delayed valve; I add a mathematical sense with any of the calculating machines; I give it a voice and a
vocabulary with the magnetic-impulse wire phonograph. Now the point I make is this: Granted an intelligent machine, does it not follow that every other machine constructed like it must have the identical qualities? Would not each robot given the same insides have exactly the same character?"

"No!" I snapped. "Human beings can't make two machines exactly alike. There'd be tiny differences; one would react quicker than others, or one would prefer Fox Airsplitters as prey, while another reacted most vigorously to Carnecars. In other words, they'd have--individuality!" I grinned in triumph.

"My point exactly," observed van Manderpootz. "You admit, then, that this individuality is the result of imperfect workmanship. If our means of manufacture were perfect, all robots would be identical, and this individuality would not exist. Is that true?"

"I--suppose so."

"Then I argue that our own individuality is due to our falling short of perfection. All of us--even van Manderpootz--are individuals only because we are not perfect. Were we perfect, each of us would be exactly like everyone else. True?"

"Uh--yes."

"But Heaven, by definition, is a place where all is perfect. Therefore, in Heaven everybody is exactly like everybody else, and therefore, everybody is thoroughly and completely bored! There is no torture like boredom, Dixon, and--Well, have I proved my point?"

I was floored. "But--about anarchy, then?" I stammered.

"Isn't that enough?" growled van Manderpootz. "However,"--his voice dropped--"I have even a greater destiny in mind. My boy, van Manderpootz has solved the riddle of the universe!" He paused impressively. "Well, why don't you say something?"

"Uh--" I gasped. "It's--uh--marvelous!"

"Not for van Manderpootz," he said modestly.

"But--what is it?"

"Eh--Oh!" he frowned. "Well, I'll tell you, Dixon. You won't understand, but I'll tell you." He coughed. "As far back as the early twentieth century," he resumed, "Einstein proved that energy is particular. Matter is also particular, and now van Manderpootz adds that space and time are discrete!" He glared at me.

"Energy and matter are particular," I murmured, "and space and time are discrete! How very moral of them!"

"Imbecile!" he blazed. "To pun on the words of van Manderpootz! You know very well that I mean particular and discrete in the physical sense. Matter is composed of particles, therefore it is particular. The particles of matter are called electrons, protons, and neutrons, and those of energy, quanta. I now add two others, the particles of space I call spations, those of time, chronons."

"And what in the devil," I asked, "are particles of space and time?"

"Just what I said!" snapped van Manderpootz. "Exactly as the particles of matter are the smallest pieces of matter that can exist, just as there is no such thing as a half of an electron, or for that matter, half a quantum, so the chronon is the smallest possible fragment of time, and the spation the smallest possible bit of space. Neither time nor space is continuous; each is composed of these infinitely tiny fragments."

"Well, how long is a chronon in time? How big is a spation in space?"

"Van Manderpootz has even measured that. A chronon is the length of time it takes one quantum of energy to push one electron from one electronic orbit to the next. There can obviously be no shorter interval of time, since an electron is the smallest unit of matter and the quantum the smallest unit of energy. And a spation is the exact volume of a proton. Since nothing smaller exists, that is obviously the smallest unit of space."

"Well, look here," I argued. "Then what's in between these particles of space and time? If time moves, as you say, in jerks of one chronon each, what's between the jerks?"

"Ahi!" said the great van Manderpootz. "Now we come to the heart of the matter. In between the particles of space and time, must obviously be something that is neither space, time, matter, nor energy. A hundred years ago
Shapley anticipated van Manderpootz in a vague way when he announced his cosmo-plasma, the great underlying matrix in which time and space and the universe are embedded. Now van Manderpootz announces the ultimate unit, the universal particle, the focus in which matter, energy, time, and space meet, the unit from which electrons, protons, neutrons, quanta, spations, and chronons are all constructed. The riddle of the universe is solved by what I have chosen to name the cosmon.” His blue eyes bored into me.

”Magnificent!” I said feebly, knowing that some such word was expected. ”But what good is it?”

”What good is it?” he roared. ”It provides--or will provide, once I work out a few details--the means of turning energy into time, or space into matter, or time into space, or--” He sputtered into silence. ”Fool!” he muttered. ”To think that you studied under the tutelage of van Manderpootz. I blush; I actually blush!”

One couldn't have told it if he were blushing. His face was always rubicund enough. ”Colossal!” I said hastily. ”What a mind!”

That mollified him. ”But that's not all,” he proceeded. ”Van Manderpootz never stops short of perfection. I now announce the unit particle of thought--the psychon!”

This was a little too much. I simply stared.

”Well may you be dumbfounded," said van Manderpootz. "I presume you are aware, by hearsay at least, of the existence of thought. The psychon, the unit of thought, is one electron plus one proton, which are bound so as to form one neutron, embedded in one cosmon, occupying a volume of one spation, driven by one quantum for a period of one chronon. Very obvious; very simple."

"Oh, very!" I echoed. "Even I can see that that equals one psychon."

He beamed. "Excellent! Excellent!"

"And what," I asked, "will you do with the psychons?"

"Ah," he rumbled. "Now we go even past the heart of the matter, and return to Isaak here." He jammed a thumb toward the robot. "Here I will create Roger Bacon's mechanical head. In the skull of this clumsy creature will rest such intelligence as not even van Manderpootz--I should say, as only van Manderpootz--can conceive. It remains merely to construct my idealizator."

"Your idealizator?"

"Of course. Have I not just proved that thoughts are as real as matter, energy, time, or space? Have I not just demonstrated that one can be transformed, through the cosmon, into any other? My idealizator is the means of transforming psychons to quanta, just as, for instance, a Crookes tube or X-ray tube transforms matter to electrons. I will make your thoughts visible! And not your thoughts as they are in that numb brain of yours, but in ideal form. Do you see? The psychons of your mind are the same as those from any other mind, just as all electrons are identical, whether from gold or iron. Yes! Your psychons"--his voice quavered--"are identical with those from the mind of--van Manderpootz!" He paused, shaken.

"Actually?" I gasped.

"Actually. Fewer in number, of course, but identical. Therefore, my idealizator shows your thought released from the impress of your personality. It shows it--ideal!"

Well, I was late to the office again.

A week later I thought of van Manderpootz. Tips was on tour somewhere, and I didn't dare take anyone else out because I'd tried it once before and she'd heard about it. So, with nothing to do, I finally dropped around to the professor's quarter, found him missing, and eventually located him in his laboratory at the Physics Building. He was puttering around the table that had once held that damned subjunctivisor of his, but now it supported an indescribable mess of tubes and tangled wires, and as its most striking feature, a circular plane mirror etched with a grating of delicately scratched lines.

"Good evening, Dixon," he rumbled.

I echoed his greeting. "What's that?" I asked.

"My idealizator. A rough model, much too clumsy to fit into Isaak's iron skull. I'm just finishing it to try it out." He turned glittering blue eyes on me. "How fortunate that you're here. It will save the world a terrible risk."

"A risk?"

"Yes. It is obvious that too long an exposure to the device will extract too many psychons, and leave the subject's mind in a sort of moronic condition. I was about to accept the risk, but I see now that it would be woefully unfair to the world to endanger the mind of van Manderpootz. But you are at hand, and will do very well."

"Oh, no I won't!"

"Come, come!" he said, frowning. "The danger is negligible. In fact, I doubt whether the device will be able to extract any psychons from your mind. At any rate, you will be perfectly safe for a period of at least half an hour. I, with a vastly more productive mind, could doubtless stand the strain indefinitely, but my responsibility to the world..."
is too great to chance it until I have tested the machine on someone else. You should be proud of the honor."

"Well, I'm not!" But my protest was feeble, and after all, despite his overbearing mannerisms, I knew van Manderpootz liked me, and I was positive he would not have exposed me to any real danger. In the end I found myself seated before the table facing the etched mirror.

"Put your face against the barrel," said van Manderpootz, indicating a stove-pipe-like tube. "That's merely to cut off extraneous sights, so that you can see only the mirror. Go ahead, I tell you! It's no more than the barrel of a telescope or microscope."

I complied. "Now what?" I asked.

"What do you see?"

"My own face in the mirror."

"Of course. Now I start the reflector rotating." There was a faint whirr, and the mirror was spinning smoothly, still with only a slightly blurred image of myself. "Listen, now," continued van Manderpootz. "Here is what you are to do. You will think of a generic noun. 'House,' for instance. If you think of house, you will see, not an individual house, but your ideal house, the house of all your dreams and desires. If you think of a horse, you will see what your mind conceives as the perfect horse, such a horse as dream and longing create. Do you understand? Have you chosen a topic?"

"Yes." After all, I was only twenty-eight; the noun I had chosen was--girl.

"Good," said the professor. "I turn on the current."

There was a blue radiance behind the mirror. My own face still stared back at me from the spinning surface, but something was forming behind it, building up, growing. I blinked; when I focused my eyes again, it was--she was--there.

Lord! I can't begin to describe her. I don't even know if I saw her clearly the first time. It was like looking into another world and seeing the embodiment of all longings, dreams, aspirations, and ideals. It was so poignant a sensation that it crossed the borderline into pain. It was--well, exquisite torture or agonized delight. It was at once unbearable and irresistible.

But I gazed. I had to. There was a haunting familiarity about the impossibly beautiful features. I had seen the face--somewhere--sometime. In dreams? No; I realized suddenly what was the source of that familiarity. This was no living woman, but a synthesis. Her nose was the tiny, impudent one of Whimsy White at her loveliest moment; her lips were the perfect bow of Tips Alva; her silvery eyes and dusky velvet hair were those of Joan Caldwell. But the aggregate, the sum total, the face in the mirror--that was none of these; it was a face impossibly, incredibly, outrageously beautiful.

Only her face and throat were visible, and the features were cool, expressionless, and still as a carving. I wandered suddenly if she could smile, and with the thought, she did. If she had been beautiful before, now her beauty flamed to such a pitch that it was--well, insolent; it was an affront to be so lovely; it was insulting. I felt a wild surge of anger that the image before me should flaunt such beauty, and yet be--non-existent! It was deception, cheating, fraud, a promise that could never be fulfilled.

Anger died in the depths of that fascination. I wondered what the rest of her was like, and instantly she moved gracefully back until her full figure was visible. I must be a prude at heart, for she wasn't wearing the usual cuirass-and-shorts of that year, but an iridescent four-paneled costume that all but concealed her dainty knees. But her form was slim and erect as a column of cigarette smoke in still air, and I knew that she could dance like a fragment of mist on water. And with that thought she did move, dropping in a low curtsy, and looking up with the faintest possible flush crimsoning the curve of her throat. Yes, I must be a prude at heart; despite Tips Alva and Whimsy White and the rest, my ideal was modest.

It was unbelievable that the mirror was simply giving back my thoughts. She seemed as real as myself, and--after all--I guess she was. As real as myself, no more, no less, because she was part of my own mind. And at this point I realized that van Manderpootz was shaking me and bellowing, "Your time's up. Come out of it! Your half-hour's up!"

He must have switched off the current. The image faded, and I took my face from the tube, dropping it on my arms.

"O-o-o-o-o-oh!" I groaned.

"How do you feel?" he snapped.

"Feel? All right--physically." I looked up.

Concern flickered in his blue eyes. "What's the cube root of 4913?" he cracked sharply.

I've always been quick at figures. "It's--uh--17," I returned dully. "Why the devil--?"

"You're all right mentally," he announced. "Now--why were you sitting there like a dummy for half an hour? My idealizator must have worked, as is only natural for a van Manderpootz creation, but what were you thinking
"I thought--I thought of 'girl,'" I groaned.

He snorted. "Hah! You would, you idiot! 'House' or 'horse' wasn't good enough; you had to pick something with emotional connotations. Well, you can start right in forgetting her, because she doesn't exist."

I couldn't give up hope, as easily as that. "But can't you--can't you--?" I didn't even know what I meant to ask.

"Van Manderpootz," he announced, "is a mathematician, not a magician. Do you expect me to materialize an ideal for you?" When I had no reply but a groan, he continued. "Now I think it safe enough to try the device myself. I shall take--let's see--the thought 'man.' I shall see what the superman looks like, since the ideal of van Manderpootz can be nothing less than superman." He seated himself. "Turn that switch," he said. "Now!"

I did. The tubes glowed into low blue light. I watched dully, disinterestedly; nothing held any attraction for me after that image of the ideal.

"Huh!" said van Manderpootz suddenly. "Turn it on, I say! I see nothing but my own reflection."

I stared, then burst into a hollow laugh. The mirror was spinning; the banks of tubes were glowing; the device was operating.

Van Manderpootz raised his face, a little redder than usual. I laughed half hysterically. "After all," he said huffily, "one might have a lower ideal of man than van Manderpootz. I see nothing nearly so humorous as your situation."

The laughter died. I went miserably home, spent half the remainder of the night in morose contemplation, smoked nearly two packs of cigarettes, and didn't get to the office at all the next day.

* * * * *

Tips Alva got back to town for a week-end broadcast, but I didn't even bother to see her, just phoned her and told her I was sick. I guess my face lent credibility to the story, for she was duly sympathetic, and her face in the phone screen was quite anxious. Even at that, I couldn't keep my eyes away from her lips because, except for a bit too lustrous make-up, they were the lips of the ideal. But they weren't enough; they just weren't enough.

Old N. J. began to worry again. I couldn't sleep late of mornings any more, and after missing that one day, I kept getting down earlier and earlier until one morning I was only ten minutes late. He called me in at once.

"Look here, Dixon," he said. "Have you been to a doctor recently?"

"I'm not sick," I said listlessly.

"Then for Heaven's sake, marry the girl! I don't care what chorus she kicks in, marry her and act like a human being again."

"I--can't."

"Oh. She's already married, eh?"

Well, I couldn't tell him she didn't exist. I couldn't say I was in love with a vision, a dream, an ideal. He thought I was a little crazy, anyway, so I just muttered "Yeah," and didn't argue when he said gruffly: "Then you'll get over it. Take a vacation. Take two vacations. You might as well for all the good you are around here."

I didn't leave New York; I lacked the energy. I just mooned around the city for a while, avoiding my friends, and dreaming of the impossible beauty of the face in the mirror. And by and by the longing to see that vision of perfection once more began to become overpowering. I don't suppose anyone except me can understand the lure of that memory; the face, you see, had been my ideal, my concept of perfection. One sees beautiful women here and there in the world; one falls in love, but always, no matter how great their beauty or how deep one's love, they fall short in some degree of the secret vision of the ideal. But not the mirrored face; she was my ideal, and therefore, whatever imperfections she might have had in the minds of others, in my eyes she had none. None, that is, save the terrible one of being only an ideal, and therefore unattainable--but that is a fault inherent in all perfection.

It was a matter of days before I yielded. Common sense told me it was futile, even foolhardy, to gaze again on the vision of perfect desirability. I fought against the hunger, but I fought hopelessly, and was not at all surprised to find myself one evening rapping on van Manderpootz's door in the University Club. He wasn't there; I'd been hoping he wouldn't be, since it gave me an excuse to seek him in his laboratory in the Physics Building, to which I would have dragged him anyway.

There I found him, writing some sort of notations on the table that held the idealizator. "Hello, Dixon," he said. "Did it ever occur to you that the ideal university cannot exist? Naturally not since it must be composed of perfect students and perfect educators, in which case the former could have nothing to learn and the latter, therefore, nothing to teach."

What interest had I in the perfect university and its inability to exist? My whole being was desolate over the non-existence of another ideal. "Professor," I said tensely, "may I use that--that thing of yours again? I want to--uh--see something."

My voice must have disclosed the situation, for van Manderpootz looked up sharply. "So!" he snapped. "So you
disregarded my advice! Forget her, I said. Forget her because she doesn't exist."

"But--I can't! Once more, Professor--only once more!"

He shrugged, but his blue, metallic eyes were a little softer than usual. After all, for some inconceivable reason, he likes me. "Well, Dixon," he said, "you're of age and supposed to be of mature intelligence. I tell you that this is a very stupid request, and van Manderpootz always knows what he's talking about. If you want to stupify yourself with the opium of impossible dreams, go ahead. This is the last chance you'll have, for tomorrow the idealizator of van Manderpootz goes into the Bacon head of Isaak there. I shall shift the oscillators so that the psychons, instead of becoming light quanta, emerge as an electron flow--a current which will actuate Isaak's vocal apparatus and come out as speech." He paused musingly. "Van Manderpootz will hear the voice of the ideal. Of course Isaak can return only what psychons he receives from the brain of the operator, but just as the image in the mirror, the thoughts will have lost their human impress, and the words will be those of an ideal." He perceived that I wasn't listening, I suppose. "Go ahead, imbecile!" he grunted.

I did. The glory that I hungered after flamed slowly into being, incredible in loveliness, and somehow, unbelievably, even more beautiful than on that other occasion. I know why now; long afterwards, van Manderpootz explained that the very fact that I had seen an ideal once before had altered my ideal, raised it to a higher level. With that face among my memories, my concept of perfection was different than it had been.

So I gazed and hungered. Readily and instantly the being in the mirror responded to my thoughts with smile and movement. When I thought of love, her eyes blazed with such tenderness that it seemed as if--I--I, Dixon Wells--were part of those pairs who had made the great romances of the world, Heloise and Abelard, Tristram and Isolede, Aucassin and Nicolette. It was like the thrust of a dagger to feel van Manderpootz shaking me, to hear his gruff voice calling, "Out of it! Out of it! Time's up."

I groaned and dropped my face on my hands. The Professor had been right, of course; this insane repetition had only intensified an unfulfillable longing, and had made a bad mess ten times as bad. Then I heard him muttering behind me. "Strange!" he murmured. "In fact, fantastic. Oedipus--oedipus of the magazine covers and billboards."

I looked dully around. He was standing behind me, squinting, apparently, into the spinning mirror beyond the end of the black tube. "Huh?" I grunted wearily.

"That face," he said. "Very queer. You must have seen her features on a hundred magazines, on a thousand billboards, on countless 'vision broadcasts. The oedipus complex in a curious form."

"Eh? Could you see her?"

"Of course!" he grunted. "Didn't I say a dozen times that the psychons are transmuted to perfectly ordinary quanta of visible light? If you could see her, why not I?"

"But--what about billboards and all?"

"That face," said the professor slowly. "It's somewhat idealized, of course, and certain details are wrong. Her eyes aren't that pallid silver-blue you imagined; they're green--sea-green, emerald colored."

"What the devil," I asked hoarsely, "are you talking about?"

"About the face in the mirror. It happens to be, Dixon, a close approximation of the features of de Lisle d'Agrion, the Dragon Fly!"

"You mean--she's real? She exists? She lives? She--"

"Wait a moment, Dixon. She's real enough, but in accordance with your habit, you're a little late. About twenty-five years too late, I should say. She must now be somewhere in the fifties--let's see--fifty-three, I think. But during your very early childhood, you must have seen her face pictured everywhere, de Lisle d'Agrion, the Dragon Fly."

I could only gulp. That blow was devastating.

"You see," continued van Manderpootz, "one's ideals are implanted very early. That's why you continually fall in love with girls who possess one or another feature that reminds you of her, her hair, her nose, her mouth, her eyes. Very simple, but rather curious."

"Curious!" I blazed. "Curious, you say! Everytime I look into one of your damned contraptions I find myself in love with a myth! A girl who's dead, or married, or unreal, or turned into an old woman! Curious, eh? Damned funny, isn't it?"

"Just a moment," said the professor placidly. "It happens, Dixon, that she has a daughter. What's more, Denise resembles her mother. And what's still more, she's arriving in New York next week to study American letters at the University here. She writes, you see."

That was too much for immediate comprehension. "How--how do you know?" I gasped.

It was one of the few times I have seen the colossal blandness of van Manderpootz ruffled. He reddened a trifle, and said slowly, "It also happens, Dixon, that many years ago in Amsterdam, Haskel van Manderpootz and de Lisle d'Agrion were--very friendly--more than friendly, I might say, but for the fact that two such powerful personalities as the Dragon Fly and van Manderpootz were always at odds." He frowned. "I was almost her second husband. She's
had seven, I believe; Denise is the daughter of her third."

"Why--why is she coming here?"

"Because," he said with dignity, "van Manderpootz is here. I am still a friend of de Lisle's." He turned and bent over the complex device on the table. "Hand me that wrench," he ordered. "Tonight I dismantle this, and tomorrow start reconstructing it for Isaak's head."

* * * * *

But when, the following week, I rushed eagerly back to van Manderpootz's laboratory, the idealizator was still in place. The professor greeted me with a humorous twist to what was visible of his bearded mouth. "Yes, it's still here," he said, gesturing at the device. "I've decided to build an entirely new one for Isaak, and besides, this one has afforded me considerable amusement. Furthermore, in the words of Oscar Wilde, who am I to tamper with a work of genius. After all, the mechanism is the product of the great van Manderpootz."

He was deliberately tantalizing me. He knew that I hadn't come to hear him discourse on Isaak, or even on the incomparable van Manderpootz. Then he smiled and softened, and turned to the little inner office adjacent, the room where Isaak stood in metal austerity. "Denise!" he called, "come here."

I don't know exactly what I expected, but I do know that the breath left me as the girl entered. She wasn't exactly my image of the ideal, of course; she was perhaps the merest trifle slimmer, and her eyes--well, they must have been much like those of de Lisle d'Agrion, for they were the clearest emerald I've ever seen. They were impudently direct eyes, and I could imagine why van Manderpootz and the Dragon Fly might have been forever quarreling; that was easy to imagine, looking into the eyes of the Dragon Fly's daughter.

Nor was Denise, apparently, quite as femininely modest as my image of perfection. She wore the extremely unconcealing costume of the day, which covered, I suppose, about as much of her as one of the one-piece swimming suits of the middle years of the twentieth century. She gave an impression, not so much of fleeting grace as of litheness and supple strength, an air of independence, frankness, and--I say it again--impudence.

"Well!" she said coolly as van Manderpootz presented me. "So you're the scion of the N. J. Wells Corporation. Every now and then your escapades enliven the Paris Sunday supplements. Wasn't it you who snared a million dollars in the market so you could ask Whimsy White--?"

I flushed. "That was greatly exaggerated," I said hastily, "and anyway I lost it before we--uh--before I--"

"Not before you made somewhat of a fool of yourself, I believe," she finished sweetly.

Well, that's the sort she was. If she hadn't been so infernally lovely, if she hadn't looked so much like the face in the mirror, I'd have flared up, said "Pleased to have met you," and never have seen her again. But I couldn't get angry, not when she had the dusky hair, the perfect lips, the saucy nose of the being who to me was ideal.

So I did see her again, and several times again. In fact, I suppose I occupied most of her time between the few literary courses she was taking, and little by little I began to see that in other respects besides the physical she was not so far from my ideal. Beneath her impudence was honesty, and frankness, and, despite herself, sweetness, so that even allowing for the head-start I'd had, I fell in love pretty hastily. And what's more, I knew she was beginning to reciprocate.

That was the situation when I called for her one noon and took her over to van Manderpootz's laboratory. We were to lunch with him at the University Club, but we found him occupied in directing some experiment in the big laboratory beyond his personal one, untangling some sort of mess that his staff had blundered into. So Denise and I wandered back into the smaller room, perfectly content to be alone together. I simply couldn't feel hungry in her presence; just talking to her was enough of a substitute for food.

"I'm going to be a good writer," she was saying musingly. "Some day, Dick, I'm going to be famous."

Well, everyone knows how correct that prediction was. I agreed with her instantly.

She smiled. "You're nice, Dick," she said. "Very nice."

"Very?"

"Very!" she said emphatically. Then her green eyes strayed over to the table that held the idealizator. "What crack-brained contraption of Uncle Haskel's is that?"

I explained, rather inaccurately, I'm afraid, but no ordinary engineer can follow the ramifications of a van Manderpootz conception. Nevertheless, Denise caught the gist of it and her eyes glowed emerald fire.

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"It's fascinating!" she exclaimed. She rose and moved over to the table. "I'm going to try it."

"Not without the professor, you won't! It might be dangerous."

That was the wrong thing to say. The green eyes glowed brighter as she cast me a whimsical glance. "But I am," she said. "Dick, I'm going to--see my ideal man!" She laughed softly.

I was panicky. Suppose her ideal turned out tall and dark and powerful, instead of short and sandy-haired and a bit--well, chubby, as I am. "No!" I said vehemently. "I won't let you!"

She laughed again. I suppose she read my consternation, for she said softly, "Don't be silly, Dick." She sat
down, placed her face against the opening of the barrel, and commanded. "Turn it on."

I couldn't refuse her. I set the mirror whirling, then switched on the bank of tubes. Then immediately I stepped behind her, squinting into what was visible of the flashing mirror, where a face was forming, slowly--vaguely.

I thrilled. Surely the hair of the image was sandy. I even fancied now that I could trace a resemblance to my own features. Perhaps Denise sensed something similar, for she suddenly withdrew her eyes from the tube and looked up with a faintly embarrassed flush, a thing most unusual for her.

"Ideals are dull!" she said. "I want a real thrill. Do you know what I'm going to see? I'm going to visualize ideal horror. That's what I'll do. I'm going to see absolute horror!"

"Oh, no you're not!" I gasped. "That's a terribly dangerous idea." Off in the other room I heard the voice of van Manderpootz, "Dixon!"

"Dangerous--bosh!" Denise retorted. "I'm a writer, Dick. All this means to me is material. It's just experience, and I want it."

Van Manderpootz again. "Dixon! Dixon! Come here." I said, "Listen, Denise. I'll be right back. Don't try anything until I'm here--please!"

I dashed into the big laboratory. Van Manderpootz was facing a cowed group of assistants, quite apparently in extreme awe of the great man.

"Hah, Dixon!" he rasped. "Tell these fools what an Emmerich valve is, and why it won't operate in a free electronic stream. Let 'em see that even an ordinary engineer knows that much."

Well, an ordinary engineer doesn't, but it happened that I did. Not that I'm particularly exceptional as an engineer, but I did happen to know that because a year or two before I'd done some work on the big tidal turbines up in Maine, where they have to use Emmerich valves to guard against electrical leakage from the tremendous potentials in their condensers. So I started explaining, and van Manderpootz kept interpolating sarcasms about his staff, and when I finally finished, I suppose I'd been in there about half an hour. And then--I remembered Denise!

I left van Manderpootz staring as I rushed back, and sure enough, there was the girl with her face pressed against the barrel, and her hands gripping the table edge. Her features were hidden, of course, but there was something about her strained position, her white knuckles--

"Denise!" I yelled. "Are you all right? Denise!"

She didn't move. I stuck my face in between the mirror and the end of the barrel and peered up the tube at her visage, and what I saw left me all but stunned. Have you ever seen stark, mad, infinite terror on a human face? That was what I saw in Denise's--inexpressible, unbearable horror, worse than the fear of death could ever be. Her green eyes were widened so that the whites showed around them; her perfect lips were contorted, her whole face strained into a mask of sheer terror.

I rushed for the switch, but in passing I caught a single glimpse of--of what showed in the mirror. Incredible! Obscene, terror-laden, horrifying things--there just aren't words for them. There are no words.

Denise didn't move as the tubes darkened. I raised her face from the barrel and when she glimpsed me she moved. She flung herself out of that chair and away, facing me with such mad terror that I halted.

"Denise!" I cried. "It's just Dick. Look, Denise!"

But as I moved toward her, she uttered a choking scream, her eyes dulled, her knees gave, and she fainted. Whatever she had seen, it must have been appalling to the uttermost, for Denise was not the sort to faint.

* * * * *

It was a week later that I sat facing van Manderpootz in his little inner office. The grey metal figure of Isaak was missing, and the table that had held the idealizator was empty.

"Yes," said van Manderpootz. "I've dismantled it. One of van Manderpootz's few mistakes was to leave it around where a pair of incompetents like you and Denise could get to it. It seems that I continually overestimate the intelligence of others. I suppose I tend to judge them by the brain of van Manderpootz."

I said nothing. I was thoroughly disheartened and depressed, and whatever the professor said about my lack of intelligence, I felt it justified.

"Hereafter," resumed van Manderpootz, "I shall credit nobody except myself with intelligence, and will doubtless be much more nearly correct." He waved a hand at Isaak's vacant corner. "Not even the Bacon head," he continued. "I've abandoned that project, because, when you come right down to it, what need has the world of a mechanical brain when it already has that of van Manderpootz?"

"Professor," I burst out suddenly, "why won't they let me see Denise? I've been at the hospital every day, and they let me into her room just once--just once, and that time she went right into a fit of hysterics. Why? Is she--?" I gulped.

"She's recovering nicely, Dixon."

"Then why can't I see her?"
"Well," said van Manderpoetz placidly, "it's like this. You see, when you rushed into the laboratory there, you made the mistake of pushing your face in front of the barrel. She saw your features right in the midst of all those horrors she had called up. Do you see? From then on your face was associated in her mind with the whole hell's brew in the mirror. She can't even look at you without seeing all of it again."

"Good--God!" I gasped. "But she'll get over it, won't she? She'll forget that part of it?"

"The young psychiatrist who attends her--a bright chap, by the way, with a number of my own ideas--believes she'll be quite over it in a couple of months. But personally, Dixon, I don't think she'll ever welcome the sight of your face, though I myself have seen uglier visages somewhere or other."

I ignored that. "Lord!" I groaned. "What a mess!" I rose to depart, and then--then I knew what inspiration means!

"Listen!" I said, spinning back. "Listen, professor! Why can't you get her back here and let her visualize the ideally beautiful? And then I'll--I'll stick my face into that!" Enthusiasm grew. "It can't fail!" I cried. "At the worst, it'll cancel that other memory. It's marvelous!"

"But as usual," said van Manderpoetz, "a little late."

"Late? Why? You can put up your idealizator again. You'd do that much, wouldn't you?"

"Van Manderpoetz," he observed, "is the very soul of generosity. I'd do it gladly, but it's still a little late, Dixon. You see, she married the bright young psychiatrist this noon."

Well, I've a date with Tips Alva tonight, and I'm going to be late for it, just as late as I please. And then I'm going to do nothing but stare at her lips all evening.

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Contents

The RISK PROFESSION  
By Donald E. Westlake

Mister Henderson called me into his office my third day back in Tangiers. That was a day and a half later than I'd expected. Roving claims investigators for Tangiers Mutual Insurance Corporation don't usually get to spend more than thirty-six consecutive hours at home base.

Henderson was jovial but stern. That meant he was happy with the job I'd just completed, and that he was pretty sure I'd find some crooked shenanigans on this next assignment. That didn't please me. I'm basically a plain-living type, and I hate complications. I almost wished for a second there that I was back on Fire and Theft in Greater New York. But I knew better than that. As a roving claim investigator, I avoided the more stultifying paper work inherent in this line of work and had the additional luxury of an expense account nobody ever questioned.

It made working for a living almost worthwhile.

When I was settled in the chair beside his desk, Henderson said, "That was good work you did on Luna, Ged. Saved the company a pretty pence."

I smiled modestly and said, "Thank you, sir." And reflected to myself for the thousandth time that the company could do worse than split that saving with the guy who'd made it possible. Me, in other words.

"Got a tricky one this time, Ged," said my boss. He had done his back-patting, now we got down to business. He peered keenly at me, or at least as keenly as a round-faced tiny-eyed fat man can peer. "What do you know about the Risk Profession Retirement Plan?" he asked me.

"I've heard of it," I said truthfully. "That's about all."

"That's about all."

He nodded. "Most of the policies are sold off-planet, of course. It's a form of insurance for non-insurables. Spaceship crews, asteroid prospectors, people like that."

"I see," I said, unhappily. I knew right away this meant I was going to have to go off-Earth again. I'm a one-gee boy all the way. Gravity changes get me in the solar plexus. I get g-sick at the drop of an elevator.

"Here's the way it works," he went on, either not noticing my sad face or choosing to ignore it. "The client pays a monthly premium. He can be as far ahead or as far behind in his payments as he wants--the policy has no lapse clause--just so he's all paid up by the Target Date. The Target Date is a retirement age, forty-five or above, chosen by the client himself. After the Target Date, he stops paying premiums, and we begin to pay him a monthly retirement check, the amount determined by the amount paid into the policy, his age at retiring, and so on. Clear?"

I nodded, looking for the gimmick that made this a paying proposition for good old Tangiers Mutual.

"The Double R-P--that's what we call it around the office here--assures the client that he won't be reduced to
panhandling in his old age, should his other retirement plans fall through. For Belt prospectors, of course, this means the big strike, which maybe one in a hundred find. For the man who never does make that big strike, this is something to fall back on. He can come home to Earth and retire, with a guaranteed income for the rest of his life."

I nodded again, like a good company man.

"Of course," said Henderson, emphasizing this point with an upraised chubby finger, "these men are still uninsurables. This is a retirement plan only, not an insurance policy. There is no beneficiary other than the client himself."

And there was the gimmick. I knew a little something of the actuarial statistics concerning uninsurables, particularly Belt prospectors. Not many of them lived to be forty-five, and the few who would survive the Belt and come home to collect the retirement wouldn't last more than a year or two. A man who's spent the last twenty or thirty years on low-gee asteroids just shrivels up after a while when he tries to live on Earth.

It needed a company like Tangiers Mutual to dream up a racket like that. The term "uninsurables" to most insurance companies means those people whose jobs or habitats make them too likely as prospects for obituaries. To Tangiers Mutual, uninsurables are people who have money the company can't get at.

"Now," said Henderson importantly, "we come to the problem at hand." He ruffled his up-to-now-neat In basket and finally found the folder he wanted. He studied the blank exterior of this folder for a few seconds, pursing his lips at it, and said, "One of our clients under the Double R-P was a man named Jafe McCann."

"Was?" I echoed.

He squinted at me, then nodded at my sharpness. "That's right, he's dead." He sighed heavily and tapped the folder with all those pudgy fingers. "Normally," he said, "that would be the end of it. File closed. However, this time there are complications."

Naturally. Otherwise, he wouldn't be telling me about it. But Henderson couldn't be rushed, and I knew it. I kept the alert look on my face and thought of other things, while waiting for him to get to the point.

"Two weeks after Jafe McCann's death," Henderson said, "we received a cash-return form on his policy."

"A cash-return form?" I'd never heard of such a thing. It didn't sound like anything Tangiers Mutual would have anything to do with. We never return cash.

* * *

"It's something special in this case," he explained. "You see, this isn't an insurance policy, it's a retirement plan, and the client can withdraw from the retirement plan at any time, and have seventy-five per cent of his paid-up premiums returned to him. It's, uh, the law in plans such as this."

"Oh," I said. That explained it. A law that had snuck through the World Finance Code Commission while the insurance lobby wasn't looking.

"But you see the point," said Henderson. "This cash-return form arrived two weeks after the client's death."

"You said there weren't any beneficiaries," I pointed out.

"Of course. But the form was sent in by the man's partner, one Ab Karpin. McCann left a hand-written will bequeathing all his possessions to Karpin. Since, according to Karpin, this was done before McCann's death, the premium money cannot be considered part of the policy, but as part of McCann's cash-on-hand. And Karpin wants it."

"It can't be that much, can it?" I asked. I was trying my best to point out to him that the company would spend more than it would save if it sent me all the way out to the asteroids, a prospect I could feel coming and one which I wasn't ready to cry hosannah over.

"McCann died," Henderson said ponderously, "at the age of fifty-six. He had set his retirement age at sixty. He took out the policy at the age of thirty-four, with monthly payments of fifty credits. Figure it out for yourself."

I did--in my head--and came up with a figure of thirteen thousand and two hundred credits. Seventy-five per cent of that would be nine thousand and nine hundred credits. Call it ten thousand credits even.

I had to admit it. It was worth the trip.

"I see," I said sadly.

"Now," said Henderson, "the conditions--the circumstances--of McCann's death are somewhat suspicious. And so is the cash-return form itself."

"There's a chance it's a forgery?"

"One would think so," he said. "But our handwriting experts have worn themselves out with that form, comparing it with every other single scrap of McCann's writing they can find. And their conclusion is that not only is it genuinely McCann's handwriting, but it is McCann's handwriting at age fifty-six."

"So McCann must have written it," I said. "Under duress, do you think?"

"I have no idea," said Henderson complacently. "That's what you're supposed to find out. Oh, there's just one more thing."
I did my best to make my ears perk.
"I told you that McCann's death occurred under somewhat suspicious circumstances."
"Yes," I agreed, "you did."
"McCann and Karpin," he said, "have been partners--unincorporated, of course--for the last fifteen years. They had found small rare-metal deposits now and again, but they had never found that one big strike all the Belt prospectors waste their lives looking for. Not until the day before McCann died."
"Ah hah," I said. "Then they found the big strike."
"Exactly."
"And McCann's death?"
"Accidental."
"Sure," I said. "What proof have we got?"
"None. The body is lost in space. And law is few and far between that far out."
"So all we've got is this guy Karpin's word for how McCann died, is that it?"
"That's all we have. So far."
"Sure. And now you want me to go on out there and find out what's cooking, and see if I can maybe save the company ten thousand credits."
"Exactly," said Henderson.

* * * * *
The copter took me to the spaceport west of Cairo, and there I boarded the good ship Demeter for Luna City and points Out. I loaded up on g-sickness pills and they worked fine. I was sick as a dog.

By the time we got to Atronics City, my insides had grown resigned to their fate. As long as I didn't try to eat, my stomach would leave me alone.

Atronics City was about as depressing as a Turkish bath with all the lights on. It stood on a chunk of rock a couple of miles thick, and it looked like nothing more in this world than a welder's practice range.

From the outside, Atronics City is just a derby-shaped dome of nickel-iron, black and kind of dirty-looking. I suppose a transparent dome would have been more fun, but the builders of the company cities in the asteroids were businessmen, and they weren't concerned with having fun. There's nothing to look at outside the dome but chunks of rock and the blackness of space anyway, and you've got all this cheap iron floating around in the vicinity, and all a dome's supposed to do is keep the air in. Besides, though the Belt isn't as crowded as a lot of people think, there is quite a lot of debris rushing here and there, bumping into things, and a transparent dome would just get all scratched up, not to mention punctured.

From the inside, Atronics City is even jollier. There's the top level, directly under the dome, which is mainly parking area for scooters and tuggers of various kinds, plus the office shacks of the Assayer's Office, the Entry Authority, the Industry Troopers and so on. The next three levels have all been burned into the bowels of the planetoid.

Level two is the Atronics plant, and a noisy plant it is. Level three is the shopping and entertainment area--grocery stores and clothing stores and movie theaters and bars--and level four is housing, two rooms and kitchen for the unmarried, four rooms and kitchen plus one room for each child for the married.

All of these levels have one thing in common. Square corners, painted olive drab. The total effect of the place is suffocating. You feel like you're stuck in the middle of a stack of packing crates.

Most of the people living in Atronics City work, of course, for International Atronics, Incorporated. The rest of them work in the service occupations--running the bars and grocery stores and so on--that keep the company employees alive and relatively happy.

Wages come high in the places like Atronics City. Why not, the raw materials come practically for free. And as for working conditions, well, take a for instance. How do you make a vacuum tube? You fiddle with the innards and surround it all with glass. And how do you get the air out? No problem, boy, there wasn't any air in there to begin with.

At any rate, there I was at Atronics City. That was as far as Demeter would take me. Now, while the ship went on to Ludlum City and Chemisant City and the other asteroid business towns, my two suitcases and I dribbled down the elevator to my hostelry on level four.

* * * *
Have you ever taken an elevator ride when the gravity is practically non-existent? Well, don't. You see, the elevator manages to sink faster than you do. It isn't being lowered down to level four, it's being pulled down.

What this means is that the suitcases have to be lashed down with the straps provided, and you and the operator have to hold on tight to the hand-grips placed here and there around the wall. Otherwise, you'd clonk your head on the ceiling.
But we got to level four at last, and off I went with my suitcases and the operator's directions. The suitcases weighed about half an ounce each out here, and I felt as though I weighed the same. Every time I raised a foot, I was sure I was about to go sailing into a wall. Local citizens eased by me, their feet occasionally touching the iron pavement as they soared along, and I gave them all dirty looks.

Level four was nothing but walls and windows. The iron floor went among these walls and windows in a straight straight line, bisecting other "streets" at perfect right angles, and the iron ceiling sixteen feet up was lined with a double row of fluorescent tubes. I was beginning to feel claustrophobic already.

The Chalmers Hotel--named for an Atronics vice-president--had received my advance registration, which was nice. I was shown to a second-floor-room--nothing on level four had more than two stories--and was left to unpack my suitcases as best I may.

I had decided to spend a day or two at Atronics City before taking a scooter out to Ab Karpin's claim. Atronics City had been Karpin's and McCann's home base. All of McCann's premium payments had been mailed from here, and the normal mailing address for both of them was GPO Atronics City.

I wanted to know as much as possible about Ab Karpin before I went out to see him. And Atronics City seemed like the best place to get my information.

But not today. Today, my stomach was very unhappy, and my head was on sympathy strike. Today, I was going to spend my time exclusively in bed, trying not to float up to the ceiling.

* * * * *

The Mapping & Registry Office, it seemed to me the next day, was the best place to start. This was where prospectors filed their claims, but it was a lot more than that. The waiting room of M&R was the unofficial club of the asteroid prospectors. This is where they met with one another, talked together about the things that prospectors discuss, and made and dissolved their transient partnerships.

In this way, Karpin and McCann were unusual. They had maintained their partnership for fifteen years. That was about sixty times longer than most such arrangements lasted.

Searching the asteroid chunks for rare and valuable metals is basically pretty lonely work, and it's inevitable that the prospectors will every once in a while get hungry for human company and decide to try a team operation. But, at the same time, work like this attracts people who don't get along very well with human company. So the partnerships come and go, and the hatreds flare and are forgotten, and the normal prospecting team lasts an average of three months.

At any rate, it was to the Mapping & Registry Office that I went first. And, since that office was up on the first level, I went by elevator.

Riding up in that elevator was a heck of a lot more fun than riding down. The elevator whipped up like mad, the floor pressed against the soles of my feet, and it felt almost like good old Earth for a second or two there. But then the elevator stopped, and I held on tight to the hand-grips to keep from shooting through the top of the blasted thing.

The operator--a phlegmatic sort--gave me directions to the M&R, and off I went, still trying to figure out how to sail along as gracefully as the locals.

The Mapping & Registry Office occupied a good-sized shack over near the dome wall, next to the entry lock. I pushed open the door and went on in.

The waiting room was cozy and surprisingly large, large enough to comfortably hold the six maroon leather sofas scattered here and there on the pale green carpet, flanked by bronze ashtray stands. There were only six prospectors here at the moment, chatting together in two groups of three, and they all looked alike. Grizzled, ageless, watery-eyed, their clothing clean but baggy. I passed them and went on to the desk at the far end, behind which sat a young man in official gray, slowly turning the crank of a microfilm reader.

He looked up at my approach. I flashed my company identification and asked to speak to the manager. He went away, came back, and ushered me into an office which managed to be Spartan and sumptuous at the same time. The walls had been plastic-painted in textured brown, the iron floor had been lushly carpeted in gray, and the desk had been covered with a simulated wood coating.

The manager--a man named Teaking--went well with the office. His face and hands were spare and lean, but his uniform was immaculate, covered with every curlicue the regulations allowed. He welcomed me politely, but curiously, and I said, "I wonder if you know a prospector named Ab Karpin?"

"Karpin? Of course. He and old Jafe McCann--pity about McCann. I hear he got killed."

"Yes, he did."

"And that's what you're here for, eh?" He nodded sagely. "I didn't know the Belt boys could get insurance," he said.

"It isn't exactly that," I said. "This concerns a retirement plan, and--well, the details don't matter." Which, I
hoped, would end his curiosity in that line. "I was hoping you could give me some background on Karpin. And on McCann, too, for that matter."

He grinned a bit. "You saw the men sitting outside?"

I nodded.

"Then you've seen Karpin and McCann. Exactly the same. It doesn't matter if a man's thirty or sixty or what. It doesn't matter what he was like before he came out here. If he's been here a few years, he looks exactly like the bunch you saw outside there."

"That's appearance," I said. "What I was looking for was personality."

"Same thing," he said. "All of them. Close-mouthed, anti-social, fiercely independent, incurably romantic, always convinced that the big strike is just a piece of rock away. McCann, now, he was a bit more realistic than most. He'd be the one I'd expect to take out a retirement policy. A real pence-pincher, that one, though I shouldn't say it as he's dead. But that's the way he was. Brighter than most Belt boys when it came to money matters. I've seen him haggle over a new piece of equipment for their scooter, or some repair work, or some such thing, and he was a wonder to watch."

"And Karpin?" I asked him.

"A prospector," he said, as though that answered my question. "Same as everybody else. Not as sharp as McCann when it came to money. That's why all the money stuff in the partnership was handled by McCann. But Karpin was one of the sharpest boys in the business when it came to mineralogy. He knew rocks you and I never heard of, and most times he knew them by sight. Almost all of the Belt boys are college grads--you've got to know what you're looking for out here and what it looks like when you've found it--but Karpin has practically all of them beat. He's sharp."

* * *

"Sounds like a good team," I said.

"I guess that's why they stayed together so long," he said. "They complemented each other." He leaned forward, the inevitable prelude to a confidential remark. "I'll tell you something off the record, Mister," he said. "Those two were smarter than they knew. Their partnership was never legalized, it was never anything more than a piece of paper. And there's a bunch of fellas around here mighty unhappy about that today. Jafe McCann is the one who handled all the money matters, like I said. He's got IOU's all over town."

"And they can't collect from Karpin?"

He nodded. "Jafe McCann died just a bit too soon. He was sharp and cheap, but he was honest. If he'd lived, he would have repaid all his debts, I'm sure of it. And if this strike they made is as good as I hear, he would have been able to repay them with no trouble at all."

I nodded, somewhat impatiently. I had the feeling by now that I was talking to a man who was one of those who had a Jafe McCann IOU in his pocket. "How long has it been since you've seen Karpin?"

"Oh, Lord, not for a couple of months," he said. "Not since they went out together the last time and made that strike."

"Didn't Karpin come in to make his claim?"

"Not here. Over to Chemisant City. That was the nearest M&R to the strike."

"Oh." That was a pity. I would have liked to have known if there had been a change of any kind in Karpin since his partner's death. "I'll tell you what the situation is," I said, with a false air of truthfulness. "We have some misgivings about McCann's death. Not suspicions, exactly, just misgivings. The timing is what bothers us."

"You mean, because it happened just after the strike?"

"That's it," I answered frankly.

He shook his head. "I wouldn't get too excited about that, if I were you," he said. "It wouldn't be the first time it's happened. A man makes the big strike after all, and he gets so excited he forgets himself for a minute and gets careless. And you only have to be careless once out here."

"That may be it," I said. I got to my feet, knowing I'd picked up all there was from this man. "Thanks a lot for your cooperation," I said.

"Any time," he said. He stood and shook hands with me.

I went back out through the chatting prospectors and crossed the echoing cavern that was level one, aiming to rent myself a scooter.

* * *

I don't like rockets. They're noisy as the dickens, they steer hard and drive erratically, and you can never carry what I would consider a safe emergency excess of fuel. Nothing like the big steady-g interplanetary liners. On those I feel almost human.
The appearance of the scooter I was shown at the rental agency didn't do much to raise my opinion of this mode of transportation. The thing was a good ten years old, the paint scraped and scratched all over its egg-shaped, originally green-colored body, and the windshield—a silly term, really, for the front window of a craft that spends most of its time out where there isn't any wind—was scratched and pockmarked to the point of translucency by years of exposure to the asteroidal dust.

The rental agent was a sharp-nosed thin-faced type who displayed this refugee from a melting vat without a blush, and still didn't blush when he told me the charges. Twenty credits a day, plus fuel.

I paid without a murmur—it was the company's money, not mine—and paid an additional ten credits for the rental of a suit to go with it. I worked my way awkwardly into the suit, and clambered into the driver's seat of the relic. I attached the suit to the ship in all the necessary places, and the agent closed and spun the door.

Most of the black paint had worn off the handles of the controls, and insulation peeked through rips in the plastic siding here and there. I wondered if the thing had any slow leaks and supposed fatalistically that it had. The agent waved at me, stony-faced, the conveyor belt trundled me outside the dome, and I kicked the weary rocket into life.

The scooter had a tendency to roll to the right. If I hadn't kept fighting it back, it would have soon worked up a dandy little spin. I was spending so much time juggling with the controls that I practically missed a couple of my beacon rocks, and that would have just been too bad. If I'd gotten off the course I had carefully outlined for myself, I'd never have found my bearings again, and I would have just floated around amid the scenery until some passerby took pity and towed me back home.

But I managed to avoid getting lost, which surprised me, and after four nerve-wracking hours I finally spotted the yellow-painted X of a registered claim on a half-mile-thick chunk of rock dead ahead. As I got closer, I spied a scooter parked near the X, and beside it an inflated portable dome. The scooter was somewhat larger than mine, but no newer and probably even less safe. The dome was varicolored, from repeated patching.

This would be the claim, and this is where I would find Karpin, sitting on his property while waiting for the sale to go through. Prospectors like Karpin are free-lance men, working for no particular company. They register their claims in their own names, and then sell the rights to whichever company shows up first with the most attractive offer. There's a lot of paperwork to such a sale, and it's all handled by the company. While waiting, the smart prospector sits on his claim and makes sure nobody chips off a part of it for himself, a stunt that still happens now and again. It doesn't take too much concentrated explosive to make two rocks out of one rock, and a man's claim is only the rock with his X on it.

I set the scooter down next to the other one, and flicked the toggle for the air pumps, then put on the fishbowl and went about unattaching the suit from the ship. When the red light flashed on and off, I spun the door, opened it, and stepped out onto the rock, moving very cautiously. It isn't that I don't believe the magnets in the boot soles will work, it's just that I know for a fact that they won't work if I happen to raise both feet at the same time.

I clumped across the crude X to Karpin's dome. The dome had no viewports at all, so I wasn't sure Karpin was aware of my presence. I rapped my metal glove on the metal outer door of the lock, and then I was sure.

But it took him long enough to open up. I had just about decided he'd joined his partner in the long sleep when the door cracked open an inch. I pushed it open and stepped into the lock, ducking my head. The door was only five feet high, and just as wide as the lock itself, three feet. The other dimensions of the lock were: height, six feet six; width, one foot. Not exactly room to dance in.

When the red light high on the left-hand wall clicked off, I rapped on the inner door. It promptly opened, I stepped through and removed the fishbowl.

Karpin stood in the middle of the room, a small revolver in his hand. "Shut the door," he said.

I obeyed, moving slowly. I didn't want that gun to go off by mistake.

"Who are you?" Karpin demanded. The M&R man had been right. Ab Karpin was a dead ringer for all those other prospectors I'd seen back at Atronics City. Short and skinny and grizzled and ageless. He could have been forty, and he could have been ninety, but he was probably somewhere the other side of fifty. His hair was black and limp and thinning, ruffled in little wisps across his wrinkled pate. His forehead and cheeks were lined like a plowed field, and were much the same color. His eyes were wide apart and small, so deep-set beneath shaggy brows that they seemed black. His mouth was thin, almost lipless. The hand holding the revolver was nothing but bones and blue veins covered with taut skin.

He was wearing a dirty undershirt and an old pair of trousers that had been cut off raggedly just above his knobby knees. Faded slippers were on his feet. He had good reason for dressing that way, the temperature inside the dome must have been nearly ninety degrees. The dome wasn't reflecting away the sun's heat as well as it had when it
was young.

I looked at Karpin, and despite the revolver and the tense expression on his face, he was the least dangerous-looking man I'd ever run across. All at once, the idea that this anti-social old geezer had the drive or the imagination to murder his partner seemed ridiculous.

Apparently, I spent too much time looking him over, because he said again, "Who are you?" And this time he motioned impatiently with the revolver.

"Stanton," I told him. "Ged Stanton, Tangiers Mutual Insurance. I have identification, but it's in my pants pocket, down inside this suit."

"Get it," he said. "And move slow."

"Right you are."

I moved slow, as per directions, and peeled out of the suit, then reached into my trouser pocket and took out my ID clip. I flipped it open and showed him the card bearing my signature and picture and right thumb-print and the name of the company I represented, and he nodded, satisfied, and tossed the revolver over onto his bed. "I got to be careful," he said. "I got a big claim here."

"I know that," I told him. "Congratulations for it."

"Thanks," he said, but he still looked peevish. "You're here about Jafe's insurance, right?"

"That I am."

"Don't want to pay up, I suppose. That doesn't surprise me."

Blunt old men irritate me. "Well," I said, "we do have to investigate."

"Sure," he said. "You want some coffee?"

"Thank you."

"You can sit in that chair there. That was Jafe's."

I settled gingerly in the cloth-and-plastic foldaway chair he'd pointed at, and he went over to the kitchen area of the dome to start coffee. I took the opportunity to look the dome over. It was the first portable dome I'd ever been inside.

* * *

It was all one room, roughly circular, with a diameter of about fifteen feet. The sides went straight up for the first seven feet, then curved gradually inward to form the roof. At the center of the dome, the ceiling was about twelve feet high.

The floor of the room was simply the asteroidal rock surface, not completely level and smooth. There were two chairs and a table to the right of the entry lock, two foldaway cots around the wall beyond them, the kitchen area next and a cluttered storage area around on the other side. There was a heater standing alone in the center of the room, but it certainly wasn't needed now. Sweat was already trickling down the back of my neck and down my forehead into my eyebrows. I peeled off my shirt and used it to wipe sweat from my face. "Warm in here," I said.

"You get used to it," he muttered, which I found hard to believe.

He brought over the coffee, and I tasted it. It was rotten, as bitter as this old hermit's soul, but I said, "Good coffee. Thanks a lot."

"I like it strong," he said.

I looked around at the room again. "All the comforts of home, eh? Pretty ingenious arrangement."

"Sure," he said sourly. "How about getting to the point, Mister?"

There's only one way to handle a blunt old man. Be blunt right back. "I'll tell you how it is," I said. "The company isn't accusing you of anything, but it has to be sure everything's on the up and up before it pays out any ten thousand credits. And your partner just happening to fill out that cash-return form just before he died--well, you've got to admit it is a funny kind of coincidence."

"How so?" He slurped coffee, and glowered at me over the cup. "We made this strike here," he said. "We knew it was the big one. Jafe had that insurance policy of his in case he never did make the big strike. As soon as we knew this was the big one, he said, 'I guess I don't need that retirement now,' and sat right down and wrote out the cash-return. Then we opened a bottle of liquor and celebrated, and he got himself killed."

The way Karpin said it, it sounded smooth and natural. Too smooth and natural. "How did this accident happen anyway?" I asked him.

"I'm not one hundred per cent sure of that myself," he said. "I was pretty well drunk myself by that time. But he put on his suit and said he was going out to paint the X. He was falling all over himself, and I tried to tell him it could wait till we'd had some sleep, but he wouldn't pay any attention to me."

"So he went out," I said.

He nodded. "He went out first. After a couple minutes, I got lonesome in here, so I suited up and went out after him. It happened just as I was going out the lock, and I just barely got a glimpse of what happened."
He attacked the coffee again, noisily, and I prompted him, saying, "What did happen, Mister Karpin?"

"Well, he was capering around out there, waving the paint tube and such. There's a lot of sharp rock sticking out around here. Just as I got outside, he lost his balance and kicked out, and scraped right into some of that rock, and punctured his suit."

"I thought the body was lost," I said.

He nodded. "It was. The last thing in life Jafe ever did was try to shove himself away from those rocks. That, and the force of air coming out of that puncture for the first second or two, was enough to throw him up off the surface. It threw him up too high, and he never got back down."

My doubt must have showed in my face, because he added, "Mister, there isn't enough gravity on this place to shoot craps with."

He was right. As we talked, I kept finding myself holding unnecessarily tight to the arms of the chair. I kept having the feeling I was going to float out of the chair and hover around up at the top of the dome if I were to let go. It was silly of course--there was some gravity on that planetoid, after all--but I just don't seem to get used to low-gee.

Nevertheless, I still had some more questions. "Didn't you try to get his body back? Couldn't you have reached him?"

"I tried to, Mister," he said. "Old Jafe McCann was my partner for fifteen years. But I was drunk, and that's a fact. And I was afraid to go jumping up in the air, for fear I'd go floating away, too."

"Frankly," I said, "I'm no expert on low gravity and asteroids. But wouldn't McCann's body just go into orbit around this rock? I mean, it wouldn't simply go floating off into space, would it?"

"It sure would," he said. "There's a lot of other rocks out here, too, Mister, and a lot of them are bigger than this one and have a lot more gravity pull. I don't suppose there's a navigator in the business who could have computed Jafe's course in advance. He floated up, and then he floated back over the dome here and seemed to hover for a couple minutes, and then he just floated out and away. His isn't the only body circling around the sun with all these rocks, you know."

I chewed a lip and thought it all over. I didn't know enough about asteroid gravity or the conditions out here to be able to say for sure whether Karpin's story was true or not. Up to this point, I couldn't attack the problem on a fact basis. I had to depend on feeling now, the hunches and instincts of eight years in this job, hearing some people tell lies and other people tell the truth.

And my instinct said Ab Karpin was lying in his teeth. That dramatic little touch about McCann's body hovering over the dome before disappearing into the void, that sounded more like the embellishment of fiction than the circumstance of truth. And the string of coincidences were just too much. McCann just coincidentally happens to die right after he and his partner make their big strike. He happens to write out the cash-return form just before dying. And his body just happens to float away, so nobody can look at it and check Karpin's story.

But no matter what my instinct said, the story was smooth. It was smooth as glass, and there was no place for me to get a grip on it.

What now? There wasn't any hole in Karpin's story, at least none that I could see. I had to break his story somehow, and in order to do that I had to do some nosing around on this planetoid. I couldn't know in advance what I was looking for, I could only look. I'd know it when I found it. It would be something that conflicted with Karpin's story.

And for that, I had to be sure the story was complete. "You said McCann had gone out to paint the X," I said. "Did he paint it?"

Karpin shook his head. "He never got a chance. He spent all his time dancing, up till he went and killed himself."

"So you painted it yourself."

He nodded.

"And then you went on into Atronics City and registered your claim, is that the story?"

"No. Chemisant City was closer than Atronics City right then, so I went there. Just after Jafe's death, and everything--I didn't feel like being alone any more than I had to."

"You said Chemisant City was closer to you then," I said. "Isn't it now?"

"Things move around a lot out here, Mister," he said. "Right now, Chemisant City's almost twice as far from here as Atronics City. In about three days, it'll start swinging in closer again. Things keep shifting around out here."

"So I've noticed," I said. "When you took off to go to Chemisant City, didn't you make a try for your partner's body then?"
He shook his head. "He was long out of sight by then," he said. "That was ten, eleven hours later, when I took off."

"Why's that? All you had to do was paint the X and take off."

"Mister, I told you. I was drunk. I was falling down drunk, and when I saw I couldn't get at Jafe, and he was dead anyway, I came back in here and slept it off. Maybe if I'd been sober I would have taken the scooter and gone after him, but I was drunk."

"I see." And there just weren't any more questions I could think of to ask, not right now. So I said, "I've just had a shaky four-hour ride coming out here. Mind if I stick around a while before going back?"

"Help yourself," he said, in a pretty poor attempt at genial hospitality. "You can sleep over, if you want."

"Fine," I said. "I think I'd like that."

"You wouldn't happen to play cribbage, would you?" he asked, with the first real sign of animation I'd seen in him yet.

"I learn fast," I told him.

"Okay," he said. "I'll teach you." And he produced a filthy deck of cards and taught me.

* * * * *

After losing nine straight games of cribbage, I quit, and got to my feet. I was at my most casual as I stretched and said, "Okay if I wander around outside for a while? I've never been on an asteroid like this before. I mean, a little one like this. I've just been to the company cities up to now."

"Go right ahead," he said. "I've got some polishing and patching to do, anyway." He made his voice sound easy and innocent, but I noticed his eyes were alert and wary, watching me as I struggled back into my suit.

I didn't bother to put my shirt back on first, and that was a mistake. The temperature inside an atmosphere suit is a steady sixty-eight degrees. That had never seemed particularly chilly before, but after the heat of that dome, it seemed cold as a blizzard inside the suit.

I went on out through the airlock, and moved as briskly as possible in the cumbersome suit, while the sweat chilled on my back and face, and I accepted the glum conviction that one thing I was going to get out of this trip for sure was a nasty head cold.

I went over to the X first, and stood looking at it. It was just an X, that's all, shakily scrawled in yellow paint, with the initials "J-A" scrawled much smaller beside it.

I left the X and clumped away. The horizon was practically at arm's length, so it didn't take long for the dome to be out of sight. And then I clumped more slowly, studying the surface of the asteroid.

What I was looking for was a grave. I believed that Karpin was lying, that he had murdered his partner. And I didn't believe that Jafe McCann's body had floated off into space. I was convinced that his body was still somewhere on this asteroid. Karpin had been forced to concoct a story about the body being lost because the appearance of the body would prove somehow that it had been murder and not accident. I was convinced of that, and now all I had to do was prove it.

But that asteroid was a pretty unlikely place for a grave. That wasn't dirt I was walking on, it was rock, solid metallic rock. You don't dig a grave in solid rock, not with a shovel. You maybe can do it with dynamite, but that won't work too well if your object is to keep anybody from seeing that the hole has been made. Dirt can be patted down. Blown-up rock looks like blown-up rock, and that's all there is to it.

I considered crevices and fissures in the surface, some cranny large enough for Karpin to have stuffed the body into. But I didn't find any of these either as I plodded along, being sure to keep one magnetted boot always in contact with the ground.

Karpin and McCann had set their dome up at just about the only really level spot on that entire planetoid. The rest of it was nothing but jagged rock, and it wasn't easy traveling at all, maneuvering around with magnets on my boots and a bulky atmosphere suit cramping my movements.

* * *

And then I stopped and looked out at space and cursed myself for a ring-tailed baboon. McCann's body might be anywhere in the Solar System, anywhere at all, but there was one place I could be sure it wasn't, and that place was this asteroid. No, Karpin had not blown a grave or stuffed the body into a fissure in the ground. Why not? Because this chunk of rock was valuable, that's why not. Because Karpin was in the process of selling it to one of the major companies, and that company would come along and chop this chunk of rock to pieces, getting the valuable metal out, and McCann's body would turn up in the first week of operations if Karpin were stupid enough to bury it here.

Ten hours between McCann's death and Karpin's departure for Chemisant City. He'd admitted that already. And I was willing to bet he'd spent at least part of that time carrying McCann's body to some other asteroid, one he was sure was nothing but worthless rock. If that were true, it meant the mortal remains of Jafe McCann were now
somewhere--anywhere--in the Asteroid Belt. Even if I assumed that the body had been hidden on an asteroid somewhere between here and Chemisant City--which wasn't necessarily so--that wouldn't help at all. The relative positions of planetoids in the Belt just keep on shifting. A small chunk of rock that was between here and Chemisant City a few weeks ago--it could be almost anywhere in the Belt right now.

The body, that was the main item. I'd more or less counted on finding it somehow. At the moment, I couldn't think of any other angle for attacking Karpin's story.

As I clopped morosely back to the dome, I nibbled at Karpin's story in my mind. For instance, why go to Chemisant City? It was closer, he said, but it couldn't have been closer by more than a couple of hours. The way I understood it, Karpin was well-known back on Atronics City--it was the normal base of operations for he and his partner--and he didn't know a soul at Chemisant City. Did it make sense for him to go somewhere he wasn't known after his partner's death, even if it was an hour closer? No, it made a lot more sense for a man in that situation to go where he's known, go someplace where he has friends who'll sympathize with him and help him over the shock of losing a partner of fifteen years' standing, even if going there does mean traveling an hour longer.

And there was always the cash-return form. That was what I was here about in the first place. It just didn't make sense for McCann to have held up his celebration while he filled out a form that he wouldn't be able to mail until he got back to Atronics City. And yet the company's handwriting experts were convinced that it wasn't a forgery, and I could pretty well take their word for it.

Mulling these things over as I tramped back toward the dome, I suddenly heard a distant bell ringing way back in my head. The glimmering of an idea, not an idea yet but just the hint of one. I wasn't sure where it led, or even if it led anywhere at all, but I was going to find out.

Karpin opened the doors for me. By the time I'd stripped off the suit he was back to work. He was cleaning the single unit which was his combination stove and refrigerator and sink and garbage disposal.

I looked around the dome again, and I had to admit that a lot of ingenuity had gone into the manufacture and design of this dome and its contents. The dome itself, when deflated, folded down into an oblong box three feet by one foot by one foot. The lock itself, of course, folded separately, into another box somewhat smaller than that.

As for the gear inside the dome, it was functional and collapsible, and there wasn't a single item there that wasn't needed. There were the two chairs and the two cots and the table, all of them foldaway. There was that fantastic combination job Karpin was cleaning right now, and that had dimensions of four feet by three feet by three feet. The clutter of gear over to the left wasn't as much of a clutter as it looked. There was a Geiger counter, an automatic spectrograph, two atmosphere suits, a torsion densimeter, a core-cutting drill, a few small hammers and picks, two spare air tanks, boxes of food concentrate, a paint tube, a doorless jimmy-john and two small metal boxes about eight inches cube. These last were undoubtedly Karpin's and McCann's pouches, where they kept whatever letters, money, address books or other small bits of possessions they owned. Back of this mound of gear, against the wall, stood the air reconditioner, humming quietly to itself.

In this small enclosed space there was everything a man needed to keep himself alive. Everything except human company. And if you didn't need human company, then you had everything. Just on the other side of that dome, there was a million miles of death, in a million possible ways. On this side of the dome, life was cozy, if somewhat Spartan and very hot.

I knew for sure I was going to get a head cold. My body had adjusted to the sixty-eight degrees inside the suit, finally, and now was very annoyed to find the temperature shooting up to ninety again.

Since Karpin didn't seem inclined to talk, and I would rather spend my time thinking than talking anyway, I took a hint from him and did some cleaning. I'd noticed a smeared spot about nose-level on the faceplate of my fishbowl, and now was as good a time as any to get rid of it. It had a tendency to make my eyes cross.

My shirt was sodden and wrinkled by this time anyway, having first been used to wipe sweat from my face and later been rolled into a ball and left on the chair when I went outside, so I used it for a cleaning rag, buffing like mad the silvered surface of the faceplate. Faceplates are silvered, not so the man inside can look out and no one else can look in, but in order to keep some of the more violent rays of the sun from getting through to the face.

I buffed for a while, and then I put the fishbowl on my head and looked through it. The spot was gone, so I went over and reattached it to the rest of the suit, and then settled back in my chair again and lit a cigarette.

Karpin spoke up. "Wish you wouldn't smoke. Makes it tough on the conditioner."

"Oh," I said. "Sorry." So I just sat, thinking morosely about non-forged cash-return forms, and coincidences, and likely spots to hide a body in the Asteroid Belt.

Where would one dispose of a body in the asteroids? I went back through my thinking on that topic, and I found holes big enough to drive Karpin's claim through. This idea of leaving the body on some worthless chunk of
rock, for instance. If Karpin had killed his partner--and I was dead sure he had--he'd planned it carefully and he
wouldn't be leaving anything to chance. Now, an asteroid isn't worthless to a prospector until that prospector has
landed on it and tested it. Karpin might know that such-and-such an asteroid was nothing but worthless stone, but
the guy who stops there and finds McCann's body might not know it.

No, Karpin wouldn't leave that to chance. He would get rid of that body, and he would do it in such a way that
nobody would ever find it.

How? Not by leaving it on a worthless asteroid, and not by just pushing it off into space. The distance between
asteroids is large, but so's the travel. McCann's body, floating around in the blackness, might just be found by
somebody.

And that, so far as I could see, eliminated the possibilities. McCann's body was in the Belt. I'd eliminated both
the asteroids themselves and the space around the asteroids as hiding places. What was left?

The sun, of course.

I thought that over for a while, rather surprised at myself for having noticed the possibility. Now, let's say
Karpin attaches a small rocket to McCann's body, stuffed into its atmosphere suit. He sets the rocket going, and off
goes McCann. Not that he aims it toward the sun, that wouldn't work well at all. Instead of falling into the sun, the
body would simply take up a long elliptical orbit around the sun, and would come back to the asteroids every few
hundred years. No, he would aim McCann back, in the direction opposite to the direction or rotation of the asteroids.
He would, in essence, slow McCann's body down, make it practically stop in relation to the motion of the asteroids.
And then it would simply fall into the sun.

None of my ideas, it seemed, were happy ones. If McCann's body were even at this moment falling toward the
sun, it was just as useful to me as if it were on some other asteroid.

But, wait a second. Karpin and McCann had worked with the minimum of equipment, I'd already noticed that.
They didn't have extras of anything, and they certainly wouldn't have extra rockets. Except for one fast trip to
Chemisant City--when he had neither the time nor the excuse to buy a jato rocket--Karpin had spent all of his time
since McCann's death right here on this planetoid.

So that killed that idea.

While I was hunting around for some other idea, Karpin spoke up again, for the first time in maybe twenty
minutes. "You think I killed him, don't you?" he said, not looking around from his cleaning job.

I considered my answer. There was no reason at all to be overly polite to this sour old buzzard, but at the same
time I am naturally the soft-spoken type. "We aren't sure," I said. "We just think there are some odd items to be
explained."

"Such as what?" he demanded.

"Such as the timing of McCann's cash-return form."

"I already explained that," he said.

"I know. You've explained everything."

"He wrote it out himself," the old man insisted. He put down his cleaning cloth, and turned to face me. "I
suppose your company checked the handwriting already, and Jafe McCann is the one who wrote that form."

He was so blasted sure of himself. "It would seem that way," I said.

"What other odd items you worried about?" he asked me, in a rusty attempt at sarcasm.

"Well," I said, "there's this business of going to Chemisant City. It would have made more sense for you to go
to Atronics City, where you were known."

"Chemisant was closer," he said. He shook a finger at me. "That company of yours thinks it can cheat me out of
my money," he said. "Well, it can't. I know my rights. That money belongs to me."

"I guess you're doing pretty well without McCann," I said.

His angry expression was replaced by one of bewilderment. "What do you mean?"

"They told me back at Atronics City," I explained, "that McCann was the money expert and you were the
metals expert, and that's why McCann handled all your buying on credit and stuff like that. Looks as though you've
got a pretty keen eye for money yourself."

"I know what's mine," he mumbled, and turned away. He went back to scrubbing the stove coils again.

I stared at his back. Something had happened just then, and I wasn't sure what. He'd just been starting to warm
up to a tirade against the dirty insurance company, and all of a sudden he'd folded up and shut up like a clam.

And then I saw it. Or at least I saw part of it. I saw how that cash-return form fit in, and how it made perfect
sense.

Now, all I needed was proof of murder. Preferably a body. I had the rest of it. Then I could pack the old geezer
back to Atronics City and get proof for the part I'd already figured out.

I'd like that. I'd like getting back to Atronics City, and having this all straightened out, and then taking the very
next liner straight back to Earth. More immediately, I'd like getting out of this heat and back into the cool sixty-eight
degrees of--

And then it hit me. The whole thing hit me, and I just sat there and stared. They did not carry extras, Karpin and McCann, they did not carry one item of equipment more than they needed.

I sat there and looked at the place where the dead body was hidden, and I said, "Well, I'll be a son of a gun!"

He turned and looked at me, and then he followed the direction of my gaze, and he saw what I was staring at, and he made a jump across the room at the revolver lying on the cot.

* * *

That's what saved me. He moved too fast, jerked his muscles too hard, and went sailing up and over the cot and ricocheted off the dome wall. And that gave me plenty of time to get up from the chair, moving more cautiously than he had, and get my hands on the revolver before he could get himself squared away again.

I straightened with the gun in my hand and looked into a face white with frustration and rage. "Okay, Mister McCann," I said. "It's all over."

He knew I had him, but he tried not to show it. "What are you talking about? McCann's dead."

"Sure he is," I said. "Jafe McCann was the money-minded part of the team. He was the one who signed for all the loans and all the equipment bought on credit. With this big strike in, Jafe McCann was the one who'd have to pay all that money."

"You're babbling," he snapped, but the words were hollow.

"You weren't satisfied with half a loaf," I said. "You should have been. Half a loaf is better than none. But you wanted every penny you could get your hands on, and you wanted to pay out just as little money as you possibly could. So when you killed Ab Karpin, you saw a way to kill your debts as well. You'd become Ab Karpin, and it would be Jafe McCann who was dead, and the debts dead with him."

"That's a lie," he said, his voice getting shrill. "I'm Ab Karpin, and I've got papers to prove it."

"Sure. Papers you stole from a dead man. And you might have gotten away with it, too. But you just couldn't leave well enough alone, could you? Not satisfied with having the whole claim to yourself, you switched identities with your victim to avoid your debts. And not satisfied with that, you filled out a cash-return form and tried to collect your money as your own heir. That's why you had to go to Chemisant City, where nobody would recognize Ab Karpin or Jafe McCann, rather than to Atronics City where you were well-known."

"You don't want to make too many wild accusations," he shouted, his voice shaking. "You don't want to go around accusing people of things you can't prove."

"I can prove it," I told him. "I can prove everything I've said. As to who you are, there's no problem. All I have to do is bring you back to Atronics City. There'll be plenty of people there to identify you. And as to proving you murdered Ab Karpin, I think his body will be proof enough, don't you?"

McCann watched me as I backed slowly around the room to the mound of gear. The partners had had no extra equipment, no extra equipment at all. I looked down at the two atmosphere suits lying side by side on the metallic rock floor.

Two atmosphere suits. The dead man was supposed to be in one of those, floating out in space somewhere. He was in the suit, right enough, I was sure of that, but he wasn't floating anywhere.

A space suit is a perfect place to hide a body, for as long as it has to be hid. The silvered faceplate keeps you from seeing inside, and the suit is, naturally, a sealed atmosphere. A body can rot away to ashes inside a space suit, and you'll never notice a thing on the outside.

* * *

I'd had the right idea after all. McCann had planned to get rid of Karpin's body by attaching a rocket to it, slowing it down, and letting it fall into the sun. But he hadn't had an opportunity yet to go buy a rocket. He couldn't go to Atronics City, where he could have bought the rocket on credit, and he couldn't go to Chemisant City until the claim sale went through and he had some money to spend. And in the meantime, Karpin's body was perfectly safe, sealed away inside his atmosphere suit.

And it would have been safe, too, if McCann hadn't been just a little bit too greedy. He could kill his partner and get away with it; policemen on the Belt are even farther apart than the asteroids. He could swindle his creditors and get away with it; they had no way of checking up and no reason to suspect a switch in identities. But when he tried to get his own money back from Tangiers Mutual Insurance; that's when he made his mistake.

I studied the two atmosphere suits, at the same time managing to keep a wary eye on Jafe McCann, standing rigid and silent across the room. Which one of those suits contained the body of Ab Karpin?

I'd prodded that suit with my toe. "He's in there, isn't he?"
"You're crazy."
"Think I should open it up and check? It's been almost a month, you know. I imagine he's pretty ripe by now."
I reached down to the neck-fastenings on the fishbowl, and McCann finally moved. His arms jerked up, and he cried, "Don't! He's in there, he's in there! For God's sake, don't open it up!"
I relaxed. Mission accomplished. "Crawl into your suit, little man," I said. "We've got ourselves a trip to make, the three of us."

* * * * *

Henderson, as usual, was jovial but stern. "You did a fine job up there, Ged," he said, with false familiarity. "Really brilliant work."
"Thank you very much," I said. I was holding the last piece of news for a minute or two, relishing it. "But you brought McCann in over a week ago. I don't see why you had to stay up at Atronics City at all after that, much less ten days."
I sat back in the chair and negligently crossed my legs. "I just thought I'd take a little vacation," I said carelessly, and lit a cigarette. I flicked ashes in the general direction of the ashtray on Henderson's desk. Some of them made it.
"A vacation?" he echoed, eyes widening. Henderson was a company man, a real company man. A vacation for him was purgatory, it was separation from a loved one. "I don't believe you have a vacation coming," he said frostily, "for at least six months."
"That's what you think, Henny," I said. All he could do at that was blink.
I went on, enjoying myself hugely. "I don't like this company," I said. "And I don't like this job. And I don't like you. And from now on, I've decided, it's going to be vacation all the time."
"Ged," he said, his voice faint, "what's the matter with you? Don't you feel well?"
"I feel well," I told him. "I feel fine. Now, I'll tell you why I spent an extra ten days at Atronics City. McCann made and registered the big strike, right?"
Henderson nodded blankly, apparently not trusting himself to speak.
"Wrong," I said cheerfully. "McCann went to Chemisant City and filled out all the forms required for registering a claim. But every place he was supposed to sign his name he wrote Ab Karpin instead. Jafe McCann never did make a legal registration of his claim."
Henderson just looked fish-eyed.
"So," I went on, "as soon as I turned McCann over to the law at Atronics City, I went and registered that claim myself. And then I waited around for ten days until the company finished the paperwork involved in buying that claim from me. And then I came straight back here, just to say goodbye to you. Wasn't that nice?"
He didn't move.
"Goodbye," I said.
THE END
PREFACE

In the course of my experience as an occasional lecturer during the past twelve years, I have been much impressed by the keen interest evinced, even by the most unlettered persons, when astronomical subjects are dealt with in plain untechnical language which they can really grasp and understand.

The pertinent questions which have been addressed to me privately by members of my audiences have clearly indicated that there is ample scope for writers in satisfying a widespread desire for fuller and clearer information upon such subjects. I have observed that particular interest is taken in the planet Mars and also in the moon, but ordinary persons usually find astronomical text-books too technical and too difficult to master; whilst, as regards Mars, the information they contain is generally meagre and sometimes not up-to-date.

Scientific readers are already provided for: and it occurred to me that it would be much more useful and appeal to a more numerous class if, instead of writing a book on the usual lines, I wrote a narrative of events which might be supposed to occur in the course of an actual voyage to Mars; and describing what might be seen on the planet during a short visit.

This is the genesis of the story; and, in carrying out my programme, I have endeavoured to convey by means of natural incidents and conversations between the characters portrayed, the most recent and reliable scientific information respecting the moon and Mars; together with other astronomical information: stating it in an interesting form, and in concise, clear, and understandable language.

Every endeavour has been made to ensure that this scientific information shall be thoroughly accurate, so that in this respect the book may be referred to with as much confidence as any ordinary textbook.

Apart from my own studies and work, all these facts have been carefully verified by reference, as regards the moon, to the works of such well-known authorities as Neison, Elger, Proctor, Sir Robert Ball, &c., whilst, with respect to Mars, the works of Professor Lowell, Flammarion, Professor Langley, and other writers, as well as practical papers by other actual observers of the planet, have been studied.

The personal opinions expressed are entirely my own, and the technical writers above mentioned are in no way responsible for them. I do not, however, expect my readers to accept all my views, as they relate to matters in which there is ample room for differences of opinion.

The reader will, of course, understand that whilst the astronomical information is, in all cases, scientific fact according to our present knowledge, the story itself—as well as the attempt to describe the physical and social conditions on Mars—is purely imaginative. It is not, however, merely random imagining. In a narrative such as this some matters—as, for instance, the “air-ship,” and the possibility of a voyage through space—must be taken for granted; but the other ideas are mainly logical deductions from known facts and scientific data, or legitimate inferences.

Many years' careful study of the various theories which have been evolved has convinced me that the weight of evidence is in favour of Professor Lowell's conceptions, as being not only the most reasonable but the most scientific; and that they fit the observed facts with a completeness attaching to no other theory. These conceptions I have endeavoured to present fully and clearly; together with my own views as an entirely independent writer.

In dealing with the conditions on a distant and inaccessible world the farthest flight of imagination might fall short of the reality, but I have preferred to treat these matters somewhat restrainedly. Whilst no one can say positively that the intelligent inhabitants of Mars do not possess bodies resembling our own, it is very probable that they differ from us entirely; and may possess forms which would appear to us strange and weird. I have, however, thought it desirable to endow the Martians with bodies resembling ours, but glorified in form and features. The powers ascribed to the Martians are really only extensions of powers which some amongst us claim to possess, and they fall short of what more than one modern scientific writer has predicated as being within the possibilities of science at a not very distant future.

During the past few years I have been greatly indebted to Professor Lowell for his kindness and ready courtesy in furnishing me with information on obscure matters connected with Mars; and my thanks are also due to the Rev. Theodore E.R. Phillips, of Ashstead, who was good enough to read the manuscript of this book, and whose great observational experience enabled him to make valuable suggestions in regard to the scientific matters dealt with.
Truly "a labour of love," this little book—which Professor Lowell has most kindly permitted me to dedicate to him—is now submitted to the public, in the sincere hope that its perusal may serve not only to while away a leisure hour, but tend to nurture a love of the sublime science of astronomy, and at the same time provide some food for thought.

A few maps, plates, and charts have been added to give completeness to the work, and it is hoped that they will aid the reader in understanding the several matters dealt with.

M.W. 1910.
(Narrative written by Wilfrid Poynders, Esquire, late of Norbury, in the County Borough of Croydon, Surrey)

CHAPTER I

WE START ON A VERY LONG VOYAGE

"Well, I suppose it is about time to get ready for starting?"

The speaker was a smart, well-set-up man about forty-three years of age, whose keen and alert expression, clear eyes and well-cut features were a true index to the intellectuality and integrity of his character; whilst his closely compressed lips and the deep vertical line down the centre of his forehead betokened a dogged perseverance in carrying into effect anything he might undertake.

John Yiewsley Claxton, for that was his name, was my very intimate friend of at least twenty-five years' standing; and during the greater portion of that time he had been my constant companion. We had passed through many trials and troubles together, but a better friend and companion no man could have desired.

We were just finishing a last quiet smoke and chat in my snuggery at Norbury, near Croydon, preparatory to starting off on a very long journey for which all arrangements had been completed, and we had risen early that morning in order to have everything in readiness.

John took his pipe from his lips as he spoke, then, rising, stretched out his arms and braced himself up like one ready and eager for any emergency; the next minute he was smoking in his usual calm and thoughtful manner. I rose when he did, then giving a few final instructions to Mrs. Challen, my housekeeper, we bade her "good-bye" and stepped out on to the lawn, thence crossing over to a gate at the far end of the garden, we passed into an extensive field and walked toward a large shed that stood near its centre.

It was a most beautiful evening near the beginning of August 1909, clear and calm. The sun had only just passed below the horizon, the sky immediately above it being a rippled glory of gold, merging higher up into gold flecked with crimson, then into a placid sea of pale apple-green. Above this were fleecy clouds of delicate rose-pink, which reflected their splendours upon the higher parts of the surrounding hills, the latter standing out clear and sharp, and glowing with roseate hues, whilst their bases were seen dimly as through a thin veiling of purple mist.

Surely nothing could be better for the commencement of our long-planned trip. The moon would not rise until about a quarter-past nine, and darkness would have descended by the time we were ready to start. This was exactly what we required, because we did not wish either our preparations or our departure to be observed.

Just as we arrived within hail of the shed the door opened, and a rugged-featured man with sandy hair stepped out. This was Kenneth M'Allister, our engineer and general factotum in all mechanical matters—a typical specimen of a Scotch engineer. He had followed his profession in its different phases on tramp-steamers, on ocean liners, naval gunboats, and even on battle-ships, besides having served for several years in the workshops of a great firm of electrical engineers.

Whether repairing a broken propeller-shaft two or three scores of tons in weight, the most intricate machinery, or the most delicate electric mechanism, he was equally at home and sure in his work; in fact nothing seemed to come amiss to him. His machinery was always the object of his most anxious care, and, providing that all worked satisfactorily, nothing else troubled him much.

"Well, M'Allister," I called to him, "is everything ready for our trip to-night?"

"Heh, mon," he replied, "everything is all ready; will you look in and take a turn round the ship?"

"Certainly we will," I answered; so we all went into the shed, where we gazed with equal pride and satisfaction upon the splendidly shining object which was housed therein. Here, in perfect readiness for its destined service, was our air-ship—if it could be so called—upon which we three had expended years of thought, experiment, and work.

Outwardly it was shaped somewhat like a fish, being constructed of a special metal—our joint invention—which we had named "martalium." The metal was composed of aluminium and two other rarer metals which, when combined together, produced a substance almost as light as aluminium, yet many times harder and tougher than case-hardened steel; whilst its surface shone like burnished silver and could never in any circumstances become tarnished or affected by rust.

The ship was ninety-five feet in length, and its diameter twenty feet in the broadest part, tapering off to a point at either end.
With the exception of the steering and balancing fans, there was no machinery whatever visible on the exterior of the vessel. Several windows along each side, together with a few at the top and bottom of the vessel, gave light to the interior, and would allow for observations being made in any direction. These windows were all constructed of a special toughened glass obtained from Vienna, very thick and warranted to withstand the hardest blows. Along each side of the vessel there was an observation platform or gallery on to which the exterior doors opened, and each gallery was provided with a protecting railing.

The interior of the ship was divided into five separate compartments, the rear one being the general living and sleeping room, having observation windows so arranged as to command an outlook in all directions. The next compartment was mainly a store-room, but, like all the others, could be used for observation purposes; next to that was a small compartment intended for a special purpose which will hereafter be apparent; then another containing water storage, apparatus for compressing or rarefying air, as well as machinery for producing the latter chemically.

Lastly, right in the forepart of the vessel was M'Allister's special sanctum, containing the driving, lighting, warming, and steering machinery, but electric buttons and switches were also provided for controlling these in every compartment, so that whichever one we happened to be in we were prepared for all emergencies. Periscopes capable of being turned in all directions also communicated with every compartment, thus we could always see what might be around us.

All the machinery was either electric or magnetic, some of it being very simple; other portions were extremely intricate, but nearly all was the outcome of our joint inventions. Such parts as could not profitably be made by ourselves had been carefully distributed between several firms of founders and engineers, in order that none could have any means of discovering the use to which they were intended to be put. The whole of the shell of the vessel was double, with a packed space between the two skins; and each door opened into a small lobby, having another door on the farther side, to ensure that every part might be kept perfectly air-tight when required.

By the time we had completed a thorough inspection of the vessel and its machinery, and overhauled the stores to make sure that everything requisite was on board, it had become nearly dark, so, moving a switch, M'Allister swung open the great doors at the end of the shed. The vessel was standing upon a low trolley having many wheels running on rails, with a small electric motor beneath it, and, upon M'Allister moving the trolley switch, the whole affair glided smoothly out into the open field. I may as well confess that we owed this trolley and the mode of its working to ideas gained during an inspection of the construction and working of the conduit trams belonging to the London County Council.

When the vessel was out in the open we congratulated ourselves upon its splendid proportions and business-like appearance.

I asked M'Allister whether "he was satisfied with the result of our labours?"

"Mon," he replied, "she's grand, and it's fine to have the handling of such machinery; everything works as slick as grease!" It was a pleasure to hear him talk about his machines, for he was always so enthusiastic where they were concerned.

"Now," I suggested, "before we start we'll give our good ship her name."

"Bravo!" said John Claxton, "and we'll drink to her success, a good voyage and a safe return"; and he was so struck by the brilliance of his idea that he actually took his pipe from his lips, and, holding it in his hand, regarded it with thoughtful contemplation for quite three minutes.

I accordingly went to the store-room and brought out two bottles of champagne. Directly M'Allister saw them he entered a vigorous and emphatic protest, saying, "Heh, Professor! you're surely not going to celebrate this most auspicious event with such poor fizzy stuff as champagne? Let's have a wee drop of good old Scotch whisky, and do the thing properly!"

John Claxton here interposed: "Let M'Allister have his whisky if he prefers it, and we'll have the 'fizz'!" So I went laughing to the store again and returned with a bottle of special Scotch, whereat M'Allister's eye gleamed as he smiled approval.

Then, taking up a bottle of the champagne, I broke it over the prow of the vessel, and we solemnly christened her the Areonal in honour of the planet for which we were bound.

Raising high our glasses we gave the toast of "The Areonal; may she and her passengers have a good voyage and a safe return!" M'Allister peered over the rim of his glass, and, with upturned eyes, remarked that "his old wife in Glasgow would be looking for his safe return in a few months' time"; then his glass slowly tipped up, and the old Scotch whisky disappeared.

Claxton and I at once stepped on board the vessel, and having just set the machinery slowly moving so as to raise the vessel a few feet, I put on the neutral power so that the ship remained poised in the air. M'Allister ran the trolley back into the shed, closed the doors, and switched off the electric current; then climbed the extending ladder, and came on board, John steadying the vessel by an anchor rope in the meantime.
M’Allister took over the command of the machinery, and, setting it in motion, the Areonal at once rose slowly and gracefully straight up into the air.

John and I were standing outside on the platform, from whence, looking toward the house, we could plainly see Mrs. Challen at the open door of our sitting-room waving farewell to us—her figure silhouetted against the bright light of the room. We waved back to her in response, but I am very doubtful if she could see our signal, as she was looking into the darkness.

We now rose rapidly as M’Allister switched on more power, and far away to the northward we could see over the whole extent of the vast metropolis, with its countless miles of lighted streets. On turning towards the east the Crystal Palace, which was lighted up, was a very conspicuous object against the skyline over the Sydenham hills.

John, when he saw it, remarked that “it would have been an appropriate tribute to our enterprise if the Palace Company had provided one of their grand firework displays as a send-off for us”; “but,” he added, “these companies will never do what is expected of them!” On the westward side the lights all along the hill where Sutton lies were clearly visible; farther off was Epsom, and, with the aid of a glass, we could even faintly see the lights of Guildford in the far distance.

Nearly south of us Croydon seemed from our altitude to lie almost beneath our vessel. We directed our course towards the south-east, passing over the railway-station at Thornton Heath, with Croydon to the right of us, just as the clock of the Croydon Town Hall was striking nine. The long lines of lighted streets made a fine panorama, and we could trace the lights of the moving tram-cars out to Anerley, South Norwood, Purley, Wallington, and Mitcham.

Although we were fully 5000 feet, or nearly a mile, above the earth it was surprising how clearly we could hear the sounds from below—the rumble of the electric tram-cars, the clang of their gongs, the toot-toot of the motor-horns, and, louder still, the whistles of the locomotives on the London and Brighton Railway were borne to us with almost startling distinctness through the still night air.

Our electric lights were now switched on at their full power, their bright beams shining out through the windows all around the vessel. Whilst we were on the ground we only used just sufficient light to see by, as we did not wish to draw attention to our proceedings; but now we were well up and on our way it mattered not who saw us.

With increased speed we passed over South Norwood and the village of Shirley, rising higher and higher as we proceeded on our way. The moon, which was just past the full, had not risen above the horizon of those upon the earth below us; but we had now attained such an altitude that it became visible to us, low down on the horizon and far ahead on our left hand. Owing to our height above the earth it soon became impossible for us to see the places over which we passed, and as we were moving over an open part of Kent there were very few lights which we could have seen in any case. As there was nothing of particular interest to attract our attention which we had not already seen on our trial trips, we entered our general room and sat down to supper.

The machinery had been set to maintain a speed of 150 miles an hour until we passed beyond the limits of the earth’s atmosphere; for though, no doubt, we might safely have travelled faster, we did not intend taking any risk of overheating our vessel by the friction of the atmosphere.

Notwithstanding the speed at which we were travelling we were quite unconscious of any movement in our vessel. The impression we received was not that we were rushing away from the earth, but that the earth was rapidly falling away from our position in space.

It may, perhaps, be desirable that I should now give a little information respecting myself and my friends, together with some explanation of our reasons for embarking upon such a very long voyage.

CHAPTER II
PERSONAL REMINISCENCES—WHY WE DECIDED ON THE VOYAGE

My name is Wilfrid Poynders, and during the greater part of my lifetime of more than sixty-three years astronomy has been my favourite study. For the last thirty years the planet Mars has been an object of special interest to me, and I have devoted much time to observation of the planet and have endeavoured to make myself fully acquainted with all that has been discovered or surmised respecting it.

My dear wife had died when I was thirty-six years of age, leaving me with one child, my son Mark, then about fifteen years old. In my intense sorrow at my bereavement I should probably have become almost a hermit had it not been for my boy who, having been carefully educated, was a bright and intelligent lad. I now took him under my special care and made it my constant endeavour to impart to him such of my own knowledge as seemed likely to be useful or interesting, hoping to keep him with me for many years as a companion. He soon became imbued with my love of mechanical pursuits and also with my passion for astronomy and allied sciences, developing an interest in Mars equal to if not surpassing my own.

His most intimate schoolfellow was John Claxton, and, as there was a very strong friendship between them, we were so much together that I came to regard him almost as a second son.

When my boy was in his twentieth year I noticed that a great change came over him, for instead of being
which effectually screened us from observation by the inhabitants of the houses in the London Road. Thus we
work and experiments, lying as it did in the valley on the westward side of a small eminence known as Pollard's Hill,
when together, and the arrangement appeared to suit them both, it was not my place to make any comment.
her relatives in Glasgow. It was not exactly my ideal of married life, but as the couple always seemed happy enough
occasionally, or he went to spend a few days with her, but as a permanent arrangement she preferred staying with
separation that she declined our offer to find a home for herself and her husband near us. She paid him a visit
was at Glasgow, and owing to his so often being away at sea for long periods, she had become so accustomed to the
element. M'Allister was about fifty years of age when he joined us, married, but without children. His wife's home
of machinery it appealed to his professional pride, so, being out of an engagement, he communicated with him, making a liberal offer for his assistance in our scheme, and as it was a question of dealing
with an entirely new kind of machinery it appealed to his professional pride, so, being out of an engagement, he
immediately sent off for a doctor, who advised that it would be best to let him lie and he would probably awaken
naturally in a few hours' time. This indeed proved to be the case; and, as soon as he awoke, the doctor carefully
examined him, but could find nothing wrong to account for what had happened. A month later he had a similar
seizure, with the same result, but this time his sleep lasted nearly thirty hours. On the doctor's advice I then took him
to the seaside for several weeks' stay, and there he soon regained his usual buoyancy of spirits.
Shortly after our return home, however, he had a third seizure from which he never awoke, but, to my profound
sorrow, passed quietly away. Just before the end came I noticed his lips move slightly as though he were trying to
speak, and on bending down to listen I thought I caught faintly what sounded like the words, "I am coming," but whether this really were so I could not be sure.

I will not dwell upon the pain and sorrow of that dark and dreary portion of my life when I was left quite alone,
without a single relative to cheer me, but merely say that my grief at his loss was so overwhelming that it was long
before my former mode of living could be resumed. John Claxton was almost as deeply affected as myself, for poor
Mark was a most affectionate lad, and had greatly endeared himself to both of us. John also had his own troubles,
having lost his father during the previous year, and was then living with an aunt and two cousins, but had never been
comfortable with them, as both the boys were rather wild, and of anything but good dispositions. He had inherited a
substantial income from his father, but this piece of good fortune only aroused the jealousy and envy of his cousins,
who only seemed to tolerate his presence in their home because of what they could obtain from him by their
sponging propensities.

Although I was not rich, my income was amply sufficient to render me quite independent of work, and as I felt
most lonely and desolate since Mark's death, I at length begged John to come and live with me. He joyfully agreed,
and from that time our relations have practically been those of father and son. As our dispositions and likings are
very similar, we are as happy together as past sorrows will permit.

John always had a great fancy for engineering and electrical work, in which, after some years of training, he
became an expert. Being well endowed with the faculty of invention, he devised and constructed many new kinds of
electric and magnetic machines, and as my tastes also run in the direction of mechanical work, I have also done a
great deal in connection with such matters.

About six years ago, when the problem of aerial navigation began to be studied in earnest, John became greatly
interested in the matter, devoting all his time and energies to designing and constructing working models of air-
ships, aeroplanes, and other flying machines.

At that period I was very keen on Martian matters, to such an extent indeed that my mind was always occupied
with the various problems they presented. One day, in the course of conversation, I suggested that it would be a
splendid thing if we could construct a vessel which would enable us to visit Mars and see it for ourselves, and thus
settle all our doubts and speculations on the various controversial points which were so much discussed.
The idea soon had him in its grip, and he then immediately commenced a series of experiments with a view to
designing machinery capable of carrying a vessel through space. After many failures he thought out a plan for
utilising the earth's gravitation and magnetism as a means of obtaining the requisite power and storing it up for
future use. This scheme was thoroughly tested and proved to have solved the problem, for the machinery could
transform the power from either positive or negative to neutral.
The task of making the vessel and machinery was of course too great for two pairs of hands to undertake, and
we were therefore under the necessity of obtaining a third man to help us. John had known M'Allister when he was
studying electrical work, and suggested that, if available, he would be just the man to suit us. We at once
communicated with him, making a liberal offer for his assistance in our scheme, and as it was a question of dealing
with an entirely new kind of machinery it appealed to his professional pride, so, being out of an engagement, he
 gladly accepted our offer. He came over to my house and has lived with us ever since, apparently quite in his
element. M'Allister was about fifty years of age when he joined us, married, but without children. His wife's home
was at Glasgow, and owing to his so often being away at sea for long periods, she had become so accustomed to the
separation that she declined our offer to find a home for herself and her husband near us. She paid him a visit
occasionally, or he went to spend a few days with her, but as a permanent arrangement she preferred staying with
her relatives in Glasgow. It was not exactly my ideal of married life, but as the couple always seemed happy enough
when together, and the arrangement appeared to suit them both, it was not my place to make any comment.

My house on the outskirts of Norbury was well situated for securing the privacy we required in carrying on our
work and experiments, lying as it did in the valley on the westward side of a small eminence known as Pollard's Hill,
which effectually screened us from observation by the inhabitants of the houses in the London Road. Thus we
enjoyed complete seclusion, although not more than a quarter of a mile from that busy thoroughfare.

Notwithstanding that Pollard's Hill is only a small elevation, and its rise scarcely noticed when approached from the London Road, when its summit is gained one is astonished by the extensive and splendid view it commands over hills and valleys, town and country; and it breaks upon one almost as a startling surprise when its beauties are seen for the first time. It is, indeed, so very unexpected to come upon such a fine and far-spreading view so suddenly and so close to bricks and mortar. Alas! the latter are fast encroaching upon this delightful but somewhat neglected spot, and unless the Croydonians are wise enough to secure the acquirement of the summit of the hill as a public open space, this splendid view will be entirely lost to future generations.

A further advantage of our situation was its nearness to Croydon and Wallington, where there were engineering and electrical machinery works; besides which we also had convenient and easy means of reaching the metropolis, from whence we could travel to any other town to purchase or order anything we might require.

Once we had fairly set to work our progress was rapid and our vessel had practically been complete nearly a year, since when we have undertaken many voyages at night in order to test its powers and to ascertain where improvements were needed.

We were much amused to find in the newspapers of this period, especially in the London Press, numerous letters from various parts of England describing the appearance of a strange and very brilliant star in the sky, either at night or in the morning hours before sunrise. Some described the star as moving in one direction, others stated that it passed in quite another direction; though it does not appear to have occurred to any one that stars do not move in this eccentric fashion, nor at the rapid rate at which this peculiar star was stated to travel. No one guessed that it was the light of our air-ship which they saw as we flitted about the country in the dark hours, and often at extremely high altitudes.

Three extensive fields were occupied by me in connection with my residence, and these afforded plenty of room for our large shed and workshops; whilst as north, south, and west of us there was a large stretch of open country, extending in some directions for miles, there was little risk of our operations attracting attention. Moreover, we were always careful not to prepare for any ascent until it was fairly dark.

Our establishment was a small one, Mrs. Challen being our only indoor servant. She came to me as a young widow after my wife's death, and has proved an excellent manager and a most trustworthy servant. I have therefore left my house in her charge with a feeling of entire certainty that it will be well looked after in my absence. My solicitors have a sealed packet containing full instructions as to what is to be done in the event of my not returning home or communicating with them within fifteen months from the date of our departure.

Altogether, our little party of three has been a very agreeable one up to the present. John Claxton is a splendid fellow—a good talker when in the humour, and an excellent listener when either myself or M'Allister are in the vein for airing our own particular views. He is rather fond of chaffing M'Allister, who has a quiet humour of his own, and takes it all in good part. John has only one weakness—he has become a most inveterate smoker, and we have learned by experience that in this matter his wishes must never be opposed. Both M'Allister and myself are also smokers, though to a much less extent; the former, indeed, more often prefers to chew navy plug-tobacco—a habit which I am glad to say I never acquired, but it is a pretty general one amongst those who have been employed on sea-going vessels. In these matters it is an understood thing that each is to do as he pleases, without let or hindrance.

One more point and then I will finish this rather long but very necessary digression. In conversation I am generally addressed by my colleagues as "Professor." Not that I ever occupied a Professorial Chair at a university or elsewhere, but it arose in this way: When John first came to live with me he felt a diffidence, owing to the disparity between our ages, in addressing me by my Christian name; on the other hand, to call me by my surname seemed to him far too cold and formal. So on one occasion, when I had been holding forth on my favourite science, he remarked, "I think, sir, if you will allow me, I shall call you 'Professor' in future; the title seems most appropriate for one who has the power of conveying information on scientific subjects in so clear and interesting a manner."

I was much amused at this proposal, but fully appreciating the difficulty he felt in the matter, replied, "John, you really flatter me too much; but as you seem to think the title fits, you may call me by it if you like." So from that time forth John always addressed me as "Professor," and from hearing him constantly using the term, M'Allister soon acquired the same habit. I am afraid they both credited me with rather more erudition than I really possessed; but although I should never attempt to talk at large on matters with which I was not fully acquainted, I have lived long enough to know that it is not always wise to go very far in disillusioning others of the favourable opinions they may have formed respecting one's own abilities. It is, perhaps, one of those matters in which "a still tongue makes a wise head"; and, if dealt with in a tactful way, may be of real advantage to both persons. The one will continue to be receptive of the ideas of the person whom he esteems as well qualified to impart sound and reliable information, whilst the other will honestly endeavour to live up to his reputation, and be most scrupulously careful to make sure of the accuracy of the information which he desires to impart.
CHAPTER III
WE APPROACH THE MOON--A MAGNIFICENT SPECTACLE

When we had finished our supper John remarked, "Professor, I am a little mystified in regard to our present position. We have started on a voyage to Mars, but up to the present I have not seen even a glimpse of the planet tonight. How is that?"

"Hear, hear," chimed in M'Allister. "Mon, I've been bothering over the very same thing ever since we started, and wondering where yon little red star has gone to!"

"The question is very soon answered," I replied: "it is a case of 'the Spanish fleet you cannot see because it's not in sight.' Mars does not rise above our late horizon until about a quarter-past ten, and was therefore hidden by the earth whilst we were out on the platform; so we could not expect to see it then, but if we look out now no doubt we shall see it."

We went over to a window, and I pointed out the planet, remarking, "There it is; that little red star is the world which we hope to land upon in a few weeks' time. You will notice that it does not lie quite in the direction in which we are moving, for I must tell you that we are not on our course to Mars at present. I thought we should all be glad to have a look at the moon from a close point of view now we have the chance, and M'Allister will remember that I gave him instructions just before supper to direct our course so as to head off the moon in its journey."

"Quite right, Professor, so you did," said M'Allister; "but I did not fully understand the reason of your instructions."

"But," interrupted John, "are we not going rather out of our way?"

"Yes, that is so, John," I replied, "but a few thousand miles more or less will make very little difference to us at the rate we shall travel, especially if you allow for the fact that the earth and moon are both moving nearly in the direction we wish to go. Besides, I hope to approach sufficiently near the moon to enable us to add a little more power to our store, so it will not all be lost time; and we can also use the moon to give us a fresh start. But for the fact that it would be best for us to reach the moon before it has waned to any large extent we might have delayed our start for many days, and, whilst considerably shortening our journey, still arrived at Mars on the date we have fixed."

Our chronometer was housed in a substantial non-magnetic cubicle, with a very thick glass window, in order to protect it from the magnetism and electricity which pervaded our vessel. On looking at the chronometer I found the time was nearly eleven o'clock. We had, therefore, been nearly two hours on our journey and had travelled some three hundred miles, mostly in an upward direction from the earth; so if there were any of the earth's atmosphere around our vessel it must be of the most extreme tenuity, and we might safely increase our speed.

I accordingly gave M'Allister the order to switch on the power gradually, up to our full speed, and it was not long before we were rushing through space at the rate of over eighty-three thousand miles an hour. At this rate, as I told them, we might expect to reach the moon in a little over sixteen hours, allowing for loss in slackening down at the latter part of the journey.

"It so happens," I said, "that the moon's present distance from the earth is rather less than 226,000 miles, being its nearest approach to the earth during this month."

John at once asked, "How it happened that, if the moon were only this comparatively short distance away from us, I reckoned it would require over sixteen hours to reach it at the tremendous speed we were now moving;" and added, "I thought we should be there in about three hours."

"Ah, John," I replied, "you have forgotten that the earth is rushing along and carrying the moon with it nearly as fast as we are travelling, and you are reckoning as though they were standing still all the time. As a matter of fact we are only gaining on the moon by a little over fifteen thousand miles an hour, and we must allow for slackening speed long before we reach the moon, so we cannot expect to cover the distance in less than sixteen hours. You will see that if we did not travel faster than the moon is moving away from us we should never catch it up at all!"

"That explains it all, Professor," said John, "and I must confess I felt rather puzzled at the length of time required to reach the moon, so was altogether out in my calculations."

After we had been proceeding at this rate for nearly two hours, M'Allister came hurrying into our compartment in a state of great excitement.

"Professor," he exclaimed with a gasp, "something's gone wrong altogether, and I don't know what to do!"

"Gone wrong!" I repeated. "Why, what is the matter?"

"Mon," he answered, "everything is the matter! A while back we were rushing towards the moon, but just now when I looked ahead there wasn't any moon to be seen. I happened to go round to the other window and look back and, my word! if there wasn't the moon right behind us! We have been travelling so very fast that we must have run past it without knowing we had done so."

"Oh, we could not possibly have done that!" I exclaimed.

"But there's more to come, Professor," continued M'Allister. "When I last saw the moon it was nearly full and
not so very much bigger than when we saw it at starting, but now this moon behind us is an enormous thing; yet it is only a new moon, or rather what folks call a new moon with the old moon in its arms!"

"Oh, now I understand," I replied. "It's all right, M'Allister, and you can make your mind quite easy. You were not able to see the moon when you first looked through the window because it was nearly in a direct line with your course, and therefore just hidden by the prow of the vessel. It's still ahead of us and still nearly full: if you had looked out of the conning tower or used the periscope you would have seen it."

"Heh, Professor," he interjected, "I know I couldn't see the moon if it was straight ahead of our course, but then what about that enormous new moon that's behind us? I saw that right enough."

"That enormous new moon, M'Allister, is only our own little world which we left a few hours ago," I replied.

He stared at me as though bewildered, and after pondering a while, exclaimed, "Losh, mon, you surely don't mean to say that our own little world changes about in the same way as the moon does--sometimes new and sometimes full?"

Here John interposed. "Yes, M'Allister, you can take it from me that it is just what our world does do. I think you are aware that, like the moon, our world simply reflects the light it receives from the sun, and does not shine by its own light. So one side is light and the other side is dark, according to its position in regard to the sun. From our present position we are only able to see a small portion of the lighted side, the remainder being dark except for the moonlight shining upon it, so it looks just like a large new moon. It really serves as a moon to our moon, but its phases follow each other in reverse order. Thus, when the moon is full, the earth's disc is all dark, and when the moon is in its first quarter the earth, as seen from there, would be in its third quarter, and so on through all its phases. Do you follow all that, M'Allister?"

"Well, mon," replied M'Allister, with a sly grin, "I've just heard you say it; but"--and here he turned to me--"is it all correct, Professor?"

"Yes, quite correct," I answered, greatly amused at his distrust of John's statements.

"M'Allister, you're like the Apostle Thomas," commented John, evidently a little nettled; "so you really doubted my word after all!"

"Heh, mon," he answered, "you're not the Professor, you know; and I thought maybe you were pulling my leg!"

"Well," laughed John, "perhaps you will get your leg pulled the next time I condescend to give you a lesson in astronomy!"

After this little spar between my two colleagues we proceeded to the machine-room, which John and I carefully inspected, to make sure that all was working properly; and having satisfied ourselves on this point, we gave M'Allister his instructions for the 'night'; though of course there was no night now.

Mounting the steps of the conning turret, we then had a look at the earth, from which we were so rapidly moving away. It appeared about fifteen degrees in angular diameter, showing that we had travelled some thirty thousand miles from it.

The full moon, as seen from the earth, appears just about half a degree in diameter--sometimes a little more, sometimes rather less; so the earth was apparently about thirty times the diameter the moon usually appears to us. It was only a thin crescent where lighted by the sun, but well might M'Allister describe it as "enormous," for it appeared still larger to him when he saw it some thirty minutes earlier and mistook it for the new moon.

When we came down again John, very thoughtfully, said to me, "Professor, you have had a very long, tiring day; and when we reach the moon, we shall probably stay up several hours to look at it, so you had better take as long a sleep as possible. There will be no need to break your rest, for I'm the younger, and will get about by six o'clock, and relieve M'Allister, who can go on all right up to then, as he has three hours less work to his credit than we have to-day. If your advice is needed, I will call you at once; but, no doubt, we shall do very well till we arrive within a few thousand miles of the moon. We will slacken speed very gradually from about two o'clock in the afternoon, so as not to approach the orb too rapidly."

I had, indeed, as he said, had a long, tiring day, having risen soon after four o'clock yesterday morning, and it was now nearly 2 "A.M." by terrestrial time; so, thanking him for his kind consideration, I bade them both "good night," and gladly proceeded to bed, John following soon after.

He was as good as his word, and actually allowed me to sleep on until nearly half-past three in the "afternoon," when he roused me, and, having dressed, I snatched a hasty meal and then at once proceeded to the machine-room, where my first act was to look at the moon. There it was below us, but still slightly ahead of the Areonal; and its magnificence was so overpowering, that it almost seemed to take my breath away, although I was fairly well prepared for the sight. Many times when viewing it through the telescope I have almost lost myself in admiration of the sublime spectacle it presents; but what I had seen on those occasions could not be compared with the splendour of the view now before us.

Here, without any atmosphere to dim or otherwise mar the view, the brilliancy of the lighted portion of the disc
was absolutely dazzling, whilst the extreme delicacy of its varied tints and the subtle nuances of colour, which we now saw to perfection, were most charming and delightful to any one endowed with artistic perceptions. We were only about four thousand miles from this beautiful orb, its angular diameter measuring about thirty degrees, or nearly sixty times its apparent diameter, as seen from the earth; thus it appeared to cover a very large circle on the sky.

John and M’Allister told me they had both been gazing upon the splendid scene for a very long time with astonishment and delight equal to my own; and the latter went on to say, "Professor, did you ever see such a sight in your life? I never did, and could never have imagined that anything could be so beautiful! Mon, it's worth many a journey like this to see such a bonnie thing!"

"You are quite right in saying that, M’Allister," I answered; "it is, indeed, a grand and marvellous sight! I can assure you that when I have been observing the moon in its full and glowing splendour, it has often seemed to me the most exquisitely beautiful object I have ever looked upon; yet now it appears far more beautiful than when seen through the telescope!"

CHAPTER IV
CLOSE TO THE MOON--I GIVE SOME INFORMATION ABOUT IT

We were now moving at a comparatively slow speed, yet the size of the moon's disc was very rapidly expanding as we approached nearer and nearer to it. In the course of a little over half-an-hour we were within ten miles of its surface, which now seemed to fill the whole space below us; and its rotundity was most impressive. The shadows of the mountains and other elevated portions near the terminator[4] were jet black, owing to the absence of an atmosphere; and, seen contrasted with the brilliant lighting of the parts exposed to the full glare of the sun, appeared almost like deep holes in the lunar surface.

John now remarked, "Professor, you are aware that I have only a rather vague general knowledge of astronomy, although I take an interest in the subject, and that I know still less about the dimensions and physical character of the moon and planets; so perhaps you will be good enough to give us a little detailed information respecting this beautiful orb. Most of it will be news to me, and probably it will all be fresh to M’Allister."

"Heh mon," the latter replied, "just put me among machinery and I’ll tell you what’s what, but I never learned anything about astronomy, so will not pretend to any knowledge of it, but now I should be very glad to hear what the Professor has to say about it."

"Well, friends," I replied, "it is not my wish to lecture you upon the subject, so I will merely just run over a few of the bare facts.

"To begin with--the moon is very much smaller than the earth, its diameter being only 2160 miles, while the earth's diameter is 7918 miles. Being a smaller globe its mass is much more loosely compacted than that of the earth, so, although it would take nearly fifty globes the same as the moon to make one globe as large as the earth, it would require nearly eighty such globes to make one as heavy as the earth.

"The moon's distance from the earth is generally given as being about 238,000 miles, but this is its mean distance. When farthest away from our world its distance is about 260,000 miles, but at its nearest it is less than 220,000 miles distant. This difference of course arises from the eccentricity of the moon's orbit, and it explains why we sometimes see the moon a trifle larger than it appears at other times. By this I mean that it really is seen larger, because it is closer to us. But you have no doubt often noticed that when the moon is near the horizon it seems to be very large indeed. This apparent increase of size is, however, an illusion, owing to our unconsciously comparing it with the apparent size of terrestrial objects.

"The surface of the moon shows evidence of very violent volcanic action having occurred in every part of it, and astronomers in the past were much puzzled to account for the excessive volcanic energy which was indicated by what they saw, as such a small globe as the moon would not, in the ordinary course of events, have ever possessed sufficient heat to have developed such violent action. A theory of later years has, however, provided a reasonable explanation. It is that the moon was at one time a part of the same mass as the earth, which became separated from it before the earth had quite cooled down and solidified into its present form, and was then gradually driven farther and farther away from the earth by natural forces. It was therefore originally as hot as the rest of the mass which formed the earth, but being formed into a smaller globe of much less gravity--only one-sixth of that of the earth--volcanic action of the same intensity as that on the earth would have a much more far-reaching effect. A force which on the earth would project volcanic lava and scoriæ a distance of three miles would, on the moon, project it a distance of eighteen miles. This accounts for the very high mountains we see on the moon, some of which are comparatively, for the size of the globe, much higher than those on the earth. It also accounts for the vast size of the lunar craters, ring-plains, and ring-mountains.

"These latter are formations quite unknown upon our earth, but on the moon they are numbered by hundreds of all sizes, from a few miles up to one hundred and fifty miles in diameter. They are large plains, roughly circular in
shape, and surrounded by mountains; in a few cases the ring is in some parts a double range of mountains. Sometimes the plain (or 'floor,' as it is termed) is many thousands of feet below the general level of the lunar surface; in a few cases it is raised considerably above it, and in one or two instances, instead of being flat, the floor is convex. Some of the mountain rings are comparatively low, but in other cases the mountains are fifteen to twenty thousand feet in height, or even higher. Frequently a mountain rises near the centre of the floor, some rings containing more than one such mountain, whilst others have none at all.

[Illustration: Drawn by M. Wicks Plate II]

**IDEAL VIEW OF LUNAR SCENERY**

As there is no atmosphere on the moon, the sky is a dense black, and the stars shine brilliantly in the daytime. The view is a typical one, showing numerous craters and cracks, and a small ring-mountain with terracing. Ring-mountains and plains vary from a few miles to 150 miles diameter, some mountains being nearly 20,000 feet in height.

"There are numerous instances where one mountain ring has overlapped or cut into another, thus indicating that it was a later formation; and in many cases the mountains are 'terraced,'[5] as it is termed, either owing to a series of landslips or to the rise and fall of a sea of lava, which cooled as it sank down, thus forming terraces. Small craters abound all over the surface of the moon and on the floors of the rings; cracks in the lunar surface are also numerous.

"As regards the lunar mountains, it may truly be said that we have a fairly accurate knowledge of peaks and mountains which would either be too precipitous to be climbed, or quite inaccessible to us, if we could actually land upon the moon; and the whole visible surface has been more carefully and thoroughly mapped out and studied than is the case with many parts of our own earth.

"If the moon has any atmosphere it must be so very attenuated indeed that human beings could not possibly live in it at all; but nothing has yet been detected which would enable us to say positively that any atmosphere does exist there, although there have been some indications observed which support the supposition that there may be an extremely thin air.

"Nor does it appear possible that there is any water upon its surface at the present; in fact, many astronomers are of opinion that the moon never did have any water upon it. Personally, from a study of many of the formations as seen through the telescope, it seems to me quite impossible that they could owe their existence in their present state to anything but the action of water. They present much the same appearance as formations on our own earth which we know have been fashioned by that means. There is no water upon the moon now, I think, though several large depressions are still called oceans, seas, lakes, or marshes, because at one time they were believed to be such. Probably in some of those places, if not in all, water existed millions of years ago; but ages since they must have lost it either by evaporation or by absorption into the soil.

"I will not say any more just now, but as we pass above the lunar surface I will point out a few of the natural features that may be of interest to you."

M'Allister here paid me the compliment of saying, "Well, Professor, I always thought astronomy was a very dry and difficult subject; but your remarks were really very interesting, and quite easy to understand. There is only one thing that seemed to me rather strange as coming from a scientific man, and I would like you to explain that."

"Certainly; if there is anything you do not quite understand, you have only to ask and I will try to clear the matter up," I answered. "What is it you wish to know?"

"Well," he answered, "I noticed that when you were speaking about the distance of the moon you always said it was about so far away. Why didn't you tell us the exact distance? I'm not a scientific man by any means, but if any one were to ask me the length of a connecting rod on one of my machines I should say '25 inches,' not 'about 25 inches,' for that would not do for a practical man!"

"It's like this, M'Allister," I said. "You measure things with a two-foot rule, which is something you can actually handle, and you know it is made according to a standard measure and must contain exactly 24 inches. If, however, your rule was 24-1/4 inches long, yet still divided into twenty-four equal parts, you could measure work with it just the same, but would know that every measurement was just a little bit out. If you had no possible means of obtaining another rule, you would have to put up with a little inexactitude.

"That is just the position in which astronomers are placed; they have to put up with a measure which they know is not perfectly accurate, yet it is the best which can be secured.

"Their two-foot rule, so to speak, may be the distance from the earth to the sun, or the length of the whole diameter of the earth's orbit, and these cannot be handled like your rule; and although we know the measurements of these are nearly correct, they are not quite so. Yet the distances of the moon, planets, stars, &c., have to be measured by these rules, so it is clear we can only know those distances with a near approximation to accuracy.

"For this reason astronomers are always trying different means of ascertaining the sun's exact distance from the earth in order to obtain a perfectly correct measure; but there are so many difficulties and complications which affect
the result, that it will be a long time yet before they succeed in their work.

"You will therefore understand that all these figures as to distances and dimensions of planets and stars are only as near approaches to correctness as is possible to attain in our present circumstances. They must not be regarded as literally exact, although they are usually sufficiently accurate for all general purposes. Astronomers know this and allow for it; but general readers of books, when they find figures which do not agree with others they have seen, are apt to regard them as all being mere guesses, and in this they are doing an injustice to the painstaking labours of generations of astronomers and mathematicians.

"I shall presently be mentioning the heights of mountains, the size of ring-plains, craters, &c., but the same reasoning applies to them; the dimensions given are averages of measurements made by different observers, and, though not quite accurate, are as near the truth as the difficult conditions under which they have to be measured will allow."

"Thank you, Professor," said M'Allister as I concluded. "I'm glad I don't have to work with such rules as those you mention, for measurements a little bit out of correctness would ruin any machine in the world."

"Still, M'Allister," I said, "you would have the advantage over astronomers with your two-foot rule, because you would know that it was a quarter of an inch too long. Their difficulty is that they do not know exactly how much their rule is out of correctness, so cannot obtain absolute accuracy however they may try."

We now set the machines going very slowly and moved toward the northern part of the moon, where I pointed out the position of the lunar north pole, and explained that, owing to the very slight inclination of the lunar axis, there can be but very little variation of seasons in any one particular part of the moon. Thus, if at one place it were spring, it would practically always be spring there, but with very cold nights all through the lunar year. Where it was summer it would practically always be summer, also with very cold nights, and so on.

I further explained that, as the moon revolves on its axis in the same time that it takes to make one revolution round the earth, those on the earth always see the same side of the moon, except when occasionally, owing to inequalities in the lunar motions, they are afforded a peep just round portions of the edges at different periods. The remainder of the other side of the moon has never yet been seen from the earth by human eyes, and in all probability never will be seen for millions of years to come.

John, who as usual was smoking like a factory chimney, here removed his pipe from his mouth and said, "Professor, you stated just now that the nights on the moon would always be intensely cold, and I should like to know whether there is any really reliable information respecting the temperature of the lunar days and nights. I have seen so many contradictory theories on the subject that I scarcely know what to believe."

"In that respect," I answered, "I fear that my position is much the same as yours, for I have absolutely no certain knowledge on the point, but will just state shortly how the matter stands at present.

"During the past century many investigations have been made by scientific men respecting the temperatures on the moon, and their results have differed to an amazing extent. It would take too long, and be too wearisome, to quote all the authorities, so a few must suffice. Lord Rosse, who used a thermopile in his experiments, found that in order to produce the results he obtained, the sunlit surface of the moon must be heated to a temperature of 500 degrees on Fahrenheit's scale. Sir John Herschel had previously concluded that the temperature must be much greater than that of boiling water. On the other hand Ericsson and, more recently, Professor Langley—who used a bolometer of his own invention for measuring the heat of the sun's invisible rays—came to the conclusion that even under continued sunshine the temperature would rarely, if ever, rise above the freezing point of water.

"Professor Very, however, who has continued the delicate experiments with the bolometer, and also made other experiments and calculations of quite recent date, has obtained results more nearly in accordance with those first quoted, for he found that near the end of the second week's sunshine on the moon the temperature of the rocks, soil, &c., must rise to at least 80 degrees Centigrade above the heat of boiling water."

"My word!" said M'Allister, "that's hotter than a ship's engine-room, and I shouldn't care for such a very high temperature."

"As this is so recent," I proceeded, "and the work of one of our highest authorities, I think we must accept it as being more correct, especially as Professor Very has taken into consideration some factors which had not previously been allowed due weight.

"In connection with this matter of temperature it is necessary to remember that the days and nights upon the moon are both very long, for the full lunar 'day' is equal to a month, so the actual lunar day is equal to fourteen of our days, and the lunar night is of the same duration. Our 'day' of twenty-four hours is divided into day and night in unequal proportions, according to the changes in the seasons; but, as I before remarked, the seasonal changes on the moon are very slight, so the variations in the lengths of the days and nights are very small.

"But, whatever may be the difference of opinion as to the heat of the lunar day, there seems to be a pretty general agreement that, owing to the absence of an atmosphere, the nights must be so intensely cold as to be almost
beyond our conception—probably approaching nearly to the absolute zero of outer space. Even with an atmosphere
the long nights in our polar regions are so cold that only very strong people can endure them, notwithstanding every
device for obtaining warmth.

"You will gather from this that although the moon appears so beautiful from a distance, it must be anything but
a desirable place of residence even from a climatic point of view, for we should practically be fried at midday, while
at midnight—or even in the daytime when out of the direct rays of the sun—we should soon be frozen stiff."

As I said this John chimed in with: "Professor, all things considered, I think I could smoke my pipe more
comfortably upon the earth than upon the moon. I really don't like such extremes of temperature."

"I am of the same mind," I replied, "and it is because I prefer a more equable temperature that I have carefully
kept our martalium blinds drawn over those windows of our vessel upon which the sun is shining."

CHAPTER V
WE VIEW THE LUNAR SCENERY IN THE NORTHERN HEMISPHERE

"Now, Professor," exclaimed M'Allister, jumping up with a shrug of the shoulders, "you've given our friend
John a considerable amount of information on a wee bit dry subject, so, mayhap, you will now give us something
more interesting, and go on with the description of the natural features of the moon down yonder."

"Yes do, please, Professor," said John; "M'Allister's own temperature is evidently rising rapidly. Strange, isn't
it, that a douche of cold facts should make our friend so warm!"

"Well, not altogether," I replied laughingly; "there should always be a healthy reaction after a cold douche.
Much depends on the intensity of the cold applied, and you know that if you touch extremely cold metal it burns you
like hot iron!"

"Professor," chimed in M'Allister, "maybe I was a bit warm, but really your facts were not so cold as to make
me hot."

"I'm glad to hear you say so," I answered.

"At all events, Professor," continued John, "whatever may be M'Allister's actual temperature, I'm simply
burning to know something about that very striking formation with the steel-grey coloured flooring which is situated
not very far down from the North Pole, and a little to the east of the central meridian."

"That," I said, "is a large walled plain called Plato, and, being on a receding curve of the moon, it is seen from
the earth foreshortened, so that it appears to be elliptical in shape. It is about sixty miles in diameter, and encloses an
area of 2700 square miles, which is just about the area of Lincolnshire. The general height of the mountain walls is
over 3600 feet; one mountain on the east is nearly 7500 feet high, and others on the north and west are but little
lower.

"You will notice that there are several breaks in the walls, and a large one on the south-west; whilst on the inner
slope of the mountains you can see where a great landslide has occurred.

"It is rather singular, John, that in your first selection you have chosen a formation which is one of the lunar
mysteries!"

"Ah! Professor," said John, smiling, "I always was lucky! What is this dreadful mystery?" he asked, with an
assumed expression of awe.

"Oh, it's not a ghost story, John, nor anything to make your flesh creep," I said rather grimly. "Usually the floor
of a walled plain becomes brighter as the sun rises higher and higher in the sky, but Plato actually becomes darker
under a high sun. By some it has been thought that this is merely the effect of contrast with the very bright
surroundings of this formation, and that there is no actual darkening of the tint. This is certainly not the case, for I
have examined it carefully myself with the telescope—shutting out all the bright surroundings from the field of view,
but the floor still appeared equally dark.

"Others have suggested that the hot sun causes the growth of some kind of vegetation all over the plain, the
ripening of which makes the floor darker in tint. As regards this suggestion, it is the fact that upon Mars the old sea-
beds are the places where vegetation is most luxuriant at the present time; so, if Plato were at one time an enclosed
sea, it might not be impossible that vegetation in some low form might grow and be nourished by the crude gaseous
remains of a former atmosphere. A greenish tint has occasionally been noticed by some observers, also several light
streaks across the floor, as well as several small craterlets, which have been duly noted on the maps.

"But before we go any further we will have a better means of seeing, for it is rather uncomfortable looking
directly down upon the moon. So, John, just lend a hand and we'll fetch one of those large mirrors."

This was done, and the mirror suspended with the upper part projecting forward, so that when adjusted at the
proper angle we could sit and look straight into the mirror before us and see the reflection of all that was below. We
could still look down at the objects, if we wished to do so, without shifting our position.

"There, John," I remarked, as we completed this arrangement, "I have already arranged mirrors in the proper
positions at the windows in the forepart of the vessel, so that in future M'Allister will be able to see what is nearly
straight ahead of him. Now you will understand that I had a scientific use for the mirrors I provided, and did not require them merely to admire my beautiful face in as you suggested."

John laughed as I recalled his suggestion, saying, "All right, Professor, I know you generally have a good reason for what you do."

Now, being more comfortably seated, I drew their attention to some small isolated mountains on the area to the south of Plato, pointing out Pico, an isolated mountain over 8000 feet in height, and another with three peaks not very far from it. To the north-east of these, some distance away, are the Teneriffe and Straight Ranges; also isolated groups.

"You will remember," I remarked, "that I said there were several formations which seemed to me to owe their present appearance to the action of water. Now look well at all this district before us--does it not seem to bear out my contention? Those numerous small mountains and isolated groups were not, I think, originally isolated, but connected with the adjoining ranges. If we assume that Plato was once an enclosed sea, or lake, which burst through the mountain walls--possibly owing to their being weakened or broken by volcanic action--there would have been a tremendous outrush of water, which must have carried away a good deal of the softer material of these hills and mountains; whilst, in after years, the continual wash of the waters, combined with aerial denudation, would gradually have worn away all but the hardest parts of these formations.

"Most probably the whole of the surrounding area was also at some time a sea, though volcanic action has since altered its surface conformation, and in places it bears evidence of having been covered with lava. It is not unusual on our world for volcanoes to burst up from under the sea, so even the evidence of volcanic action does not, as some seem to think, negative the possibility of water ever existing here; and it may not be inappropriate to point out that our hydrographers have proved that our ocean-beds are not always smooth, but are often diversified by high hills and deep valleys."

M'Allister here interjected: "Professor, would you kindly tell us something about that fine range of mountains over yonder, just to the right hand?"

"Oh yes," I replied; "I was just about to mention that mountain range, which is called the Alps after those in Switzerland; and that peak on the front portion, just south of the great valley you see, is named Mont Blanc, and is about 12,000 feet in height.

"You will notice a very large number of peaks in this and the other neighbouring ranges--in fact, several thousands have been marked on our large maps.

"Cutting diagonally in a north-westerly direction, completely through the Alps, you will notice a long and deep valley. This is known as the 'Great Alpine Valley,' and is over eighty miles long, and varies from about three miles to six and a half miles in width. At the eastern end it is some 11,000 feet deep, debouching on to the plain in several comparatively narrow passes, whilst at its north-western extremity it is very shallow, and emerges on to what is known as the Sea of Cold, which covers an area of about 100,000 square miles. This valley seems to afford another example of formation by the action of water.

"Amongst the three thousand peaks comprised in the Apennine range just below the Alps, are several mountains of considerable altitude," I remarked, pointing out Mount Huygens, nearly 20,000 feet high, Mount Hadley, 15,000 feet, and Mount Woolf, 12,000 feet in height. "This range curves round towards the east, and finishes with a fine ring-plain called Eratosthenes--some thirty-seven miles in diameter, with a floor depressed 8000 feet below the lunar surface. It encloses a central mountain, and on the east wall there is one peak which rises 16,000 feet above the floor.

"The ranges in this part of the moon are, perhaps, more like those on our earth than others to be found on its surface, but much more wild and rugged.

"Eastward and northward of these ranges is the Sea of Showers, on which there are several fine ring-mountains and walled plains--notably Autolychus and Aristillus, two very perfect ring-mountains some 9000 feet high.

"One of the most striking, on account of its size and situation, is that large one which is called Archimedes, and is about fifty miles in diameter; and you will notice that a rugged mass of mountains and high hills extends from it to a distance of over a hundred miles on the south. The floor of this walled plain is only about 600 feet below the general level, and the mountain walls average about 4000 feet in height; but there is at least one peak some 7000 feet high.

"You will see a little below and westward of Archimedes the commencement of a system of large cracks or crevasses in the lunar surface which are known as 'rills.' Many such systems are found in various parts of the moon; some of the cracks are comparatively shallow, but, according to Professor Langley, others are known to be at least eight miles deep, and may be infinitely deeper, though I cannot say I understand how these great depths have been arrived at. The length of the cracks varies from a few miles to over three hundred miles, and from a few hundred yards to some miles in width. They are attributed partly to volcanic action, but mainly to the contraction of the crust
of the lunar globe as it became cold. Being so much smaller, the moon would cool much more rapidly than the earth, and the disruptive effects would necessarily be greater."

John here touched my arm, and pointing to some mountains on the borders of a large elongated oval area, close to the north-western terminator where the sun was setting, asked me what they were. I explained that the dark area was known as the Mare Crisium, or Sea of Conflicts, and is possibly the deepest of the large lunar depressions.

"It is about 280 miles long from north to south, and 355 miles wide from east to west, but, owing to its position, the width is seen from the earth very much foreshortened, so that it really looks nearly twice as long as it is wide. It contains an area of about 75,000 square miles, thus being as large as the combined area of Scotland and Ireland, and the five largest northern counties of England. It is surrounded by mountains, some being over 11,000 feet high, reckoning from the dark floor."

I drew their attention to Proclus--a ring-mountain on the eastern side of this sea--which is about eighteen miles in diameter, and the second brightest of the lunar formations. "From its neighbourhood several bright streaks diverge in different directions, two extending a long way across the dark area, and there is a longer one striking towards the north and another towards the south at an angle of about 120 degrees with each other.

"Seen through the telescope, these ray-streaks often appear very brilliant under a high sun, looking in fact very like electric search-lights; though I notice that the Rev. T.W. Webb has rather curiously remarked that these particular streaks are not very easily seen. Similar ray-streaks, many enormously longer than these, are found in various parts of the lunar surface, but their exact nature and origin has never yet been definitely settled. They only come into view when the sun is beginning to be high up in the lunar sky, and the higher the sun, the brighter the rays appear. Some of the shorter ones are ridges, but this is evidently not the case with the others, for they cast no shadows, as ridges would when the sun is low. Very many radiate from a large ring-mountain called Tycho, in the southern hemisphere; and one of them extends, with some breaks, nearly three thousand miles, passing northward over the Sea of Serenity and finally disappearing on the moon's north-western edge, or 'limb,' as it is termed.

"Professor Pickering assumes that these rays were caused by volcanic dust or other light reflecting material emitted from a series of small craters, and states that they are really made up of a series of short rays placed or joined end to end. What I have observed myself seems to bear out this latter statement; but the opinion I have formed as to their origin differs from the theory of Professor Pickering. It seems to me more probable that the volcanic dust was carried by a strong wind, split up into two or more separate currents by a succession of peaks. The wind currents swept clean the area over which they actually passed, but dust fell or drifted in the lines between the currents. Exactly the same thing may be observed in connection with snow-storms on our earth when accompanied by a high wind. One part of the earth's surface will be swept clean by the wind current, whilst a long line of the adjoining surface is covered with a thick deposit of snow. I have also noticed that where the ray-streaks impinge upon a mountain, or ring, there is an appearance of spreading out and heaping up of the bright material very much as snow would be spread out or drifted up in similar situations on the earth."

M'Allister here interrupted with the remark that, when we were approaching the moon, he had particularly noticed that all appearance of the face of the "man in the moon" had vanished. He said he had expected to see that more distinctly as we got nearer.

"That would not be the case, M'Allister," I answered. "The resemblance to a human face which we see from the earth is caused by the combined effect of the bright and dusky areas on the lunar surface as seen from a distance. The depressed dark areas, which we call seas, form the eyes, nose, and mouth of the face, but when we had approached nearer to the moon the details of the surface configuration stood out so much more distinctly that they entirely obliterated the general effect of the markings as seen from a distance."

"Professor," exclaimed John, "I have read that before telescopes were invented it was thought by many that the markings seen on the moon were really the features of our own earth reflected by the moon as in a mirror. Is that correct?"

"Oh yes, John," I said. "It seems to have been a fairly general belief in many parts of the world, and travellers tell us that, even within very recent times, they have found in some of the more out-of-the-way parts of the world that the same idea is still held by uneducated people!"

Objects of interest being so numerous on the lunar surface we could only give a comprehensive glance at many of them, and as we had so many places to inspect, I now gave M'Allister the order to steer eastward.

He accordingly moved his switches and the Areonal quickly passed over the Sea of Tranquillity, which has an area of 140,000 square miles; then over the Sea of Vapours, a smaller area, parts of which have a dusky green tint, from whence to the northward we had a view over the Sea of Serenity, another deep depression nearly as large as the Sea of Tranquillity, and much of which is a light green colour.

Then we came again to the Sea of Showers, a large "sea" having an area of 340,000 square miles; and, still moving eastward, the great lunar "Ocean of Storms" soon came into view. This covers a very large portion of the
eastern and north-eastern part of the moon's surface, and, with all its bays and indentations, is estimated to be two million square miles in extent.

I, however, again reminded them that, although these areas are termed seas and oceans, no water exists there now, whatever may have been the case in the long distant past. They are now only large depressions, and not often level but intersected by hills, ridges, and even mountains.

As we passed along I called their particular attention to the magnificent "Bay of Rainbows" on the north-eastern coast of the Sea of Showers. "From Cape Laplace (9000 feet high) on the western extremity, to Cape Heraclides (4000 feet high) on the eastern extremity, this great bay is about 140 miles across, the depth of its curvature being over eighty miles. It bears a very strong resemblance to many large bays on our sea-coasts in various parts of the world, but I am not aware of any such bay which is bordered by a mass of such lofty mountains as this is.

"We are looking at it now under a high sun, but when the sun has only just risen sufficiently high to illuminate all those high mountains, whilst the lower surroundings are still in shadow, the great bay presents in the telescope the appearance of a brilliant luminous arch springing from the lighted part of the moon and extending far out over the dark part of the disc.

"Farther eastward, and lower down on the Ocean of Storms, you will observe what is admitted by all to be the very brightest large formation upon the moon, viz. Aristarchus—a ring-plain nearly thirty miles in diameter, the floor of which is 5000 feet below the surface level. It possesses a central mountain, very difficult to measure on account of the general brightness, but believed to be about 1300 feet high. Well-defined terraces are seen on the mountain walls enclosing the area, and many external ridges are connected with the walls, especially to the south. This formation is evidently covered with some substance which reflects light to a greater extent than that on similar formations; indeed it appears so bright that when the moon is new and the whole of this part of the disc is dark, Aristarchus can still be seen with a telescope, and this gave rise in the past to the idea that it was a volcano in actual eruption. The explanation is, however, more prosaic, because the mountain is really brought into view by earthshine on its bright covering. When the moon is new the earth is almost fully lighted on the side toward the moon, and sheds a faint light on the dark portion of its disc, thus producing the phenomenon known as 'the old moon in the new moon's arms.'

"Close to Aristarchus you will notice another ring-plain, which is called Herodotus, about twenty-three miles in diameter, with a floor 7000 feet depressed; but this formation is not nearly so bright as its neighbour. That high plateau between them is notable on account of the T-shaped cleft in it, which runs into that other long zig-zag cleft (in some parts two miles wide and 1600 feet in depth), whose direction changes abruptly several times in its length of over one hundred miles.

"Turning from this towards the south-west you will see the most majestic formation to be found upon the moon—the great ring-plain called 'Copernicus,' after the founder of our present system of astronomy. It is about sixty miles in diameter, only roughly circular in shape, and as it stands isolated upon the great ocean-bed it is most favourably situated for observation. A large number of very high ridges, separated by deep valleys, radiate from it in all directions to a distance of hundreds of miles, presenting the appearance of a grand system of buttresses to the mountain walls. These walls are high, and contain a very large number of peaks which, when seen through the telescope as they catch the sunlight, look like a string of bright pearls shining on the border of the ring. A peak on one side is 12,000 feet in altitude, on the other side is one only 1000 feet lower, whilst, rising from near the central part of the floor, are no less than five small mountain peaks. Owing to its size, brightness, and isolated position, this splendid ring-mountain can be seen from the earth without the aid of a glass; but even a field-glass will reveal much in this and similar formations which cannot be detected by the unaided eye.

"The Rev. T.W. Webb has termed Tycho, in the southern hemisphere, 'the Metropolitan Crater of the Moon,' but, in my opinion, Copernicus is, owing to its position and grandeur, much more worthy of that dignity. Tycho is fine in itself, but is not so favourably situated, being surrounded by other formations somewhat in the same way as St. Paul's Cathedral is surrounded and shut in, for the most part, by other and meaner buildings.

"How much more should we appreciate the splendid proportions and majesty of our Metropolitan Cathedral if we could view it as an isolated building with a fine open space all around it!"

"I quite agree with that, Professor," remarked John, "and I have always thought it a great pity that Sir Christopher Wren was not allowed to carry out his original plan in this respect."

We were looking at the Carpathian range of mountains just to the northward of Copernicus, when M'Allister touched my arm, exclaiming, "Look, Professor, at all those tiny craters near the western side of Copernicus. Why, there are so many of them that the ground for miles round looks like a honeycomb, and in some places there are straight rows of them!"

"Yes," I said, "this part of the lunar surface is simply riddled with tiny craterlets, and some of them are utilised
as tests for the definition of our telescopes. I have heard it remarked that a map of this part of the moon presents
almost the appearance of the froth on a glass of stout when it has settled down, the very numerous tiny air-bubbles
of different sizes representing the craterlets; and really it does bear such a resemblance.

"Almost due east of Copernicus is another bright and isolated ring-plain named Kepler, after the celebrated
astronomer. This is some twenty-two miles in diameter and surrounded by very bright streaks of light, extending in
some directions over seventy miles, the whole nimbus of light covering an area of nearly ten thousand square miles.
These really are streaks, not ridges, for, as you will see, nearly all the surface surrounding this formation is flat and
level.

"Some of the streaks from Kepler radiate in the direction of Aristarchus, others towards Copernicus, cutting
right through the rays from those formations. From this it is gathered that Copernicus was formed first, then
Aristarchus, and Kepler still later on in the moon's history.

"The surrounding wall of Kepler is comparatively low with respect to the lunar surface level, but the depth of
the crater is nearly ten thousand feet below the mountain peaks. The whole formation is covered with the same light-
reflecting material as the streaks which surround it."

CHAPTER VI

THE SCENERY OF THE MOON'S SOUTHERN HEMISPHERE

I now directed M'Allister to steer across the lunar equator into the southern hemisphere, and our attention was
soon attracted by a very large walled plain on the eastward side of our course.

John asked me what it was called, and I explained that it was named Grimaldi, being also well known to
observers as the darkest tinted of all the large lunar formations. As seen from the earth it appears a narrow ellipse,
but we could see its full width, which is 129 miles, the length being 148 miles. It is also noteworthy as one of the
few plains which are convex in section, and it is so large that its area is equal to the combined area of the whole of
the counties of England south of the line of the Thames, including Cornwall.

I showed M'Allister this formation on our map, where it appears only a narrow ellipse in consequence of the
moon's curvature, and pointed out how very different was its appearance now we could see over its whole extent.
Other formations nearer to the moon's limb appear still more foreshortened when viewed from the earth.

John here remarked that "these large ring-plains covered immense areas, and, now that we could actually see
them, their magnitude was more impressive than anything we could have imagined from merely hearing or reading
about them."

"Yes, John," I said, "from our altitude of more than ten miles above the lunar surface we command a much
more extensive view and gain a better knowledge of details than we could obtain even if we landed on the moon.
For instance, if we could stand down in the centre of one of those very large rings, we should imagine we were in
the midst of a boundless open plain. The mountains all around us would be so distant that, owing to the sharp
curvature of the lunar sphere, they would all be below the horizon, notwithstanding the fact that many of them are
several thousands of feet in height. So, for all we could see of them, those mountains might be non-existent.

"In the case of somewhat smaller rings we might perhaps see, here and there above the horizon, just the
topmost peaks of some of the more lofty mountains."

M'Allister was now struck with an idea, and exclaimed, "Professor, I notice that many of these great walled
plains are very flat, and I should think they would make fine golf-links, for there would be plenty of room to send
the ball flying!"

"Undoubtedly," I answered, "you would have plenty of space for that; and I can tell you that you would be able
to send the ball flying six times as far as you could on the earth with the same expenditure of force, because the
moon's gravitation is only one-sixth of that of the earth."

"That would be grand," said M'Allister. "I should like to have a few turns at golf on the moon."

"Ah, but you would also have extra long tramps after your ball," I told him, "so you would get plenty of
exercise; but, for the reason already mentioned, you would be able to get over the ground six times as easily."

"Well, Professor, I should not mind the distance in those circumstances," he answered jauntily.

"Perhaps you like jumping exercise too," I said. "Only fancy, M'Allister, if you wanted to jump across one of
those narrower cracks! Why, if you could jump a distance of ten feet on the earth, you could jump sixty feet on the
moon just as easily! Some of our athletes have jumped a length of twenty-six feet, so the same persons could with
equal ease jump 156 feet on the moon! What do you think of that for a long jump?"

"Heh, Professor," he replied, looking rather bewildered, "what a jump! Why, I should think the moon was never
coming down again!"

"I say, though, M'Allister, after all I am inclined to think you would not find golf on the moon altogether a
pleasant game," said John.

"Why not, mon?" inquired M'Allister.
"Well," answered John, "I was thinking that if you sent your ball flying into one of those cracks which are several miles deep you would find yourself eternally 'bunkered,' for no niblick ever made would get you out of that."

M'Allister laughed so heartily at this idea of John's that we both joined in his mirth; then I recommended him to wait until we reached Mars if he wished to enjoy a game of golf, for there he would be sure to find enormous stretches of level ground.

[Illustration: From a coloured drawing by M. Wicks Plate III
CHART OF THE MOON, SHOWING THE PRINCIPAL FORMATIONS SEEN ON ITS SURFACE
The dark areas are termed seas, though there is no water on the moon. The many small rings are ring-mountains and ring-plains. (The North Pole is at the top.)]

[Illustration: Plate IV
INDEX MAP TO CHART OF THE MOON
1. Bay of Rainbows
2. Plato
3. Sea of Cold
4. Alps Mountains
5. Great Alpine Valley
6. Cassini
7. Autolycus
8. Aristillus
9. Archimedes
10. Timocharis
11. Lambert
12. Euler
13. Sea of Showers
14. Aristarchus
15. Herodotus
16. Ocean of Storms
17. Copernicus
18. Apennine Mountains
19. Sea of Serenity
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23. Sea of Tranquility
24. Sea of Fertility
25. Hevel
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28. Flamsteed
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33. Albategnius
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35. Alphonsus
36. Arzachel
37. Theophilus
38. Cyrilus
39. Catherina
40. Sea of Nectar
41. Langrenus
42. Vendelinus
43. Petavius
44. Schickard
45. Wargentin
Proceeding on our tour of inspection, we crossed the Ocean of Storms to a point near the central part of the lunar surface, and I showed them the fine walled plain called Ptolemaeus. This is 115 miles in diameter, and contains an area as large as the combined areas of Yorkshire, Lancashire, and Westmorland, its highest peak being 9000 feet in altitude. It forms the most northerly of a line of walled plains, the most southerly being Arzachel, which is sixty-six miles in diameter, and has a very depressed floor; while one peak on the walls rises to a height of 13,000 feet.

Passing farther west, we next examined another splendid group of three ring-mountains, arranged in a line running nearly north and south, viz. Theophilus, Cyrillus, and Catherina. The first is the most northerly, and is about sixty-four miles in diameter, with several very high peaks—one rising as much as 18,000 feet, and two on the opposite side being 16,000 and 14,000 feet high respectively. Even the central mountain is very large in area, and 6000 feet high. "That," I remarked to M'Allister, "is nearly half as high again as Ben Nevis, the highest mountain in Scotland, which is, after all, only 4400 feet high."

"Ben Nevis, Professor, is 4406 feet high!" corrected M'Allister.

"That's right, M'Allister," said John, clapping him on the back, "stick up for bonnie Scotland, and don't let her be robbed of that six feet of mountain!"

Proceeding, I then said that Cyrillus, the middle ring, was, as they could see, very irregular in shape; and the walls were in some parts very much broken and damaged.

Catherina is the largest of the three, being over seventy miles in diameter, and its highest peak is 16,500 feet in altitude.

I should have liked to have shown them the splendid double-walled plain called Petavius, which has a convex floor some 800 feet higher in the centre than at the edges. We were, however, too late both for that and Langrenus, another fine formation on the same meridian, for the sun had set upon them and they were in darkness, so it was no use going any farther in that direction.

We now directed our course over the Sea of Clouds till we arrived at what is known as the "Straight Wall."

"M'Allister," I said, "that ought to interest you, for there is a somewhat similar formation in Scotland. You see this is an escarpment, or cliff, over sixty miles long, and varying from about 600 feet to 900 feet in height.

"This cliff is one of the best known examples on the moon of what in geology is termed a 'fault,' indicating either that one part of the general surface has been greatly elevated, or that the adjoining part has been depressed. We have many examples of such 'faults' on the earth—for instance, one runs a long way across Scotland, from Stonehaven round to Helensburgh, between the Highlands and the Lowlands, and is about 120 miles in length. That is about twice the length of the Straight Wall; so you see that Scotland can beat the moon in that respect!"

This brought M'Allister up to the scratch. "Scotland," he exclaimed excitedly, "can hold her own in most things! Why, mon, the empire is indebted to her for the finest statesmen, the cleverest lawyers, the best engineers and scientists, and, allow me to say, the bravest soldiers in the whole world! Scotsmen go everywhere, and can do anything!"

"Oh yes, M'Allister," said John, with a laugh, "and a Scotsman has got to the moon! but, please, do not forget that two Englishmen planned the trip, and devised the means of accomplishing the journey!"

M'Allister smiled a rather wintry smile, and then subsided. John was a bit too smart for him that time.

Passing on, we inspected the large cleft running parallel to the Straight Wall, and the small mountain close by named after Birt, the well-known selenographer. We then crossed the Sea of Clouds again, and had a long look at the great system of straight clefts near Campanus and Hippalus, together with the fine walled plain Gassendi, the floor of which is at some parts 2000 feet above the lunar surface. I had often studied this through the telescope, as it is a most interesting formation.

"Well, Professor," remarked M'Allister, "I have travelled nearly all over our own world, but in all my journeyings I have never seen such wild and rugged scenery as I have during the few hours we have been passing over the moon. The mountains seem to be split and rent in all directions, especially where there are volcanic craters in the neighbourhood—and, really, they seem to be everywhere; while landslips are very numerous, and the mountain passes are extremely rugged and gloomy."

"Yes," I replied, "my telescopic observations had prepared me for a great deal, but the weird ruggedness of the lunar scenery exceeds all my anticipations."
"What is the explanation of it all?" M'Allister inquired.

"I should think, M'Allister, that much of it was originally caused by the extreme violence of volcanic outbursts," I answered; "but the excessive expansion and contraction, resulting from the alternate spells of intense heat and intense cold to which the moon is continually exposed, will account for the formation of many of those tremendous chasms and precipices which we see everywhere around us, as well as for the huge mounds of dislodged rocks and débris, which are piled up in such chaotic confusion on the ledges of the mountains and round their bases.

"On the earth such débris would very soon have become smoothed by atmospheric erosion, the interstices would have been filled up with dust and soil, while the growth of vegetation would have added a new charm to the effect.

"You have seen the great landslip in the Isle of Wight! When it fell all was wild desolation, but it has become covered with such a luxuriant growth of vegetation that it now presents a scene of beauty.

"On the moon, however, there is neither atmosphere, rain, nor moisture to produce weathering of the rocks or to encourage the growth of vegetation; so the rocks remain just as sharp, rugged, and bare as they were ages ago when they were first split off from the mountains.

"No doubt very large masses of rocks are still frequently being dislodged, and if we could see them falling from the upper part of a mountain, rebounding along the spurs, with fragments flying in all directions and ultimately dashing to pieces at the base, it would seem to us most uncanny not to hear the slightest sound arising from all this apparent commotion. Without an atmosphere, however, no sound could be produced, no matter how many thousands of tons of rock might fall to the ground.

"Tremendous changes of this nature may be happening on the moon, but our telescopes are not powerful enough to enable us to see the results. They would have to cover an area of miles to be noticeable, unless they presented some particularly striking configuration."

"Professor," exclaimed M'Allister, "how is it that all the shadows on the moon are such a dense black and so sharply defined at the edges?"

"That," I exclaimed, "is entirely owing to the absence of the atmosphere. On the earth, even at night time, some light is diffused by our atmosphere, and shadows are never dense black even when thrown by a bright sun. On the moon it is black darkness everywhere outside the direct rays of the sun, and there is no gradual diminution of the darkness about the edges of shadows such as we see on the earth. The only mitigation of the blackness is seen where some light is reflected across from the rocky walls on which the sun is shining.

"In those deep recesses down at the bases of the mountains the cold must be most intense and the darkness truly awful. It all looks very nice when the sun is shining, but appearances are often deceptive, and do not improve on a closer acquaintance."

We could not have landed upon the moon if we had desired to do so, for no provision had been made for a supply of air by means of helmets and other apparatus. I kept my own counsel in this matter, as I had very good reasons for discountenancing any proposal to investigate the lunar scenery too closely.

By a curious coincidence, not long after this conversation we had ocular demonstration of the fact that the moon is liable to changes from other agencies than those of expansion and contraction.

We were looking at some distant mountains which were in the full sunshine. Suddenly a dark shadowy looking mass shot across the sky and struck one of the mountain peaks some distance down from the top. The peak seemed to be immediately demolished, and vanished from our sight!

M'Allister gazed spellbound; but John excitedly exclaimed: "Did you see that, Professor? One moment the peak was there, and the next moment it was gone!"

"Yes," I said. "Undoubtedly that dark shadow was a large meteoric stone. Many have fallen on our earth at various times, some being tons in weight. Usually, however, they are so small that on entering our atmosphere they become fused by the friction and changed to dust. Larger ones are partially fused, and often split into fragments in the upper air. The moon, having no atmosphere, is quite unprotected in this respect; and meteorites moving at enormous speeds, probably over forty miles in a second, travel unchecked and unaltered in character until they strike the lunar surface. It is estimated that immense numbers constantly enter our atmosphere and are destroyed; but the moon must be continually exposed to bombardment by meteorites of considerable size.

"Many of our ships have been lost at sea in calm weather, and their fate has remained a profound mystery; but it is not at all improbable that some of them have been destroyed by large meteorites, for several instances are recorded of ships having very narrow escapes from these dangerous missiles from outer space."

Passing on towards the south-west, we had a long look at the magnificent formation named Tycho. It is a ringplain nearly fifty-six miles in diameter, the mountain walls having some peaks over 17,000 feet in height. I drew their attention to the long bright ray-streaks which radiate in all directions for many hundreds of miles from the neighbourhood of this formation, to which I alluded when we had been looking at the rays from Proclus. Tycho and
these bright streaks can be seen from the earth when the moon is full without the aid of a telescope, if one possesses
good eyesight.

An enormous number of ring-plains and ring-mountains exists all over the southern half of the moon's disc; in
many cases there are rings within rings, and others where they have overlapped or cut into previously formed rings.

Moving almost due south, we passed the large but partially ruined walled plain known as Maginus. This ring
has a floor which is no less than 14,000 feet below the lunar surface. We then arrived at that favourite object for
telescopic observers which is named Clavius. This is an enormous ring-plain, being over 142 miles in diameter, and
encloses an area of 16,000 square miles, thus being half the area of Scotland. It has a very depressed floor, and some
of the mountains are 16,000 to 17,000 feet in altitude.

Farther on, and close to the south pole, we saw the very deepest of the lunar walled plains, which is named after
Newton, who possessed probably the deepest intellect of any of our astronomers. A smaller formation south of Plato
was originally named after him, but was not considered worthy of a man of his scientific eminence, so the name was
transferred to the formation we were looking upon. It is about 143 miles long and very irregular in shape, and its
depth is about 24,000 feet--so deep, in fact, that the sun's light never reaches to the bottom; thus, when we look at it
from the earth, the floor is always in shadow.

The Leibnitz Mountains, unfortunately, were not visible, as the sun had set upon them. I, however, mentioned
that this range comprises several peaks which are believed to be the highest on the lunar surface, reaching as they do
an altitude of 30,000 feet, and, according to some measurements, 40,000 feet. They are very difficult to measure,
owing to the fact that they are really situated on the farther side of the moon, extending east and west of the south
pole, and are only occasionally brought into view by the moon's libration; even then they are seen in profile, and so
situated that they cannot be measured with certainty. They are, however, so high that they blunt the southern cusp of
the moon when it is in crescent form.

I now directed M'Allister to turn the vessel in a north-easterly direction, and we moved across to the last objects
which I proposed to examine. One was the large walled plain "Schickard"--about 135 miles in diameter--which
encloses several other rings; the other, which lies to the south-east of it and close to the moon's south-eastern limb, is
probably the most unique object on the lunar surface. As we gazed upon it I explained that the formation, which is
known as "Wargentin," would probably in the usual course of events have been a ring-plain about fifty-four miles in
diameter, but it really is a high plateau of that size, with very low ramparts. It is evidently a ring-plain which became
filled to the brim with lava, or mud, that welled up from the interior of the moon; and the mountain walls, being
exceptionally strong and without any breaks or gaps, withstood the enormous pressure of the lava, which therefore
solidified and formed the great plateau as we now see it. The low ramparts, which we noticed here and there, are
really the isolated peaks and ridges of the mountains forming the walls. This is the only known instance of such a
formation; but probably others would exist had not the walls of the rings given way under the pressure of the lava.
The walls of several ring-plains have been quite carried away, and, in some cases so obliterated, that it is now
difficult to make out the original shape of the rings.

Having taken a last look at this unique object, I directed M'Allister to set the machinery in motion and rise for
the purpose of quitting the moon.

"But," interposed John, "are you not going to have a look at the back of the moon, Professor?"

"No, John," I answered, "only a small portion of it is now in the sunlight, the rest is in the blackest darkness, so
we should not be likely to learn much more about it than we know at present."

"Do you think the moon is inhabited?" he then asked.

"No, I do not think it is; no sign of life has ever been discovered, and we have seen nothing to indicate its
existence here. The prevailing conditions seem to preclude the possibility. Think, John, if there is any life, what
must it be! Without any atmosphere--therefore, not a sound to be heard, for all would ever be in the most deathly
silence--no breath of wind; never a cloud nor a drop of refreshing rain, nor even dew; intense heat in the sunlight
and the most intense cold everywhere in the shade! If any life does exist, it is most probably down in those gloomy,
dark and cold recesses at the bottom of the ring-mountains, where there may possibly be some remains of an
atmosphere. It would, however, be life in such a dreadful and debased form that I would rather not think about it at
all.

"For a somewhat similar reason, I have directed M'Allister to keep the Areonal at least ten miles above the
lunar surface all the time we have been passing over it. When we saw it from a distance it was, as you know, an
object of surpassing beauty; and as we have seen it from here it has still been pleasant to look upon. This is truly a
case where distance lends enchantment to the view; for, if we went down close to the surface, we should find it a
scene of the weirdest and wildest desolation--more horrible than anything seen during a nightmare, and more terrible
than anything imagined by the insane!

"No, John," I concluded, "let us retain our memory of the moon as a thing of beauty, and leave it at that."
"I quite agree with your view of the matter, Professor," John replied; so I gave the signal to M'Allister, who was awaiting the result of our discussion, and we soon left the moon far below us.

CHAPTER VII
WE RESUME OUR VOYAGE--THE SUN AND THE SKY AS SEEN FROM SPACE

All the time the Areonal had been near the moon some of our machines were storing up fresh power, and we had accumulated a supply amply sufficient to meet any extra requirements in the event of our arrival upon Mars being unduly delayed.

We now turned and looked back at the earth; and, as the moon was so near to it at that time, the earth's disc appeared very nearly two degrees in diameter, or nearly four times the usual apparent diameter of the full moon as seen from the earth. The crescent of light on its right-hand side was rather wider than when we last looked at it; but so many clouds hung over it, that we could not see what countries were comprised in the lighted portion of its surface. Owing to the light of the stars behind the earth being diffused by the dense atmosphere--in the same way as it would be diffused by a large lens--there was a ring of brilliant light like a halo all round the earth's disc.

Having passed away from the moon, I now gave M'Allister the necessary directions in order to keep the Areonal on a course which would enable us to head off the planet Mars at, as near as I could reckon, the point it would reach in fifty days' time. The course having been set, M'Allister was free to join us again, as the machinery required very little attention.

When he did so, M'Allister at once asked me a question. "Professor, can you tell me when it's going to be daylight? The sun has been shining for hours and hours, yet it's still night; the sky is blacker than the blackest night I ever saw, and the stars are all out!"

John laughed heartily, and said, "M'Allister, this is daylight! and all the daylight you will get until we reach Mars."

M'Allister turned to me with a perplexed look on his face and asked, "Is that right, Professor, or is he trying to pull my leg, as he said he would?"

"Oh yes! It's quite right, M'Allister," I replied. "It is now full daylight, and we shall have no more night until we reach Mars. That, as you know, will be seven weeks from the present time."

"Well, Professor," he exclaimed, "then how is it the sky is so densely black and the stars all shining so brightly? I never saw the stars in the daytime before, yet these are shining brighter than they do on the earth at night."

"Simply," I said, "because upon the earth we were surrounded by a dense atmosphere, which so diffused the sun's light that the whole sky appeared bright. The stars were there all the time, but their light was so overpowered by the brilliancy of the atmosphere that they were quite invisible to us."

"Now, we are out in space where there is no atmosphere at all, so the sky appears a very dense black; and the stars, having nothing to obscure their light, shine out more brilliantly than they do on the earth. They appear as bright points of light, and even the sun does not shed a general light over the sky, there being no atmosphere to diffuse it."

"Yes," he persisted, "but you said we should have no more night until we got to Mars!"

"Certainly," I answered. "Surely, M'Allister, you must have forgotten that night is brought about by the earth's rotation on its axis, and that the part which is turned away from the sun is in darkness because its light is hidden by the solid body of the earth, while the earth's shadow darkens all the sky. When, by the earth's rotation, that part is again turned to the sun then it becomes daylight. Remember we are not now on the earth, but out in space!"

"Of course I did know all that, Professor," he exclaimed, "but, just for the time, I had forgotten."

"Never mind, M'Allister, we all forget such matters sometimes, and this is quite a new experience for you. But just take a good look at the sun--have you noticed any difference in its appearance?"

"Yes, Professor, it doesn't look the same colour as when we saw it from the earth; it seems to have a violet tinge, like some of the electric lights in our streets. There are also long streamers of light around it, and coloured fringes close to the sun!"

"Yes, that is so," I said; "and we can see all those things now because there is no atmosphere. No doubt you have noticed that on the earth the sun appeared red when low down in the sky, and during a fog it appeared redder and duskier still."

"Oh yes, I've often noticed that," he answered.

"That was caused by our atmosphere which, when thick, absorbs all but the red rays of light. On a clear day the sun appears an extremely pale yellow, or very nearly white; still the atmosphere absorbs some of the light rays, so we cannot see its true colour as we do now. Those coloured fringes round the edges can only be seen from the earth by the aid of a special instrument, and then they do not show all their true colours."

"That pearly light all round the sun, and the long streamers that give it the appearance of an enormous star with six long points, form what is termed the solar corona, and this can only be seen from our earth during the very few
minutes when an eclipse of the sun is at its totality. It is to see the corona and other surroundings of the sun, in order to study them, that astronomers go such very long distances—often thousands of miles—when there is a total eclipse expected, and not merely to see the eclipse itself. They hope, in time, to learn much from such observations; but if it happens that the sky is over-clouded during the period of total eclipse, then all their expense, and the time spent in preparations and rehearsals of their procedure, are, unfortunately, entirely wasted.

"Now, M’Allister, if you will take my glass you will be able to look at the sun and examine it without any risk to your eyesight, for it is provided with a dark glass to shut out all the dangerous glare. You will then see what the fringes and inner and outer coronas really are like."

He took the glass and looked for a long time at the sun, and, judging from his exclamations of surprise and astonishment, he was extremely interested and delighted with what he saw. John was also examining it at the same time through his own glass.

Presently the latter turned to me saying, "Professor, I no longer wonder that astronomers are prepared to travel long distances, and to risk a great deal of discomfort, and even hardship, in order to view and study the sun's surroundings. Of course to them it is not merely a sight to be seen, but the only means by which they can acquire a knowledge of solar physics. Merely as a sight, however, it is most wonderful. At many places all round the edge of the sun's disc I can see what look like coloured flames—pink, pea-green, carmine, orange, or yellow, all in incessant movement—shooting out at times, or waving and shimmering in a manner that is indescribable. The changes in form and colour are as sudden, yet as definite, as the changes produced by turning a kaleidoscope; while the intermingling of the various colours frequently produces an effect which I can only compare to the iridescent colours on mother o' pearl. Then all around and beyond the coloured fringe there is the light of the pearly inner corona; beyond that are pearly and violet-tinged rays curling away in both directions from the poles, whilst outside all are the long, pearly, and violet-tinted streamers which assume the shape of a large many-pointed star; and even these do not seem at rest. Though astronomers cannot see all that we do now, there must be sufficient visible to them to afford opportunity for a most interesting study."

"That is indeed the case, John," I replied. "Those coloured flames, for instance, form a study in themselves, which some observers make their particular hobby. As seen from the earth, they all appear some tint of red; and, normally, according to measurements, they seem to extend a distance of some 20,000 miles above the sun. They shift their position very rapidly indeed; movements at the rate of 100 miles a second are quite moderate compared with some which have been noted, yet one can scarcely realise such rapidity of motion. Frequently, however, these flames are seen to rise in immense masses to tremendous heights above the sun's surface, evidently driven upwards by explosions of the most intense energy. In 1888, for instance, one was observed which, in the course of two hours, rose to a height of 350,000 miles before it broke up; that is, at the rate of 50 miles a second all the time; but, as the force would become less and less as the distance increased, at the earlier part of the time the movement must have been far more rapid. When the impetus derived from the explosive force is quite exhausted, the top part of the mass of flame often spreads out like the top of a tree, then breaks up and falls back into the sun in large flakes of flame.

"It is supposed that these violent explosions are the cause of the spots we so often see on the sun when observing it with our telescopes; and, when looking at them in their earliest stage, we are probably looking at a mass of flame end on, instead of seeing it in profile, as is the case when the explosion occurs near the edge of the disc. The flames, as examined by the spectroscope, appear to be largely composed of hydrogen gas; and no doubt many other gases—some quite unknown to us—enter into their composition. They are termed flames, but are more probably immense volumes of incandescent gases. The corona itself is never seen twice alike; its shape and size vary at every eclipse, but the variation runs in a regular cycle from maximum to minimum.

"You will also observe that all around the corona, and extending a vast distance beyond it on both sides, is a fainter pearly light. This is what is termed the zodiacal light, and is believed to be the thinner portion of the sun's atmosphere. We can see it from the earth occasionally after the sun has set, extending far up into the sky in the form of a semi-ellipse, the base of which is over the place where the sun is."

M’Allister here asked me to tell him "What was supposed to be the actual size of our sun, and how far it was away from the earth?"

I answered that "The sun is about 865,000 miles in diameter; and that he would have some idea of what an immense body it is if he remembered that it would require 64,000,000 globes the size of the moon to make one globe the size of the sun! Yet, notwithstanding this immense size, our sun is quite a small body as compared with some of the fixed stars, which, as perhaps you may know, are really suns at an inconceivable distance from us. The bright star Sirius, which is visible during our winter time, is not only very much brighter in reality than our sun, but must be many times larger; and there are others known to be very much larger than Sirius. It has been computed that Arcturus is in mass 500,000 times as large as our sun!"
determine. The mean distance of the sun from the earth is about 92,800,000 miles. When we are farthest from it its distance is 94,600,000 miles, and when nearest, 91,000,000 miles—these differences, of course, arising from the eccentricity of the earth's orbit.

"The sun's density is only about one-fifth of the earth's density; so it is evidently mainly gaseous—at all events in the outer envelopes.

"The spots upon the sun often cover such an immense area, that if our earth were dropped into the cavity, it would be like placing a pea in a teacup! Some of the spots entirely close up in a short time, but others last for weeks."

We now turned from the sun and looked at the stars. Such a multitude were visible as we had never seen from the earth; for small stars, which there required a telescope to bring them into view, could now be plainly seen without any such aid, and their various colours were seen much more clearly. They all shone with a clear and steady light; the twinkling and scintillation of the stars, as seen from the earth, being caused by the vibrations and movements in our own atmosphere. We also saw many nebulæ without using a glass.

The Milky Way was a most gorgeous spectacle, and its beauty utterly beyond description, as such an immense number of its component stars, and their different colours, were visible to the unaided eye; besides, we could trace wisps and branches of it to regions of the sky far beyond the limits within which it is seen from the earth.
We noted that the planets were also much more clearly seen; and the orange-red disc of Mars, of course, received our particular attention.

We had spent very many hours in viewing the moon, and a long time in examining the sun and stars; so we now sat down to a hearty meal, and, after a short time spent in conversation, we made our arrangements for taking turns in attending to the machinery, and then retired to bed.

Illustration: DIAGRAM: showing the Positions and Movements of the Planets between the 3rd of August and the 24th of September, 1909: and the Course taken by the "Areonal" on the Voyage to Mars.

The dotted line joining the Earth to Mars shows the course taken.

The dotted Circles show the Orbits of the Planets. The thick arrows show the distances travelled by the respective planets during the period covered by the Voyage: the line at the back end of the Arrow being the planet's position on the 3rd August, and the points of the Arrows the position reached on the 24th September.

The Orbits of Mercury, Venus, the Earth and Mars are drawn approximately to scale, but those of the outer planets are not. On the same scale, the radii of the Orbits of the outer Planets would, approximately, be as stated below. These figures will afford some idea of the enormous distances separating those planets.

Jupiter 3 Inches Saturn 5-3/8 " Uranus 10-7/8 " Neptune 17 "

Drawn by M. Wicks
Plate V

CHAPTER VIII
JOHN INSISTS ON GOING BACK AGAIN--A STRANGE, BUT AMUSING INCIDENT OCCURS

When we rose the next day the moon was a considerable distance away from us, but not so far off as might at first be imagined if one only considered the speed at which we were travelling; for, although moving at our full speed, the earth was following us up pretty closely, as the curve of its orbit would, for several days, run nearly in the same direction as we were going. Still, 2,000,000 miles a day was sufficient to make a diminution in the apparent sizes of the sun and Venus; and there was a gradual increase in the size of the planets, Mars and Saturn, towards which we were moving. As regards the fixed stars, however, there was no change in our surroundings, as they are such an immense distance away--the nearest being, at least, twenty billions of miles from the earth, that a few million miles more or less make no difference in their apparent size, or in their positions in regard to each other in the constellations as we know them in our maps.

As we were now fairly on our way, and moving rapidly in the direction we wished to travel, I thought it quite time to put into operation a scheme which John and I had previously decided upon, so I told M'Allister that he must be prepared to take a little change of air.

"Why, Professor," he exclaimed, "that sounds almost like a proposal for going to the seaside!"

"We certainly are not going there," I replied, "for we are rapidly moving away from all seaside resorts, and you are not likely to visit any of those places for a very long time to come."

"Well, mon, where are we going to get our change of air then?" he inquired; "you know there's no air at all outside of this vessel."

"Quite true," I answered; "so we must get our change of air inside the vessel."

"Yes," interposed John, "and, Kenneth M'Allister, you will have to make up your mind to have rather short commons of it, the same as we shall!"

"Whatever do you mean?" he inquired, now appearing really scared--for a dreadful thought had crossed his mind. "Mon, you surely do not mean that our machinery is giving out!"

"Oh no! not at all, M'Allister," I replied; "but perhaps I had better give you a full explanation of the matter:--"

"You know we are bound for the planet Mars, where the air is very much thinner than that which we have been accustomed to breathe, and very probably it is composed of somewhat different constituents. In these circumstances you will understand that, if we landed upon Mars without having taken proper precautions, such thin air might make us very ill, even if it did not kill us.

"That little compartment next the store-room was arranged and fitted up for the special purpose of supplying a thin air in which we could prepare ourselves for the atmosphere of the red planet. So we are really going into training. The machines in that room will generate an attenuated atmosphere somewhat similar to our own, and this will be automatically mixed in a cylinder with a little oxygen and nitrous oxide gas, so as to make it as near as possible like what we expect to find upon Mars. When we commence it will be only slightly different from our own air; then gradually we shall reduce its density and change its quality until it is as thin as we shall require. Each of us must spend about eight hours a day in that little compartment, though it will not be necessary to take the eight hours continuously, for we may spend a few intervals in the other rooms.

"John and I will take general charge of the machinery in that room, and he will also look after your machines whilst you are with me in our Martian air-chamber. In addition to these arrangements, we have prepared a
concentrated air of the same kind which we can carry about with us in bottles, so that by simply opening a little valve in the bottle we can inhale some of the air now and then when we are in the other rooms. By adopting this plan, I hope when we reach Mars we shall all have become so acclimatised that we shall be able to breathe the Martian air without much inconvenience."

"Heh, Professor," said M'Allister, "what a mon you are for planning things out; I would never have thought of that!"

"John had quite as much to do with the planning out as I had," I replied; "and as you now understand what we propose to do, we will at once commence our training, but we shall not feel much difference in the air for the next day or two."

We accordingly put our plan into operation, each of us making up at least eight hours' time every day in the Martian air-chamber, with the result that we gradually became accustomed to the thinner air, and could breathe it without any feeling of inconvenience.

As the days went on I began to notice that John was becoming very irritable; and so was I, though to a lesser extent. The closer confinement to one room was evidently beginning to tell upon us, and day by day the effects were more apparent on both of us, especially in the case of John; but, strangely enough, whilst we were becoming more depressed and irritable, M'Allister's spirits seemed to be rising every day!

It has often been remarked that if two or three people are shut up together for a considerable time, with no other companionship or change, sooner or later they are bound to fall out with each other.

Up to the present we had all agreed splendidly, but now John's irritability seemed to increase hourly; and as regards myself, I often found it necessary to exercise very great self-control to avoid giving very sharp and snappish answers to John's peevish and querulous remarks.

But the inevitable explosion came at last, and, like all explosions, was very sudden and unexpected when it did happen.

All the morning of the 2nd of September John had been wandering in and out of the various rooms, and frowning as though very displeased about something. I gave him a hint or two that he ought to put in more time with me in the air-chamber, but he took no notice of my suggestions. Presently, whilst I was in there alone, he came through, but, without speaking to me, went on into the store-room; and I heard him in there opening and shutting the lockers and cupboards, generally closing the doors with a loud bang, as persons do when in a very bad temper.

These bangs became more frequent and more violent, and at last succeeded each other with such rapidity that it seemed almost as though a vigorous cannonade were in progress.

I was wondering what could be the meaning of all this commotion, when suddenly the door opened, and John rushed into the room looking very cross indeed.

"I'm sorry, Professor," he cried, "though it's no use saying so; but we must go back to England again at once!"

"Good gracious, John!" I exclaimed, "what do you mean, and whatever has happened to upset you so and cause you to change your mind in this extraordinary way?"

"The deluge has happened," he replied, very crossly. "Professor, I've left all my stock of tobacco behind!"

"Never, John," I replied. "Why, you packed it up yourself; and I remember that when we overhauled the stores on our departure I saw the large tin of tobacco in your cupboard."

"I thought I packed it up," he answered, "but it's nowhere to be found now. As my tobacco supply had nearly run out I went to the cupboard this morning to get some more, and took down the big tin of twenty-six pounds labelled 'Tobacco.' I opened it, and what do you think it contained? You would never guess--well, it was tapioca!"

"I've looked everywhere I can think of, without finding a trace of the weed."

Just then M'Allister came into the room, and, noticing John's vicious frown and my troubled look, asked what was wrong. We told him the news, but he only laughed, and, turning to John, exclaimed, "Heh, John, don't fash yourself about the tobacco, mon; we'll find you a substitute. There's more kinds than one."

"Substitute, indeed!" said John snappishly, "no substitutes for me!"

"Well, John," I interposed, "you can have as much of my tobacco as you like; it's a good brand, you know, and I shall not mind a shorter allowance, for it does not mean much to me."

"No," he exclaimed sharply, "I can't take yours, Professor; it's your own special brand!"

"Well, John," said M'Allister, "you're as welcome to mine as if it were your own, and it's fine strong stuff too. And you can have some of my Navy plug as well," he added with a grin; "you'll find it rare good chewing."

"I simply cannot take the Professor's tobacco," said John; then, angrily turning upon poor M'Allister, he cried, "And as for your filthy stuff, it's a downright insult to offer it to me!"

"John! John!" I implored, "do be reasonable; it's not at all like you to talk in this rude way, and you must know we really cannot go back now!"

"Reasonable!" he sneered. "Do you call it reasonable, Professor, to ask a man who is a lover of his pipe to go
all the way to Mars and stay there for months without any tobacco!"

"Well, you will not accept mine, although you know perfectly well that you are heartily welcome to it. It's not your own particular brand, it is true, but it is a real good one. However, most likely you will find some on Mars; there's plenty of vegetation on that planet, without a doubt."

"Vegetation be hanged!" he angrily exclaimed. "What am I to do in the meantime? As for tobacco growing upon Mars--why, sir, I'd bet my bottom dollar that, outside our own world, there's no place in the whole universe where anything equal to my superb mixture can be produced. It's no use talking, Professor; as I said before, we must go back."

"We cannot go back," I replied sternly, for by this time I was becoming very irritated at his obstinacy. "The idea of going back so many million miles merely to fetch tobacco! Remember, we have travelled at least 57,000,000 miles on the way to our destination!"

John strode up and down, becoming more and more excited every minute, and was soon quite raging; yet it seemed most singular that the more John raged the more M'Allister laughed. I looked from one to the other in amazement and the most utter perplexity at this extraordinary change in their behaviour. Then all at once I saw a gleam of light, so to speak, and the solution of the mystery became clear to me.

The air we had so long been breathing when in the air-chamber, and when we made use of our air-bottles, was very similar to what is popularly known as "laughing-gas"; and undoubtedly we were all more or less experiencing the cumulative effects of the constant mild doses we had inhaled. Laughing-gas acts in a different manner upon persons of different temperaments: some will keep laughing, moderately or immoderately; others will become irritable, angry, or even pugnacious; whilst others again will weep copiously.

M'Allister was now talking rapidly and quietly to himself, laughing all the while, his eyes shining and twinkling merrily as though something intensely amusing were being enacted.

This seemed to react upon John, who apparently was irritated beyond control, and presently he roared out, "Kenneth M'Allister, stop that infernal grinning and chattering like a monkey! Stop it, I say! stop it directly!" But M'Allister took no notice and laughed louder than ever.

"Why, you confounded baboon," shouted John, "you're worse than any laughing hyena! Stop it, stop it at once, or I shall do you some mischief!" And he advanced towards M'Allister in such a menacing attitude that I had to rush between them to keep them apart.

He was now raging up and down the room, looking as angry as a hungry lion which has just had a long expected dinner suddenly snatched away from it; but the worse he became the louder M'Allister shrieked with laughter. The latter was now simply rolling about the room--for it could not be termed walking, it was so erratic--holding his sides and laughing, whilst the tears were chasing each other down his cheeks. He kept trying to speak, but had no sooner stuttered out the words, "Heh, mon! heh, mon!" than he was off again into another wild paroxysm of laughter, and was rapidly becoming exhausted.

Things were really becoming very serious indeed, and I saw that something must be done at once to put an end to this disturbance. So, going over to M'Allister, I took him gently by the shoulders and pushed him out of the room, saying quietly, "Go to your own room at once; but for goodness' sake don't touch the machinery until the air has had time to put you right again. Leave me to deal with John." He rolled off through the doorway, still laughing "fit to split" as people say.

Returning to John, I tried to calm him down; but it proved a long and difficult task, though at last I succeeded in persuading him to go with me into our living-room and sit down quietly.

After sitting there some time, puffing away at his pipe, the fresher air began to have its effect; and soon I judged that he was calm enough to talk the matter over and discuss the situation more reasonably.

Then I said: "John, my dear fellow, please listen to me. You know we have now travelled quite 57,000,000 miles on our journey, and that all our arrangements have been made with a view to reaching Mars not later than the 24th of September, because it will then be at the point where it is in opposition to the sun as seen from the earth. It is merely a sentimental reason so far as the opposition is concerned, but there are substantial reasons for not delaying our arrival.

"You say we must go back, but please consider all that such a course must involve. Though the earth has been following us up pretty closely on a slightly different course it is at the present about 13,000,000 miles away from us. You will see it out there on our left hand towards the rear of the Areonal; but we cannot go direct across to where it is now, for by the time we reached that point the earth would have gone ahead several million miles. Our only course is to head it off, and, taking the shortest line, that means a journey of over 12,000,000 miles. Therefore, we cannot reach England until the 8th of September at the earliest, and as we shall require at least a week to lay in fresh stores, it will be the 15th before we can start again.

"Starting on the 15th September we should have to travel at least 54,000,000 miles before we could catch up
Mars, and as that will take twenty-eight days, we could not arrive there before the 13th of October. (See the chart.)

"Thus, we must sacrifice our chance of being upon Mars on the date of opposition, and also the opportunity of catching the first glimpse of our earth a few days later. If we continue our journey now and reach Mars on the 24th of September the earth will then be only 37,000,000 miles away; but by the 13th October it will be over 40,000,000 miles distant. There is the further objection that to get back again in reasonable time we must leave Mars by the 1st of December, and the loss of three weeks' time will deprive us of many opportunities of learning what there is to be found on the planet.

"Now, John, like a good fellow, just think over the matter quietly and reasonably; you will then realise that it is quite impossible to interrupt our journey and return to England as you suggest."

"I have thought it all out again and again," he replied, "and can only repeat, Professor, that it is quite impossible for me to go on minus my tobacco!"

"Was there ever such an obstinate and unreasonable man!" I thought to myself. "What can I do to put an end to this absurd difficulty?"

[Illustration: DIAGRAM showing the relative positions of the Earth and Mars at the various Oppositions of Mars, from 1892 to 1924.
Past Oppositions are shewn by the firm lines with the dates outside the Orbit of Mars. Coming Oppositions are indicated by the dotted lines with the dates inside the Orbit.
The distance between any two consecutive Oppositions represents the distance in excess of one complete revolution in its orbit passed over by the planet since the last preceding Opposition. These distances are greater on the left hand side because of the planet then being nearer the Sun and consequently travelling more rapidly.
Drawn by M. Wicks.
Plate VI]

Resuming the conversation, and keeping as calm as I could in the circumstances, I placed the matter before him in all its aspects, and after we had been talking together for a long time, he seemed to be able to take a more reasonable view of the position. In order that something might be done to keep his mind from dwelling upon his proposal to return to England, I suggested that we should go to the store-room and thoroughly overhaul it.

He agreed to this, accompanying me to the store-room and pointing out the different places he had searched. The tins were in several sizes, but all were made square in order that not an inch of the available space might be wasted. We looked into a large number of tins which had not previously been examined, but without finding what we wanted.

At last a thought occurred to me, and I said: "You tell me, John, that you are quite certain you put up the tobacco and labelled the tin yourself, yet the tin so labelled was found to contain tapioca! Do you remember where the tapioca was stowed away?"

He pondered awhile, with his chin resting upon his fingers, then suddenly replied, "Yes, I think I know where it is," and, taking me over to another cupboard at the far end of the room, we made a further search and at last found the tapioca tin, opened it, and lo, there was the missing tobacco!

"Well, I'm blest!" said John, very slowly drawing out the words; then all his ill-humour suddenly vanished, and he burst into a most hearty laugh, in which I joined. Our laughter, indeed, was so mutually contagious, and so often renewed, that we had to sit down to finish it and recover ourselves.

Then John remarked, "Now, Professor, I think I can explain it all. You see I prepared and labelled those confounded tins before loading them up; so I suppose that when stowing away the parcels of tobacco I just glanced at the label on the tin and saw the letter T followed by the right number of other letters, and, taking it for granted that it was the tobacco tin, placed the tobacco in it. The only other tin left to pack was the one I supposed to be labelled 'Tapioca,' and no doubt, without troubling to look at the label at all, I put the tapioca into it; but, of course, it must really have been the tin labelled 'Tobacco.'"

Thus the matter was satisfactorily cleared up. John, having found his beloved weed and recovered from the effects of our patent Martian air, was now quite himself again, seeming very contrite, and apologising repeatedly for his rude conduct.

"That's enough, John," I said, as I laid my hand on his arm; "it is quite clear that what you did was mainly the result of the peculiar air you had been breathing, so I cannot blame you much. If I had not taken so many intervals in the purer air, I might perhaps have been equally affected; as it was, my temper was none of the sweetest."

M'Allister had also quite recovered by this time, and bore no ill-will towards John; indeed, I doubt whether he had any very clear recollection of what had occurred.

So that ended the matter; and this little explosion having cleared the air, we all settled down to our old amicable relationship. We, however, took the precaution of reducing the amount of nitrous-oxide gas in our mixture of air, with a view to preventing any similar untoward results in future.
CHAPTER IX
A NARROW ESCAPE FROM DESTRUCTION--I GIVE SOME PARTICULARS ABOUT MARS AND MARTIAN DISCOVERY

Things now went on quietly and, in fact, rather monotonously for several days; and then we met with another rather startling experience.

We were all sitting together in our living-room on the 9th of September, whiling away the time in a game of whist, and, as it was the final rubber and we were running very close together, we were quite absorbed in the play; although, of course, it was a dummy game.

Suddenly we heard a most tremendous crash, apparently from the right-hand side of the air-chamber, the vessel giving a violent lurch sideways, then shivering and trembling from end to end. The crash was immediately followed by a sharp rattling on the top and side of the Areonal, just as though a fusillade of good-sized bullets had been fired at us.

"My word! whatever's that?--one of the cylinders must have exploded," cried M'Allister, jumping up in alarm and running into the air-chamber. We followed him, and looked all round the room at the different machines and apparatus, but could find nothing wrong.

John, chancing to look up, however, at once noticed a large bulge on the inner shell of the vessel, high up on the right-hand side; and then, turning to me, pointed it out, saying, "I think, Professor, it is pretty clear now what has happened."

"Yes, that huge bulge explains itself," I replied; "undoubtedly a fair-sized meteoric stone has collided with our vessel. It is very fortunate that the stone was not much larger, or there would have been an end to the Areonal and to us as well. These meteorites travel at such tremendous speed that, on entering the earth's atmosphere, they become incandescent owing to the friction of the air, and, unless very large, are entirely consumed and dissipated into dust before they can reach the earth. Those that do fall are always partially fused on the outside by the tremendous heat generated by the friction of our atmosphere. These meteorites are what people call 'shooting stars,' and many are under the impression that they really are stars, until the difference is explained to them."

John said, "We ought to congratulate ourselves upon such a lucky escape from annihilation; for had our vessel been constructed of any metal less hard and tough than our 'martalium,' and without a double and packed shell, it must have been wrecked and entirely destroyed by the shock of the tremendous concussion it had sustained. Even the very metal of the casing might have been completely melted by the intense heat generated by the impact of the meteorite."

"Heh, mon!" exclaimed M'Allister; "it's all very well talking about our lucky escape, and putting it all down to your own cleverness in designing and constructing the Areonal; but you should rather give thanks to Providence for saving us, and for enabling you to take the precautions you did. I say, 'Thank God!'" he remarked, and he solemnly raised his right hand as he spoke.

"Quite right, M'Allister," replied John: "we are all too prone to credit ourselves with more than we are entitled to. At the same time, M'Allister, you must remember that we Englishmen recognise as fully as you do the overruling power of Providence, although we may not be quite so free in speaking about it in ordinary conversation." "Yes," I added, "you may be quite sure, M'Allister, that we are equally as grateful as yourself for the mercy which has preserved us all from an awful death. My very first thought on realising our extremely narrow escape from destruction was to say 'Thank God!' but I did not say it aloud as you did. It is in matters like these that people differ according to their temperament and training; and it is not safe to judge another because, in any particular circumstances, he does not act in precisely the same way as we ourselves would."

Thus we travelled on and on, each day bringing us more than two million miles nearer to our destination. Mars was apparently increasing in diameter the nearer we drew to it, and the dark blue line around the south polar snow-cap, indicating the lake of water from the melting snow, was very conspicuous. The snow-cap had recently decreased rapidly, being now near its minimum and irregular in shape, for in the southern hemisphere it was now late in June. Pointing to the planet, I remarked, "There is our destination! We see it now as the poet pictured it for us, and the words of Dr. Oliver Wendell Holmes are very appropriate to the present circumstances:"

"The snow that glittered on the disc of Mars Has melted, and the planet's fiery orb Rolls in the crimson summer of its year!"

On the 18th of September we passed between the earth and Mars, nearly in a line with the sun. On that date Mars was in perigee, or at its nearest point to the earth during the present year. Its distance from the earth was then 36,100,000 miles, and it will not be so close again until the 24th of August 1924. We could not see the earth, as its dark side was turned towards us, and it was also lost in the brilliancy of the sun.

At this date we had travelled 88,000,000 miles since we left the earth, yet we knew it was there, level with our vessel, and only about 29,000,000 miles distant on our left hand, whilst Mars was only 7,000,000 miles from us on
our right-hand side.

Our position now was as follows:--Taking an imaginary line drawn from the Areonal to Mars as the base line of an isosceles triangle, we were moving along the left side of the triangle, and Mars was moving in a slightly curved line along the right side. Our paths were therefore converging, and if all went well we should both meet at the apex of the triangle on the 24th September, as we had originally intended.

We therefore had six clear days to cover the distance of less than 12,000,000 miles, so we should have sufficient time to slacken speed at the end of the journey. (See the chart.)

Mars was rapidly growing in size and brightness, for the distance between the planet and the Areonal was quickly diminishing as our paths converged, and the various markings on its almost full round disc formed the subject of continual observation and conversation. We had noticed on several occasions a mistiness on some parts of the planet, which I attributed to the vapours raised from the canals by the heated atmosphere.

On the 21st of September, when we were all enjoying a smoke in the "evening," and conversation had dragged somewhat, John started us off on a fresh tack and gave us something to talk about for a very long time.

He winked at M'Allister and, looking at me with a knowing smile, said: "Professor, as we are nearing our destination it might perhaps be well if you now gave us some detailed information respecting the planet, similar to that which you gave us when we were approaching the moon. It would be both interesting and useful; for we should learn much more from an orderly statement of the facts than we should from several long but desultory conversations."

"Yes, Professor," chimed in M'Allister, "I'm quite ready to learn something definite about Mars, for I can't say I really know much about it at present."

"Very well then," I replied, "it is upon your own heads, and if you are willing to listen to a rather long story, I am prepared to do the talking. Please remember, however, that it will require some time to make matters clear and understandable."

"Fire away, mon," cried M'Allister, "we will listen as long as you care to talk."

So I began--"Mars, as no doubt you are aware, is a much smaller planet than the earth, its diameter being only 4220 miles, which is a little less than twice the diameter of our moon.

"It would require nine and a half globes the size of Mars to make one globe the size of the earth; and even then it would not be so heavy, because the average density of Mars is only about three-fourths of that of the earth. Mars is the next planet outside the earth's orbit, so is the fourth from the sun. The orbit in which Mars moves in its journey round the sun is very much more eccentric than the earth's orbit; in fact it is more eccentric than the orbits of any of the larger planets. As a consequence, the planet's distance from the sun varies greatly according to the particular part of the orbit in which it may be moving. Its mean distance from the sun is 141,500,000 miles, its greatest distance over 154,000,000, and at its nearest approach to the sun, or 'perihelion,' as it is called, its distance is only 129,500,000 miles. Mars travels in its orbit at a mean rate of 15 miles a second.

"As its orbit is also eccentrically placed in relation to the earth's orbit, it follows that its nearest distance from us in any particular years may vary greatly. The nearest possible approach it can make in regard to the earth is a little under 35,000,000 miles; when at the opposite point of its orbit its nearest approach is about 62,000,000 miles from the earth. As the years of Mars and the earth differ greatly in length, and the two planets move at different speeds, the very favourable oppositions can only occur about once every forty-five years; though a comparatively near opposition occurs about every fifteen years. Such a close approach we have just witnessed, and it will be fifteen years before Mars is again so near to the earth!

[Illustration: CHART: showing the Orbits of the Earth and Mars, and the relative positions of the two Planets, during the years 1909-10. Mars passed over the dotted portion of its Orbit in the year 1910.]

The Outer Circle is the Orbit of Mars, and the inner Circle is the Orbit of the Earth. The Seasonal points on both Orbits show the Seasons in the Northern hemisphere. In the Southern hemisphere the Seasons are reversed, "Summer" occurring at the point marked "Winter," and "Spring" at the point marked "Autumn," &c. &c.

The dotted downward line on the left-hand side shows the course taken by the "Areonal", which left the Earth on the 3rd of August and arrived at Mars on the 24th of September. * Shows the point reached when John wished to turn back; and the lower dotted line, the alternative course then suggested.

The long dotted line running upwards to the Spring Equinox of the Earth shows the course taken on the homeward Voyage.

Drawn by M. Wicks.
Plate VII]
"The Martian year is equal to 687 of our days, but as the Martian days are slightly longer than ours, this really represents 668 Martian days.

"The entire surface of Mars contains an area of about 56,000,000 square miles, which is about one-fourth of the
area of the earth's surface.

"Its gravity is only three-eighths of the earth's gravity, thus everything upon Mars would weigh proportionately lighter than on the earth, and the amount of labour required to do such work as digging or lifting would be lessened. There would, for the same reason, be greater ease of movement in walking, jumping, or running, and large bulky animals like our elephants could move with almost the same ease and freedom as our goats.

"Theoretically, we should expect to find the atmosphere upon Mars very much thinner than our atmosphere, and actual observation proves this to be the case. We are able to see details on the surface of Mars with very much greater distinctness than would be the case if its atmosphere were as dense as ours. Moreover, clouds are comparatively rarely seen; and the majority that are observed present more the appearance of clouds of sand than rain clouds. Usually, also, they float very much higher above the planet's surface than our clouds are above the earth's surface; ten miles high is quite an ordinary altitude, and some have been estimated as quite thirty miles above the planet.

"Many theorists have attempted to prove that, owing to the planet's distance from the sun, and the thinness of its atmosphere, the temperature of Mars must be very low, probably below freezing-point even at the equator. Dr. Alfred Russel Wallace has gone further than this, and suggests that the temperature must be eighty degrees Centigrade below freezing-point; that there is no water or water vapour on the planet; and that it is quite impossible for life to exist there!

"However, as the result of delicate bolometric experiments, careful calculations, and consideration of conditions affecting the result which have not previously received so much attention, Professor Very has arrived at a different opinion; and actual observation has shown that there is very little indication of frost outside the frigid zones. Even in the polar regions it is at times evidently warmer than at the earth's poles, because during the spring and summer the snow-caps upon Mars not only melt more rapidly, but melt to a much greater extent than our polar caps do. In 1894 the southern polar snow-cap of Mars was observed almost continuously during the melting period, and it was actually observed to dwindle and dwindle until it had entirely disappeared. It is rather strange to think that we know more about the snow-caps of that far-distant world than we do about those on our own earth.

"Owing to the lesser gravity on Mars the snow and ice which forms the caps would certainly be lighter and less closely compacted than the snow and ice upon our earth; but it is quite clear that it could not melt to any extent unless the temperature remained above freezing-point for a considerable length of time.

"It has, however, seriously been contended that the Martian polar caps are not snow at all, but frozen carbon dioxide--the poisonous dregs of what once was an atmosphere. Carbon dioxide, however, melts and becomes gaseous almost suddenly, but these polar snow-caps melt gradually, exactly as frozen snow would; so this theory fails altogether to fit the circumstances.

"Moreover, the water which accumulates all round the base of the melting snow-cap has been carefully observed on many occasions, and in the early stage of melting it appears blue in tint, but later on, as upper layers of snow dissolve and those nearer the soil are reached, the water presents a turbid and muddy appearance; exactly what might be expected when water has been contaminated by the surface soil.

"Dr. Alfred Russel Wallace declines to accept the blue tint as any proof that the liquid is water, and contends that shallow water would not appear that colour when viewed from a distance. You will, however, have observed that the water in all our shallow reservoirs appears intensely blue when observed from any distant and elevated point of view. It seems to me that when, as in the case of Mars, we have a very thin atmosphere laden with sand particles, we have exactly the conditions which would produce a very blue sky, and cause the water to appear a deep blue colour when viewed from a distance.

"It is also contended that water cannot be present on Mars, because none of our skilled spectroscopists has yet been able to demonstrate by the spectroscope that there is any water vapour in the Martian atmosphere.

"This, however, is generally acknowledged to be a very difficult and delicate operation; and, in any case, it is purely negative evidence, and cannot be accepted as final. I feel quite confident that sooner or later a means will be found of definitely proving the presence of water vapour upon Mars by the aid of the usual lines in the spectrum. There are too many evidences of its presence, such as clouds, hoarfrost, snow, and seasonal changes in vegetation, to warrant the rejection of the idea of its existence merely because it has not been detected by the particular means hitherto used by the spectroscopists.

"Mr. Slipher, of Flagstaff Observatory, has made many experiments with specially sensitised photographic plates. He has taken several photographs of the spectrum of the moon and others of the spectrum of the planet Mars. The plates of the lunar spectrum show a darkening of the 'a' band, which indicates the presence of water vapour, and we know that this is due to the water vapour in our own atmosphere. The plates of the spectrum of Mars show a much more definite darkening of the 'a' band, and Professor Lowell contends that this can only be due to water vapour in the atmosphere of Mars.
"Professor Campbell has, however, made similar experiments, and is of opinion that Professor Lowell has been deceived by the water vapour in our own atmosphere. Thus the matter stands at the present time, and we must await the result of further investigation before we can consider the matter settled.

"I, however, regard it as a certainty that improved means will definitely show that water vapour undoubtedly exists in the Martian atmosphere, and it is not unlikely that other constituents of that atmosphere may also be identified, and possibly even the relative quantities may be ascertained."

John here remarked that he had read of it being contended that life could not exist on Mars because as water would boil at a temperature a hundred degrees lower than it did on the earth, it would be impossible to boil a potato properly, or make a good cup of tea. He thought, however, that if water boiled at such a low temperature, then the proportion of water vapour in the air would be increased, as evaporation would be more rapid than on the earth.

"Undoubtedly so," I replied. "The first argument, however, is very weak. For many thousands of years the people on the earth not only managed to live, but attained a high state of civilisation, yet we have no reason to believe that they ever ate potatoes or drank tea! Even in England we have only known and used these articles for about three hundred years! The inhabitants of any world would be suited to their environments.

"The polar-caps on Mars are shown on very early drawings of the planet; but, up to the year 1877, little was known of the general surface details beyond the fact that the general colour was orange-red, diversified by dark patches of blue-green in some parts, and some narrow, serpentine markings here and there. All these markings are now much more accurately drawn, as the result of more careful and continuous observation. Sir William Herschel suggested that the red colour was attributable to the vegetation of Mars being red, instead of green as on our earth; but it was generally considered that the red areas indicated land and the dark areas water. The work of our modern observers has, however, resulted in a general revision of our ideas on these points.

"It had long been reasoned that, as the earth was accompanied by a moon, and Jupiter had at least four, Mars, the intermediate planet, might be expected to possess a satellite. The planet itself being small, its moon would probably be very small, and likely to be overlooked when observing with the telescope, because its light would be overpowered by the light of the planet, which would make the telescopic field of view very bright. Up to the year 1877 the most powerful instruments had been used without success in the search for the supposed satellite.

"In that year Mars made an exceptionally near approach to the earth, and Professor Asaph Hall, of Washington Observatory, took up the search, using a splendid refracting telescope having an object-glass 26 inches in diameter. The methods he adopted were rewarded with success, for he discovered not only one, but two satellites of Mars, and they were given the names of Phobos and Deimos.

"Both these satellites are very close to the planet and extremely small, Phobos being less than 4000 miles from the planet's surface, and Deimos only 12,300 miles from it. As seen in the telescope, they are very faint points of light which cannot be measured by ordinary means, and the estimation of their size was a matter of great difficulty.

"Professor Langley gives an interesting account of the endeavour to estimate their size by the amount of light reflected, as compared with the light afforded by our own moon when full. It was a most difficult task, as the comparison had to be made by means of tiny holes drilled in metal plates; and for a long time it was impossible to find a workman who could drill a hole sufficiently small for the purpose, although one of those employed had succeeded in drilling a hole through a lady's thin cambric needle from end to end, thus converting it into a tiny steel tube. One would have thought such a feat impossible; yet what was now required was a hole smaller than the one thus made through the tiny needle."

"My word!" said M'Allister, "I would like to see the mon who did that piece of work, and shake hands with him; he must be a rare clever fellow!"

"Yes," said John, "and I would like to see the drill he used; for such a long and extremely slender tool, to be effective, must be as clever a piece of work as the steel tube."

"I may tell you," I proceeded, "that success was at last attained; and as a result of the comparison of our moon's light with that of Deimos, it was shown that if the general surface brightness of the latter were equal to that of our moon, then Deimos must be only 18 miles in diameter, or about a 15,000th part of the area of our moon's disc.

"To state the matter in another way—supposing our moon were only 18 miles in diameter, and was removed to the same distance as Deimos is from us, then it would appear only the very faint point of light that Deimos appears when viewed through the telescope.

"By the same means Phobos, the satellite nearest to Mars, was estimated to be about 22 1/2 miles in diameter. These dimensions, however, depend on the brightness of these satellites being exactly the same as the general brightness of our moon; and later experiments have fixed the sizes as 36 miles for Phobos, and 10 miles as the diameter of Deimos.

"I will not detain you much longer on this subject, as we shall be able to discuss it further when we arrive upon Mars; but I may now mention that, in one respect, the little satellite named Phobos is unique. It is the only satellite
we know of which revolves round its primary planet in less time than it takes the planet itself to make one revolution on its axis.[6]

"Mars revolves on its axis in 24 hours, 37 minutes, and 22 seconds, thus the 'day' on Mars is nearly 38 minutes longer than our 'day.' Phobos revolves round the planet in the very short period of 7 hours, 39 minutes, and 14 seconds, and therefore makes more than three complete revolutions round the planet in the course of a single Martian day. The peculiar phenomena to which this very rapid motion gives rise, and the numerous eclipses which occur, will be matters of great interest to us all when we reach Mars. Our moon, as you know, takes a month to make one revolution round the earth."

"Professor," said John, "when we get to Mars, it will be rather a curious experience for us to see two moons shining in the sky at the same time!"

"My word!" exclaimed M'Allister, "two moons shining at once! If I go out and see such a sight as that, I shall think the whisky has been a wee bit too strong for me!"

"Well," replied John, "if your usual drink has the effect of making you see double, take good advice, and leave the whisky severely alone when you are on Mars, or else you will be seeing four moons all at once, and receive such a shock that you will never get over it!"

M'Allister laughed pleasantly as John said this. He is a real good fellow, and takes all John's chaff with the utmost good-humour; but, in justice to him, I must say that, although he sticks to his national drink like a true Scot, I have never once seen him any the worse for it. He knows his limitations, and always keeps within them.

CHAPTER X

THE DISCOVERY OF LINES UPON MARS--THE GREAT MARTIAN CONTROVERSY

After the little interlude with M'Allister, I resumed my remarks by saying that "The year 1877, so memorable for the near approach of Mars and the discovery of its two tiny satellites, was also the year in which a still more important discovery was made--a discovery, in fact, which has much enlarged our knowledge of the planet, and has also resulted in an entire revision of our conceptions respecting it.

"An Italian astronomer, Signor Schiaparelli, took advantage of the favourable position of Mars to observe it very carefully, and some time afterwards announced that he had seen upon its surface a number of very fine lines which had not previously been noticed, and these he had carefully charted upon his drawings and maps.

"This announcement started one of the most acrimonious discussions that the astronomical world has ever known; and although it is now over thirty years since it commenced, astronomers are still divided into two parties--one accepting the lines as demonstrated facts, the other either denying their existence, or endeavouring to explain them away by various more or less ingenious or fanciful theories.

[Illustration: From a Globe made by M. Wicks Plate VIII

MARS. MAP I

In all these maps the south is at the top. The dark shaded portions are vegetation, mostly on old sea-beds. The fine lines are the canals, and the round dots the oases. The light areas are deserts. Longitude "0" is seen on the Equator between the two forks of the "Sabaeus Sinus."]

"When Signor Schiaparelli's statements and drawings were first discussed, it was declared by some to be quite impossible that these fine lines could really have been seen by him: either his eyes must have been overstrained, or he claimed to see more than he actually did see. So warm did the discussion become that he soon withdrew from it altogether, but devoted himself to his work. As time went on, he not only verified his previous discoveries, but found numerous fresh lines, all of which appeared to run straight and true over many hundreds of miles on the planet.

"Milan then had a good clear atmosphere which was favourable for the observation of delicate planetary markings, and other observers who were well situated were able to see and draw many of the lines which Schiaparelli had discovered.

"It was, however, contended that such lines could not have any real existence, as it was asserted that they were too straight. It is quite true that straight lines on a rotating globe would appear curved when seen from some points of view, but if the objectors had carefully studied complete sets of drawings, they would have seen that the lines did assume a curved form in certain aspects of the planet.

"Then the very same people who denied the actuality of the lines because they were too straight, eagerly took up a suggestion that they were not actually narrow lines, but the edges of diffused shadings on the planet, apparently quite oblivious of the fact that the same objections must apply to them. Moreover, if there was difficulty in accepting the actuality of narrow lines, there must be immensely greater difficulty in believing that shadings could, in such a very large number of cases, all end in straight lines many hundreds or thousands of miles long, and always appear uniformly true, no matter upon what portion of the disc they might be seen, and whatever might be the angle of illumination.
"Besides, only a small proportion of the lines are connected with shadings. The shadings are more likely to be the result of the canals than the cause of the formation of illusory lines in so many cases.

"I have listened to many of these discussions, and have often been much amused at the tangle of inconsistencies in which some have involved themselves, by taking up fresh theories without regard to their previous contentions.

"As time went on each opposition of Mars brought the discovery of fresh lines, and numerous observers confirmed the reality of Schiaparelli's work.

"Professor Lowell, the well-known American astronomer, took up the study of Mars in a most thorough and systematic manner, and has since practically made it his life's work. An observatory was built at Flagstaff, Arizona, far away from towns and smoke, at an altitude of over 6000 feet above the sea-level, the site being specially selected on account of the clearness and purity of its atmosphere; while the observatory, being high up above the denser and more disturbed strata of air, afforded the most favourable situation possible for the proper observation of delicate planetary detail.

"There he continued the work which Schiaparelli had commenced, and, together with the colleagues with whom he has been associated, has, by long-continued and most systematic work, added greatly to our knowledge of Mars. Year after year has seen the addition of more lines on our maps of the planet, whilst many interesting discoveries have been made--one being that some of the fine lines were double, the second line always being equidistant from the first one throughout its whole length, no matter whether the lines were straight or curved.

"This caused a further outcry of objection. The observers were told that they had been overstraining their eyesight so that they 'saw double,' and also that they had been using telescopes not properly focussed. Such objections seem almost beyond argument, for no practical observer could use an improperly focussed instrument without at once discovering the defect.

"Besides, if the double lines were the result of eye-strain, or any other defect which might cause such illusions, all the lines would have been seen double, or at least all the lines running at the same angles; but as a matter of fact only a very small proportion of the lines were so seen, and it made no difference what position they occupied on the disc, or at what angles they were presented. Some of the doubles were, in fact, curved lines; and another point was that in some cases they were only doubled at certain seasons of the year.

"Other observers who saw the lines were charged with having studied the maps of Schiaparelli and Lowell until they had become obsessed with the lines, and when they looked through the telescope simply fancied they saw them!

"In England our atmospheric conditions are seldom really favourable to the proper seeing of the finer detail, and the very faint lines cannot be seen at all. The lines that are visible do not appear thin and sharp as they do to observers in more favoured climes, but rather as diffused smudgy lines, and so they are drawn by the observers. On a few occasions of exceptionally good seeing they have, however, been seen and drawn as finer and sharper lines.

"The visibility of the lines was, however, confirmed by so many observers of known integrity, and from so many different parts of the world, that the objectors were at last compelled to abandon the position they had occupied. Then a new theory was started, viz. that the lines were actually seen but did not actually exist, being really optical illusions arising from the apparent integration, or running together in linear form, of various small disconnected markings which were viewed from beyond the distance of clear seeing.

"The manner in which it was sought to prove the correctness of this theory appeared to me at the time (and still does so) as most weak and fallacious, and certain experiments I made only strengthened that opinion. However, scientific people accepted it as proof.

"In making this experiment schoolboys were seated in rows at different measured distances from a map of Mars, which they were told to copy. The map showed all the well-known dark patches and markings, but no fine lines. About the places where some of those lines should have been, dots, curls, wisps, &c., were inserted at irregular distances, and not always exactly where the lines should have been shown. The inevitable result was that the boys who were too far away to see clearly saw these small markings as continuous straight lines, and so drew them. In the circumstances they could not do otherwise; for if sufficient marks were inserted nearly in alignment, they would necessarily produce the effect of lines.

"These drawings were then acclaimed as proving that the lines seen on Mars were only discrete markings viewed from beyond the distance of clear seeing, and that the network of lines seen and drawn by so many skilled and careful observers of Mars had no actual existence upon the planet. Thus all their work was completely discredited.

"Experiments like these could not possibly prove any such thing, because it would be easy to insert in a map various markings which, when viewed from a distance, would appear to form almost any design that one might choose to depict. Any desired effect might thus be obtained; and I have seen many pictures so formed in which the illusion was perfect. When viewed from a distance each appeared to be a picture of something entirely different
from what was seen when it was viewed from a near standpoint.

"The linear illusion could not arise from a mere multiplicity of faint scattered markings, but all the more conspicuous markings must be in alignment. It seems impossible to imagine that so many hundreds of lines on Mars could thus fortuitously be formed by illusion, and every line be connected to some definite point at each end.

"To argue that because illusory lines can be formed as in these experiments proves that the Martian lines are also illusions is claiming far too much. For instance, if I drew what was actually a map of South Africa, and was so seen at close quarters, yet in consequence of the insertion of numerous small marks and shadings formed a portrait of Lord Blank when viewed from a distance, it would be very far indeed from proving that every map of South Africa was a portrait of the noble lord, or that his portraits were all maps of South Africa.

"Moreover, as I myself saw, some of the boys were so unskilled that they had not even drawn correctly the outlines of the dark patches about which there was no dispute.

"It is obvious that such erroneous and unreliable work as this could not be regarded as evidence upon which truly scientific argument could be founded for the purpose of deciding such a contentious question; yet mainly upon this very slender and unreliable evidence meetings of two of our leading astronomical associations endorsed the illusion theory, and for a long time it held the field.

"M. Flammarion made some similar experiments in Paris, and even inserted spaced dots along the sites of canal lines on the map put up as a copy, yet not one boy drew a canal. M. Flammarion evidently was rather too sparing with his dots and marks.

"A long series of experiments was carefully carried out by Professor Lowell and his colleagues, from which it was deduced that if in any line on Mars there was a gap of sixteen miles in length, our present telescopes would suffice to discover it. It is most improbable that in so many hundreds of lines, several of which are over two thousand miles in length, there would not be numerous gaps over sixteen miles long if the lines were made up of separate markings.

"Yet it is found that every line is perfect in its continuity, and not only so, but uniform in width throughout its whole length, which would be impossible if the lines were made up of separate markings not in alignment.

"The illusion theory may, however, to a certain extent be correct, but this will prove exactly the opposite of what its supporters contend. It appears to have been quite overlooked that as there are so many thousands of miles of canals it is utterly impossible to suppose that the vegetation, which is all that we really see, is continuous and without breaks. It would indeed be most extraordinary if there were not very many long stretches of land which, for some natural or utilitarian reasons, were either bare of vegetation or so sparsely covered as to appear bare when viewed from the earth through a telescope. Some parts of the canals in hilly or rocky ground may pass through tunnels, and thus cause apparent gaps in the lines; or ground may be incapable of bearing vegetation, or purposely left fallow.

"It would, therefore, be no matter of surprise if more powerful instruments should, in moments of perfect seeing, reveal numerous apparent gaps in the lines. So far from proving they were not canals, such gaps are exactly what we should expect to find in connection with canals; and the lines would probably appear as irregular light and dark patches in alignment, because we do not see the canals themselves, but only the vegetation on the land which they traverse. Probably there are also many cases yet to be discovered along the canal lines.

"As I have already stated, it was asserted that the double lines were illusions arising from the causes already mentioned, with the probable addition of eye-strain and bad focussing. Assuming that the single lines are, as it is declared, illusions, we are confronted with the assumption that the doubles are illusions of illusions, and this is more than I can follow, it seems so improbable.

"Professor Lowell has devoted some sixteen years to close and continuous observation of Mars whenever it has been in a position to be observed, and many thousands of drawings have been made, the results being plotted down on a globe. In reply to the statements of occasional observers that the lines cannot be seen, he testifies that they are not difficult to see; and that any one who saw them in his exceptionally good atmosphere, and through his instruments, could have no doubt of their actuality. He rather caustically, but very justly, remarks in one of his books that his many years of personal experience in viewing these lines almost entitle him to an opinion on the subject equal to those who have had none at all!

"The proof of their existence, however, no longer rests only on the corroborative evidence of other observers, for, after years of experiment, Professor Lowell and his staff have succeeded in taking direct photographs of Mars, which show several of the disputed lines. One would have thought that would settle the question, but, although some of the more reasonable of the objectors have been convinced by the evidence of the photographs, many others still maintain their attitude of scepticism, especially those who have not themselves seen the photographs. They declare it to be quite impossible for any such photographs to be taken, because our atmosphere would prevent any photographic definition of fine detail on such small pictures; yet about ten thousand of these tiny photographs were
taken during the near approach of Mars in 1907.

"As I possess a number of these photographs I can testify that they do show some of the lines, and persons who disbelieved have expressed surprise at their excellence. Success was only obtained by means of specially sensitised plates, for the ordinary photographic rays and ordinary plates were found useless, whilst the process of photographing so small and distant a planet is surrounded with difficulties.

"Even when attached to a telescope giving an equivalent focal length of nearly 150 feet, the camera only gives a very tiny image of the planet. The lighting of the small image is faint, but if additional power were used on the telescope to obtain a larger image, then its light must be still fainter, and thus a longer exposure would be required to obtain a picture on the plate. As Mars moves in its orbit and rotates on its axis, and our atmosphere is subject to continual movement and disturbance, any long exposure would result in a blurred picture, which would show no fine detail. So, as a short exposure is essential, only a small picture can be taken. Nothing is gained by any subsequent great enlargement of the picture, because the grain of the film of a quick plate is coarse; and, if enlarged, this also blurs out the detail.

"Having regard to all the difficulties which had to be surmounted, it was a great and undoubted triumph to secure detail on such tiny photographs of this distant world. As time goes on improvements will probably be effected and still better pictures secured; but enough has now been accomplished to prove that the lines cannot be illusions, but really exist upon the planet. If the eye can be deceived in this respect, the camera cannot.

"When Professor Lowell first took up the work of Martian observation only 113 lines had been discovered by Schiaparelli, but the number has gradually been added to from time to time, as the result of the work done at Flagstaff Observatory and elsewhere, and has now reached a total of considerably more than 600, the lines forming a fine network extending all over the planet.

"Mr. Slipher, who accompanied Professor Todd's expedition to Alianza in Chili, at the opposition of 1907, together with the observers at Flagstaff, discovered no less than 85 new canals, including some doubles, nearly all being in the more southern portions of the southern hemisphere.

"In addition to the discovery of so many fine lines, we also owe to the acumen of Professor Lowell a reasonable explanation of what they really are. Schiaparelli termed them 'canali,' an Italian term for 'channels,' but, popularly, this soon became corrupted into the term 'canals,' and this has turned out to be a much more appropriate word than such corruptions usually are.

[Illustration: From a Globe made by M. Wicks Plate IX
MARS. MAP II
The Solis Lacus is seen as an oval patch near the top, and many long canals, some double, are shown. A very large proportion of the area on this map is desert land.]

CHAPTER XI
THE GREAT MARTIAN CONTROVERSY (continued)

"As the result of very long continued and systematic observation of the lines on Mars, together with carefully plotting them down on a globe, it was found that every line was continuous, uniform in width, and went straight from one definite point to another, not one breaking off in open space. Moreover, on being tested, nearly all were found to be arcs of great circles, and therefore the shortest possible lines which could connect any two points on a sphere. This fact strongly supports the idea that they are not natural but artificial formations. For a long time the lines were only seen on the red, or lighter, parts of the planet, but in 1892 an expedition was sent from Harvard Observatory to Arequipa, in Peru, for the purpose of observing the planet under very favourable conditions, and this resulted in important discoveries. Professor W.H. Pickering, who accompanied the expedition, was fortunate enough to observe that the canal lines extended over the dark or blue-green portions of the disc; and later observations have proved that this is the case all over the planet, and the lines are visible from pole to pole.

"These observations also led Professor Pickering to the important conclusion that all the dark areas were covered with vegetation, and that the bright or red areas were deserts, the colour of the latter being exactly that of our deserts when viewed from a great distance. Herschel's idea had been that the red areas were land covered with vegetation of a red colour, and that the dark areas were seas.

"It was, however, now quite clear that permanent lines in such numbers and length could not exist in seas; and other observations have demonstrated that, instead of appearing smooth and uniform as water would, these areas are full of detail and variations, and that they pass through all the changes of colour, according to seasons, that land covered with vegetation does upon our earth. In the winter time, when the land is fallow, it appears brown or chocolate colour; in the spring, the time of early vegetation, it becomes a pale blue-green tint; as the season advances the blue-green becomes darker; whilst in the autumn it tends to a light brown, and at length changes into chocolate colour in the winter. This has been carefully noted time after time when the planet has been in a position to be observed; and the same sequence of change--which can only be associated with vegetation--has always
occurred.

"It may, therefore, now be accepted as a proved fact that the dark areas are land upon which vegetation grows, ripens, and dies away according to the seasons of the Martian year.

"Professor Pickering also made another discovery, viz. a large number of isolated, round, darkish spots, most of which occurred where canal lines joined or crossed each other. Some of these had been seen much earlier by other observers, but Professor Pickering was the first to see them in large numbers and call attention to them. He termed them 'lakes,' but later discoveries from continued observation showed that they were not water, and they were then given the name of 'oases.' Some are seventy or eighty miles in diameter, and nearly two hundred are now marked on the maps. They mostly occur in certain definite positions—in the point where single canals join or cross each other, or, in the case of double canals, between the two lines. It has been noted that they undergo the same seasonal changes as the dark areas do, but only as regards the outer portion of the circle, which gradually fades away in the latter part of the Martian year; whilst the central portion becomes fainter but does not disappear.

"Of course it was at once declared that these oases were illusions which would naturally be seen where two lines crossed each other and were viewed from a great distance. But they only occur in some cases at such crossings, and there are many junctions without any oases. Moreover, they are also seen between the double canals where there are no junctions nor anything which could give rise to illusion.

"At Flagstaff Observatory it was also noted that the canal lines themselves underwent seasonal changes. Those viewed during the winter season were always so faint as to be scarcely discernible, but at the period when vegetation would naturally begin to grow they became more easily visible, and still more distinct as the season advanced.

"Then Professor Lowell announced his great conception, which has given rise to so much controversy, and has also been much misunderstood and misrepresented.

"Briefly, his conclusions were as follows:--Science teaches that a small planet will become cool and develop life much sooner than a large one. Similarly a small iron casting will become cool in a few days, whilst a large one will be many weeks or even months in cooling. A small planet will also develop more rapidly, and reach its final stage when it will be incapable of supporting life, very long before a larger planet like our earth will have reached that stage. Applying this to Mars, a much smaller planet than our earth, it is scientifically reasoned that Mars has passed through nearly all its stages and is approaching its last. It has lost much of its atmosphere, all its large bodies of water, such as oceans or seas, and, as regards the land, that has become levelled by erosion, and about five-eighths of the whole area has become desert.

"Science also shows that in such circumstances rain would cease to fall over the larger part of the planet, but the water vapour in the air would be carried by natural circulatory currents of air to the polar regions, and there deposited in the form of snow or hoarfrost, thus forming a large snow-cap at the north pole in one season of the year, and a still larger snow-cap at the south pole in the opposite portion of the year.

"These snow-caps would begin to melt in the spring as soon as the tilt of the planet brought the pole to the position where the sun would take effect, and would continue during the early summer. As there is no permanent glaciation on a planet which has lost its water, the snow-cap would melt to a very large extent, and the resultant water must go somewhere.

"The inhabitants of the planet could not exist without water, and their land would become entirely desert unless supplied with moisture. It will, therefore, be seen that the only thing possible, as a means of self-preservation, would be for them to make channels to carry the water in the most economical way from the poles to the parts where it was needed. Unless they found a means of doing this death stared them in the face. What greater incentive could there be!

"This is what Professor Lowell is convinced has actually been accomplished upon Mars, with the result that there is a network of canals all over the planet by which water is conveyed from each pole and carried across from one hemisphere into the other. The lines seen show where the canals are, but not the canals themselves, because they are too narrow to be seen. The lines really are broad bands of vegetation irrigated by the canals which run through them, hence the seasonal changes which have been noted in their colour.

"All this seems very reasonable, deduced as it is from scientific fact and from the many different things which have actually been seen and confirmed by many thousands of observations, but it has met with the most bitter opposition on the part of many astronomers, both professional and amateur. Theory after theory has been brought forward with the object of disproving the existence of the canal lines; some of these, such as eye-strain, diplopia, bad focussing, illusion, and imagination, have already been mentioned.

"Proofs of the reality of the lines having become too strong for most of the objectors, they then turned their endeavours to the overthrowing of the theory that the lines were canals, suggesting that they were all of natural origin.

"Amongst these suggestions it was stated they were edges of shadings, natural growths of long lines of trees
and vegetation, cracks in the surface of the planet or foldings caused by contraction, trap-dykes, &c., but not one of these suggestions will bear investigation. I have already pointed out the impossibility of shadings having straight edges for thousands of miles in so many hundreds of cases. It is equally impossible to imagine natural growths of trees and vegetation in bands of uniform width and thousands of miles long, and nearly all forming arcs of great circles.

"They cannot be cracks, for they are of uniform width throughout their length, and always run direct from one definite point to another, no matter how distant apart they may be.

"Cracks, such as we see on the moon, though sometimes straight, are usually wide near the centre of disturbance which caused them, and narrow off to a fine point, and often end anywhere out in open space; moreover, they are usually very irregular in width, and take a zig-zag course instead of a straight one. This, as I have said, is not the case with a single canal line on Mars. If they were cracks, some at least would be irregular and end in open space. The same remarks apply in the case of foldings or ridges.

"The oases, once declared to be illusions, were then said to be large openings in the soil at the junctions of the cracks; or they might be craters, and so on. But this does not account for the appearance of the oases between twin canals, or the systematic manner in which the canals effect a junction with the oases. Again, therefore, the theory fails to fit the known circumstances of the case.

"Dr. A.R. Wallace rather favours the idea of natural cracks or faults in the surface of the planet; and suggests that the outer crust of Mars may be a crystalline or similar formation which would lend itself to the production of numerous cracks in the surface. He points to a few cracks and faults in the earth's surface, all of small size, as confirming this idea; but the cases he adduces only seem to prove that there is on our earth absolutely no natural formation which can in any way properly be compared with the lines seen on Mars. Moreover, there seems to me no ground whatever, beyond the needs of the theory, for supposing that the crust of Mars is of a crystalline nature, or such as would predispose to the formation of cracks. On the contrary, all the evidence is against it--the existence of vegetation in some parts, the general appearance of the red portion, and the large clouds of sand which have been observed, all being indicative of a sandy formation, in the red portion at least.

"The theory also fails to take into consideration the most important point of all, viz. that every canal runs direct from one definite point to another, perhaps over two thousand miles distant. In very many cases numerous lines connect with one small area, or even with one point. The Lucus Ascræus has no less than seventeen of these canals connecting with it, and appears to be a kind of Martian Clapham Junction.

"The deserts on Mars serve the same purpose as our seas, as lines of communication may be established anywhere across them. A map of Mars, showing the canals converging towards some one part, bears a great resemblance to our maps showing the courses taken by vessels from different parts all converging upon one seaport.

"Much has also been said about the widths of the canals as rendering them impossible of construction, so let us consider how wide they are.

"The lines seen vary from two or three miles up to nearly thirty miles in width; but there are only one or two of the latter, and the majority are five to ten miles wide. Notwithstanding Professor Lowell's repeated statements that they represent bands of vegetation, these widths are often referred to as the widths of his canals. I have frequently seen them described as 'fifty miles,' a 'hundred miles,' and even as 'hundreds of miles' wide. These exaggerations usually appear in newspapers and journals, and evidently arise from insufficient knowledge on the part of the writers.

"Owing to the small gravitation upon Mars, the work of digging canals would be extremely easy upon that planet (even assuming the Martians to be without machinery) as compared with the same work on our earth; but there is neither necessity nor reason for the construction of such enormously wide canals as those mentioned. Moreover, it seems to me that very wide canals would defeat the object for which they were constructed; and Professor Lowell does not regard the widest lines as being canals. They may be remains of natural channels or arms of the seas, as they do not run so straight as the canal lines proper.

"Our people," I remarked, "have argued both against the possibility of constructing such canals and of forcing water along them, because, as they say, none of our engineers would be able to accomplish such work. I certainly have more confidence in the skill and capabilities of our engineers, and doubt not that if they were required to solve a similar problem they would overcome all difficulties and carry out the work successfully."

"I'm with you there, mon!" exclaimed M'Allister.

"I may remind you," I proceeded, "that when steam navigation was first mooted, it was confidently asserted that no steamship would ever succeed in crossing the Atlantic Ocean, and I can remember when it was learnedly demonstrated that it would be quite impossible to construct a canal across the Isthmus of Suez! How small the prophets must have felt when the work was accomplished!

"I am afraid it is usual to take a very limited view of all such matters, and we judge of them entirely from what
we know ourselves, never looking ahead, as it is considered unscientific to go beyond our own knowledge. Because something may be quite impossible to us, it does not follow that it is impossible to more advanced people.

"Think how many great scientific facts which are quite commonplace at the present time were unknown and undreamed of even so recently as our grandparents' time! Who then can forecast what may be possible five hundred years, or even a century hence; and who will be bold enough to fix a limit to the possibilities of science! I freely admit I am an optimist in these matters."

"I think, Professor," said John, "that your view is really the more scientific of the two. While it may not be possible accurately to forecast all the facts, intelligent anticipations may logically be formed from a survey of our past history."

Proceeding, I then remarked, that "Another discovery made at Flagstaff Observatory was that at the ends of certain canals, where they joined the dark areas, were small V-shaped dark markings which Professor Lowell has termed carets. From their occurrence in these positions only, and from his observations of the peculiar and extremely systematic manner in which the canals, especially the double ones, run into the carets, he has concluded that they must serve some special and important purpose.

"We have been told upon high authority that the carets are illusions, and could not possibly be seen, as the planet is so distant from us. But the fact remains that they have frequently been seen and drawn; they always appear the same, and are never seen except in connection with canals which join dark areas. These dark areas, I may say, are believed to be the beds of ancient seas, from which the water has long since departed.

"In connection with all these disputed lines and markings it has often been urged that though they are seen through comparatively small telescopes they are not seen when a very large instrument is used; and it has also been said that observers, knowing what they wished to see, simply imagined they did see it. We have, however, abundant proof that both these arguments are unreliable and incorrect.

"It is a well-known fact that when a faint object has been once seen through a telescope, others are able to see it through a smaller instrument. This was the case with the satellites of Mars, which have been seen with much smaller instruments than that used to discover them.

"The fact that such objects are really seen is proved by the observer marking them on his drawing in their correct position, although they may have moved from the point at which they were originally seen.

"I will give you an illustration of the ease with which it is possible to overlook something that should be clearly visible to you, yet it is not seen by you until your attention is called to it by some one else. Almost every one has had some such experience:\--

"You may have on the front of your coat a small stain, or grease-spot, in a position where you could plainly see it, yet might wear the coat for days or even weeks in complete unconsciousness of the existence of the stain until some one pointed it out to you. After that you cannot look at the coat without seeing the stain, and it becomes so persistently obtrusive that you are compelled to have it removed. There is, however, no imagination about your seeing the mark."

John here said to me: "Professor, I noticed you said that many who do not believe in the actuality of the lines and markings on Mars frequently refer to the fact that, while they are stated to be seen through small telescopes, they are quite invisible through a very large instrument, and they regard this as proving that the lines or markings do not exist. Is there not something in this argument?"

"Well, John," I replied, "the argument sounds not only plausible, but reasonable, and inexperienced persons might use the argument, believing it to be a sound and good one. I must, however, confess that I have been surprised to see this argument used by persons who must surely know that there is no weight in it at all.

"It is well known to all practical observers, and indeed to all who have studied optical matters, that, for several reasons, very large telescopes are quite unsuited for the observation of fine planetary detail.

"The real advantage of these enormous instruments lies in their great 'light-grasp,' which enables observers to see very faint points of light, such as small satellites of planets, faint stars, double stars, distant comets, or nebulae, which could not be seen with a smaller instrument necessarily having less 'light grasp.' Yet this very excess of light, which is the great advantage of a large instrument, is one of the things that spoils the definition of faint planetary details; it drowns them all out, or 'breaks them up.'

"Again, these large instruments are much more liable than smaller ones to what is termed 'chromatic' and 'spherical' aberration; and this also is detrimental to definition. No very large refractor is entirely free from these defects.

"Another objection is that, in using such large and long-focussed instruments, a much higher power must necessarily be employed than in the case of smaller instruments. This high power magnifies all the little movements and disturbances in our atmosphere to exactly the same extent as it magnifies the object looked at, with the result that these disturbances blur out all fine detail. The canal lines on Mars could never be seen in such circumstances. If
the object were looked at through a smaller instrument, with lower power, it might be fairly well seen, for the atmospheric disturbances would not be magnified to such an extent as to spoil definition.

"There are very few nights in the year when these immense instruments can be used to advantage on the planets, whilst a smaller instrument might define well three or four nights out of every six. It is on record that the user of Lord Rosse’s great reflector stated that there were only about three nights in the year when its best definition could be obtained; and its use has produced very meagre results, compared with what had been anticipated.

"It is also almost universally recognised that in using these great instruments, whether for photography or for the visual observation of fine detail, it is absolutely necessary to stop down the aperture to a very large extent, by reducing it to about 12 inches in diameter or even less. The big telescope is thus really converted into a small one of long focus.

"There is, in addition, the acknowledged fact that nearly every discovery of new detail on planets has been made with a comparatively small telescope, although the same objects may have been under constant observation for years with big telescopes. The new detail was never noticed until after it had been seen with a smaller instrument, and perhaps only then when atmospheric conditions were unusually good.

"As an instance, I may mention that the faint ‘crape ring’ of Saturn was seen by Dawes when using an 8-inch aperture to his telescope; yet it had never been discovered with the large instruments, although the planet is one that is under constant observation when in a position to be seen.

"I could give innumerable instances of similar cases, but enough has been said to show that because some object cannot be seen in a very large telescope, it is no proof at all that the object does not exist.

* * * * *

"Amid the chaos of varied, and often self-contradictory, theories respecting Mars—some abandoned by their own authors; others in which facts and conditions had to be assumed for which there was not only no evidence, but actual disproof by many recorded observations—Professor Lowell’s conceptions stand out clearly and boldly.

"They are all founded on the results of prolonged and systematic work in the observation of the planet, not only by himself but by numerous colleagues—work in which many of his critics have had little or no experience under favourable conditions. His conceptions fit in with observed facts with all the accuracy of the pieces in a child’s picture puzzle; whilst his logical deductions are supported and enhanced by his wide knowledge of physical science and planetology.

"Yet, as I have both heard and read, his views and discoveries have been described as ‘sensational,’ ‘fanciful,’ ‘fairy tales,’ and by other terms which I would rather not quote.

"Underlying some of these objections there seems to be an idea that some reason must be found for opposing anything and everything which would tend to indicate the possibility of intelligent life existing upon any other planet than the earth; although it is difficult to understand why such a possibility should be so abhorrent. It is a view that does not commend itself to me, but I need not say more on that point.

"Nicola Tesla, the great electrician, is, however, convinced of the existence of life upon Mars, and he has expressed in very emphatic terms his opinion of the opposite view, which, however, I refrain from quoting. He says that Mars must have passed through all terrestrial changes and conditions, and that the whole arrangement of the canals, as depicted by Professor Lowell, would seem to be artificially designed. He then goes on to state that he has discovered electrical disturbances on the earth which must have come from Mars and no other planet.

"In the treatment he has received from some of his smaller critics (whose vehemence is usually in inverse proportion to their knowledge of his work and writings) Professor Lowell has had an experience similar to that of many other observers who have done good work.

"If an observer be blessed with the happy combination of good eyesight, a good instrument, and favourable atmospheric conditions, and publishes writings and drawings showing that he has seen something which has not previously been observed, he at once becomes a target for captious critics who seem to be under the impression that all astronomical knowledge begins and ends with themselves, and that anything they cannot see does not exist. It matters not that the observer attacked may have given months to particular observations where his critics have only spent a few hours: he is told that his drawings are incorrect and do not represent the planet; that they may be works of art, but do not represent facts; that he possesses a very vivid imagination, and so on. This procedure may be persisted in until at last the victim either turns and rends his critics or ceases to publish his drawings or records, to the great loss of many others who take an intelligent interest in his work.

"Professor Lowell’s telescope is over 32 feet in focal length, and has an object glass of excellent quality 24 inches in diameter, the work of the celebrated Alvan Clark. Thus, whilst not one of the giants, it is not exactly what would be termed a small instrument, and few indeed of the critics have anything approaching it in capacity, while none enjoys the advantage of such ideal conditions in the situation of his observatory.

"I was therefore much amused in reading an effusion by one critic who, in discussing the question of the canal
lines, remarked that he could not accept 'these one-man discoveries,' oblivious of the fact that they are the discoveries of many observers. He then very naively gives the illuminating information that his astronomical experience is confined to the 'observation' of the moon for about six months, by the aid of a 1-1/4-inch hand-telescope! Surely, when confronted with a critic of such vast experience and so wonderfully equipped, Professor Lowell must retire discomfited from the field!"

At the conclusion of my remarks both John and M'Allister expressed their thanks, saying that "Now they were informed as to the points on which our scientists were not agreed, they would look forward with still greater interest to our arrival at our destination, for they were as anxious as I was to solve the mysteries of the red planet."

CHAPTER XII

WE ARE MYSTERIOUSLY PREVENTED FROM APPROACHING MARS

The days then passed uneventfully until at last the long-looked-for day arrived, and on the 24th September we were so close to Mars that we hoped to be able to land on the planet by two o'clock in the afternoon. We made ourselves a little sprucer than usual, as we wished to do credit to our own world; and M'Allister wore his overalls to protect his clothes, although our machinery was not nearly so messy to handle as steam-engines usually are.

We had already examined our three machine-guns so that they might be in readiness for any emergency, if some of the ideas of which we had read as to the probable ferocity of the Martians should prove correct. It had, however, been definitely agreed between us that the guns were only to be used as a last resort to defend our lives against a wanton attack, and were to be kept out of sight until they were really required. My own conception of the Martians was, however, a very different one, though I thought it quite right to be prepared for anything which might happen.

As Mars was only about twenty-five miles distant, its surface details could be fairly well seen through the clear thin atmosphere; and, with the aid of a glass, one question at least was definitely settled—the numerous lines of vegetation were fairly continuous; but there were no large canals to be seen, though we thought we could trace some narrow ones.

We could also see several rapidly moving specks in the sky, which, we suggested, might be air-ships of some kind; but they were so far off and indistinct, that we were unable to arrive at a definite conclusion.

Our speed having been gradually reduced, we were now only moving at the rate of twenty-five miles an hour, and it was therefore time to decide on a landing-place. John and M'Allister pointed out a conspicuous spot not very far from the centre of the visible surface of the planet, John remarking that we should be about right if we landed there, because several canals converged to it, and it must, therefore, be a place of some importance. On looking at the map we found that it was marked as the Nodus Gordii, or "Gordian Knot"; so, really, it seemed an appropriate landing-place for travellers who were desirous of solving mysteries.

"Very well, then," I said, "we'll land there if you like, but I had rather a fancy for a different spot, which is on the Sinus Titanum. It is that place over there, near the point where the vegetation curves down in both directions," I remarked, as I pointed out the spot.

"Your place is rather nearer to the equator, and is probably pretty warm; but really it does not matter where we land so long as we arrive on the planet. Your votes are two to my one; so, as you have a thumping majority, go ahead, M'Allister, for the place you have chosen! We will see whether we can cut the Gordian Knot, if we cannot undo it!"

[Illustration: From a Globe made by M. Wicks Plate X
MARS. MAP III
Sirapion," the landing-place of the "Areonal," is shown just above the point of the shaded portion near the top. The "Nodus Gordii," where John wished to land, is seen between the double canal just above the Equator, on the left-hand side of the map.]

He accordingly directed his course towards the chosen spot; but we had not proceeded very far before everything below us suddenly disappeared, being quite blotted out by something of an ochre tint, which entirely obscured our view of the country.

"Professor," exclaimed M'Allister, "what is the matter? I cannot see where we are going!"

"I can guess what it is," I replied; "we have run into one of those sand-clouds I told you of the other evening, and until we get through, or it passes away, we shall see nothing else. Perhaps we had better go on very slowly."

We went on accordingly, but instead of our getting through it, the cloud seemed to become denser and denser. However, we still pressed on, and, after what seemed quite a long time, we emerged into somewhat clearer air, although there was still a thin yellow cloud below us. Our course had been well maintained, for we seemed to be within ten miles of our destination, which we could just make out through the thin dust-cloud.

Presently M'Allister called out to me, "Professor, I don't know what is wrong, but the machinery is slowing down so much that I am afraid we shall soon come to a dead stop! I have switched on more power, but it does not
"Well, try a little stronger current," I suggested; "but be careful not to overdo it, or we may land upon Mars more suddenly than we shall like."

He tried this, but we had not moved more than a hundred yards when he found that farther progress was impossible. So here we were, only a few miles from our destination, yet prevented by an impalpable and unknown obstacle from reaching it!

We consulted together, but could find no solution of the mystery of this invisible barrier to our progress. Then John suggested that, as we could not go straight on, we should try a different course. So M'Allister altered our course a few points, and once more put on the speed power, only to be brought to a standstill again after a very short spurt.

"My word!" he exclaimed, "I'll not be beaten like this. I've driven an old iron tramp-steamer through scores of miles of thick seaweed out in the tropics, although the machinery was almost worn out and the engines leaking at every joint. Here goes for full speed ahead!" he cried; and, so saying, he switched on full power, quite heedless of my shout of "Do be careful, M'Allister, or we shall all be smashed to pieces!"

"She's got to go!" he replied grimly, "smash or no smash! I never was beaten yet when pushing my way through obstacles, and I'm too old a hand to be beaten now!"

However, he found he was beaten this time, for although he switched on the utmost power, it refused to give any evidence of its existence, and we had to rely on our neutral power in order to maintain our position in the air; though, as events proved, we could not have fallen.

The excitement and tension of the work had thrown M'Allister into a profuse perspiration; and, as he stood moodily mopping his brow with his handkerchief, I heard him muttering and swearing softly to himself. His blood was evidently up, for he made another desperate attempt to get the Areonal to move forward, wrenching his switches with angry jerks, but it all proved labour in vain.

"Well, what is to be done now, John?" I asked; "we have tried two courses without any effect!"

"I would suggest, Professor, that we should go up higher," he replied, "so as to enable us to try again from another altitude, then, perhaps, we may pass above the obstacle."

"A good thought that, John!" I cried. So up we went, the machinery working all right now, and our spirits rose as we soared higher; but, alas! after rising a few hundred yards, the machines began to slow down, and soon stopped altogether.

"The de'il himself must be taking a hand in this business!" exclaimed M'Allister, "for this beats the worst experience I ever had! We can't go up, we can't go down, and we can't go forward! Whatever can we do, Professor? You're a scientific man; can't you suggest something which might help?"

"It's a profound mystery to me, M'Allister," I replied, "but we certainly do not want to remain hung up in space, so I suggest you should try several different courses. Surely, in some direction we shall find a way out of this, and get to our destination."

This plan was tried, M'Allister doggedly setting his course first in one direction, then in another, and trying to put on enough power to force the vessel along; but time after time we came to a standstill after moving very slowly for a short distance.

"It looks as though we were to be hung up here indefinitely," said John. "We do not seem able to get through this mysterious obstacle, whatever it may be, or whatever course we may try."

"Oh, we've not tried all points yet," I said. "We must not give up now we have got so close to the object of our trip. Take a fresh course, M'Allister."

He took a fresh course, and another after that, but with exactly the same result.

I had never seen M'Allister in such a perturbed state before; he actually trembled all over with the intensity of his feelings, and his face had an expression of grim determination such as I should imagine might be seen on the face of a soldier at bay with his back to a wall, and fighting for his life against overwhelming numbers of assailants.

"My word!" he exclaimed, "yon's Mars, and here's us, but it doesn't seem as if we should ever come together. Losh mon, bonnie Scotland for ever! Here goes for another try!" and he switched on the current again with a vicious pull.

We watched the machines with intense anxiety, wondering whether this new course would be any better than the others we had tried--whether the machines would keep moving, or slow down and stop as before.

No, we kept moving; and soon it was evident we were gaining speed rapidly.

"Hurrah, hurrah!" I cried in exultation. "We are doing it this time. Slow down, M'Allister, we are going too fast now!"

"Scotland for ever!" he shrieked. "That did it, Professor!"

Strangely enough, John, usually the most excitable member of our party, was the calmest of the three, and simply remarked quietly, "We've done it this time."
Yes, we had indeed done it this time, but our attention had been so taken up with our anxious watching of the machines that none of us had noticed the direction we were taking.

We had passed entirely through the last remnant of the sand clouds, and it was now beautifully clear, the thin air enabling us to see over a very large area of country. For the first time since leaving the earth I now opened one of the doors very slightly indeed, and tested the effect of the real Martian atmosphere.

It seemed to us rather sharp, with a taste something like that of a tonic medicine, but we were all able to breathe it without any serious inconvenience, though at first it made us gasp.

Being assured there was no danger, I stepped out on to the platform and looked down, then started back in utter astonishment, exclaiming to the others, "Why, look! look! See where we are!"

CHAPTER XIII

WE ARRIVE ON MARS AND MEET WITH A STARTLING SURPRISE

On hearing my excited exclamation, John and M'Allister at once stepped on to the platform and, having looked down, were as much surprised as I was, for lo! we were heading direct for the very spot which I had previously told them it was my fancy to land upon, and we were not three miles away from it. We also saw a large town or city close by our proposed landing-place.

"One would almost imagine you were a magician, Professor," said John, "and that this affair was all your work, and intended to secure a landing only where you thought proper."

"No, John," I answered, "I had nothing to do with our coming to this spot, and it is still a mystery to me how it was we were not able to continue on our original course. The Gordian Knot was too much for us after all."

"Well," John said, "it does not matter so long as we succeed in landing somewhere.

"By Jove!" he exclaimed suddenly, "look through the glass over there," pointing forwards as he spoke. "I can see enormous crowds of people evidently watching our vessel."

It really was so, for, as we drew nearer and nearer, we could plainly see an enormous multitude of people who seemed to be drawn up along the four sides of an immense square open space, and they were all looking upwards towards the Areonal.

"Go and have a wash," I said to M'Allister, who had become quite grimy from the perspiration occasioned by his exciting work just previously. "We will see to the machines, if necessary. You must not descend amongst such an assembly of the natives with dirty hands and face."

"No," he replied, "Kenneth M'Allister will not disgrace old Scotland by doing such a thing as that."

"Look sharp, then, M'Allister," John called after him; then, peeping down again, he pointed to the farther side of the square, saying, "Look, Professor, I can see some pavilions over there, and a large dais affair, with a canopy over it! Look at the flags and banners too!" he cried; "and there seems to be a large number of officials round the dais. Perhaps that's the Emperor of Mars sitting there!"

"I doubt that, John," I replied; "but probably he is some very important personage. How singular," I added, "that this spot which I selected should be the only one toward which we were able to steer our vessel!"

"Well, we shall soon know something about that, I expect," replied John.

"Heh, mon!" exclaimed M'Allister, who had now rejoined us, looking spick and span, and with his face shining from the fresh application of soap and water, "I believe they are all down there watching for our arrival."

"It really looks like it," I said; "but how could they have known we were coming? So many scores of thousands could not have been gathered together at a few minutes' notice. Well, you can see to the machines, and take us gently down into that square."

"Professor," remarked John, "those people are not the big, ugly giants, nor the strange animals which some of our folks have imagined the inhabitants of Mars to be. They appear a bit tall; but, so far as I can see from here with the glass, they are a fairly good-looking lot. They seem quite friendly too," he added, "and we shall not require those guns after all."

"No, certainly not," I replied, for now we were close enough to see that the people were waving their hands towards us, and that children were waving bright-coloured flags. Just then a welcoming shout came up to us from below, and we made friendly signs to the people in response. Then they cheered us again and again, so we knew we could safely descend amongst them.

With skillful manoeuvring M'Allister soon brought our vessel down near the centre of the square, and we were all ready to step out. John judiciously, but rather reluctantly, ceased smoking and put away his pipe, not knowing what kind of reception he might have if he appeared amongst these strangers with a pipe in his mouth.

A line of officials was arranged in a curve on each side of the dais, and three of them came towards us from either side, making signs of friendliness and welcome.

Seeing that we had nothing to fear, we at once stepped on to the ground and advanced to meet them. In spite of weighted boots, which we had taken the precaution to wear, we had some difficulty in walking properly; the
gravitation being so much less than on the earth we had an irresistible tendency to lift our feet much too high at every step we took.

As we met, each official made a very graceful and courteous inclination of his body, and we all bowed in response. The first couple of officials then conducted me towards the daïs, and I could now see that they were very much taller than myself, being quite seven feet nine inches in height. They were, however, so splendidly proportioned that at first their stature had not impressed me as being much above our ordinary standard; whilst their features were most beautifully formed and regular, their complexions being very clear and fresh-looking.

One great peculiarity I noticed in all around us, and that was a peculiar soft and liquid glow in their eyes, which seemed to light up the whole of their features, adding greatly to their beauty and nobility of appearance.

As we approached the daïs, its occupant rose and came down the steps to meet us on the level ground. Whatever his rank, he was a most magnificent figure, his whole bearing being serenely dignified, majestic and impressive; whilst the expression upon his radiantly glowing countenance was benign and intelligent beyond anything I had imagined or anticipated, though I had expected much.

What followed, however, was surprising beyond measure, and it was startling and electrifying in the suddenness with which it came upon me; for, as this splendid being moved towards me with stately steps, and both hands outstretched in greeting, he said to me in English, "Welcome to Mars! welcome to my country, oh stranger from a far-off world! In the name of the whole people, I bid you welcome to our world, which we call 'Tetarta,' and to this city of Sirapion!"

CHAPTER XIV
I MAKE A MOST AMAZING DISCOVERY

I was so utterly taken aback at this most unexpected greeting in my own native language by one who was apparently the chief inhabitant of this other world that I found it very difficult to collect my thoughts and make a suitable reply.

I know I stammered out something; but, really, the more I tried to speak coherently the more confused I became. This was indeed a very bad beginning for a visitor from a distant world who wished to show to the best advantage in such an august presence, and before such a great assemblage of the people; but it is useless to attempt to conceal the truth, however humiliating it may be. Observing my embarrassment, however, the high personage smiled upon me pleasantly and, after saying a few reassuring words, he gave a signal to the two officials, so we moved aside for John and M’Allister to approach him.

The people, who had remained perfectly silent during this interview—if it can be dignified by that term—now burst out into a volume of acclamation; but I must say that never upon our earth had I seen a multitude so orderly. Everything seemed to be arranged and carried out with military precision, yet I saw no one with arms or weapons nor anything indicating the presence of either military or police. A few individuals, indeed, seemed to be giving some directions; but whatever movements were made by the people were accomplished without crowding, pushing, or jostling.

The Martians, too, evidently possessed fine artistic tastes and ideas, as well as excellent judgment for colour effects. Colour was apparent in great variety in the dresses of both sexes, yet nothing looked tawdry or overdone; for the whole mass presented a perfect and harmonious blending of tints; while the designs on the banners were most artistic and effective, many of the devices being of an astronomical character.

Whilst I was thus engaged in observing the people, one of the officials respectfully saluted me and made a sign that I was to accompany him. I bowed and turned in the direction he indicated, when he conducted me to one of the pavilions near the daïs, motioned me to pass through the doorway, then, gravely saluting again, turned and went away.

On entering I found the pavilion fairly large and chastely decorated, but it had only one occupant, who rose and saluted as I entered. He was a splendidly built young man, with a radiant countenance, and when he advanced towards me with both hands outstretched, as the other high personage had done, I noticed the same peculiar soft and luminous glow in his eyes that I had observed in the other Martians.

As he took my hands within his, the young man looked straight into my eyes, his own beaming with pleasure: then said in English, "Welcome, sir, most welcome to Mars!"

As he stood gazing at me and I at him, something in his features struck me as being familiar. Where had I seen a face like that before? Then suddenly my thoughts flew back to a long-buried past. Gracious heavens! I must be dreaming—it can never be! Still he gazed intently into my eyes, seeming to penetrate my very soul; then I saw his expression change into one of ineffable tenderness, and a beautiful smile rippled over his face.

All doubt was now at an end; this was indeed no dream, no hallucination. I had seen that face before—seen those features in a less glowing and glorified form than that in which they now shone upon me, and I knew where I had seen them!
Something, which I had vaguely imagined might just be within the bounds of possibility, was now proved to be not only possible, but an accomplished fact.

Memories of the past rushed over me like swelling waves, and I seemed swept away by their surging billows. I gazed and gazed, in almost incredulous wonder, at that glorious being who stood there regarding me with an expression of ineffable affection; and my heart seemed to melt within me as the re-awakened love for a long-lost form stirred every fibre of my body and thrilled me through and through. Then, overwhelmed by the intensity of my emotions, I threw myself into his arms, crying aloud, "Oh, Mark! my boy! my boy!"

CHAPTER XV
WHAT IS IN A NAME!--THE STORY OF Merna

Yes, this glorious being was indeed the son whom I had lost on the earth! It would be utterly impossible for me to describe the pathos and affection of that meeting with one whom I thought had passed for ever out of my present life, or the intensity of my emotions and the overflowing gratitude with which I gazed once more upon the face of my lost loved one, now so unexpectedly and wonderfully restored to me. Such emotions as I then experienced are beyond description by any pen or any tongue.

Whilst I was thus overwhelmed with emotion, my son exhibited the most dignified calm; yet his words and sympathy were as tender as those of a mother soothing a suffering child. Having at last brought me into a calmer state of mind, he said: "Yes, I, who am now called Merna, am indeed he who was once your son upon the earth; and I am indeed he who in heart and soul is at this moment as truly and affectionately your son, though living in another world, possessing another body, and called by another name!

"Oh, how I have yearned for this meeting, and through what long years have I studied and striven to bring it about!"

"You have brought it about, my boy!" I cried in amazement. "Why, how was that?"

"It is too long a story to narrate now," he replied, "for we have a duty to perform, and must not stay here. We must now show ourselves to the people outside, who have long waited to greet you! You shall hear more to-night; but, in the meantime, do not make known my identity to my old friend, John, until after I have left you. You may tell him then and prepare him for our meeting to-night."

I noticed when he was speaking that sometimes he lapsed into a phrase or two of the Martian language, and that his English was spoken as it would be by a foreigner not fully acquainted with our language.

Before we left the pavilion I asked him to tell me what office was held by the high personage who had occupied the dais on our arrival, and he explained that "he was Soranho, the present ruler of Mars!"

"Emperor or King?" I inquired.

"We have neither of those dignitaries here," he answered. "He is the Chief of the General Council of the entire world of Mars, elected to that office for a certain term by the whole body of the people. But now we must not keep the Chief waiting any longer."

So we passed out together to join the Chief of the Council on the dais, and, standing near it, we saw John and M'Allister, who were gazing around with intense interest upon the assembled multitude.

The Chief advanced to meet us, and greeted me with even more cordiality than at first, if that were possible; then he said a few words of congratulation to Merna, and conducted us to the front of the dais.

The people were now all massed together before the dais in long parallel lines, or ranks, and, as the Chief brought me forward, there came a tremendous shout of welcome from the multitude.

The Chief made a brief speech in the Martian language (which of course neither I nor my two companions understood), in which, as Mark afterwards explained to me, he gave a short account of how I had arrived there from the earth with my two colleagues--the first inhabitants of that world to set foot upon Mars! He told them that my coming was all owing to the devoted love and influence of Merna, who in a former life upon the earth had been my son.

What Mark did not tell me was that the Chief had spoken in terms of very high appreciation of the talents Mark had displayed, and of the success which had attended his great endeavour to exert his influence over that immense distance of space which separated the two worlds, and practically compel me to obey his wishes by undertaking a journey to Mars.

I learnt this afterwards from others, and found that a similar modesty and reticence was a general characteristic of the Martians.

The acclamations of the people at the conclusion of the Chief's speech were almost deafening, and I frequently distinguished the name of "Merna" amongst their ejaculations. Whatever was the purport of the Chief's statement, it undoubtedly afforded the most intense satisfaction to all those who heard it.

The assembly now began to disperse in the most orderly manner, many of the people gathering round the Areonal, and apparently discussing with interest its construction and equipment, but none pressed upon our little
party. There was neither rude curiosity nor any embarrassing attentions bestowed upon us, such as would have been so unpleasantly in evidence in any similar circumstances upon the earth.

"Merna" asked me to be good enough to excuse him for the present as he had something to attend to urgently; then he took leave of us for the time, remarking that we need have no anxiety about the Areonal, for it would be perfectly safe and well looked after.

The Chief, and some of the officials to whom he now introduced us, then accompanied us to another pavilion, where we partook of a little light refreshment. The chief then took his leave, after promising that we should meet again to-morrow.

One of the officials informed me that a residence was in readiness for our occupation, and that it was situated within a very short distance from where we stood. He asked whether we would proceed there in an electric carriage, or whether we would prefer to walk; and, as we wished to get accustomed to walking on our new world, we decided to go on foot.

We saw around us in every direction large numbers of flying machines of all descriptions, also electric and other motors, which had conveyed the people to our landing-place. Most of the motors were very light and elegant in appearance, and those intended for conveying only a single person were but little larger than our motor tricycles. There was not the slightest noise from the machinery, nor any fumes emitted like those we had found so great a nuisance on the earth. The Martians had evidently overcome all such difficulties, if they had ever experienced them; and their methods were doubtless far in advance of the use of evil-smelling petrol.

We noticed that very many of the people were walking in a manner which suggested that they had a long journey before them; and, on mentioning this to the official in attendance, he told us that walking was so easy on Mars, both on account of the small gravitation and the generally level surface of the country, that most Martians preferred walking unless much pressed for time, or the distance to be traversed was very great.

Though the sun was shining brilliantly the heat was not at all oppressive. As we passed along we noticed that the buildings all stood separate from each other, open spaces or trees, flowers or shrubs being around each of them. We saw no evidence of overcrowding of buildings on small areas of land like there was in the world we had left. Plenty of air and open space seemed to be the general rule, at least upon this part of Mars.

After a very short walk we arrived at our dwelling, an elegant little building of white stone, and only two storeys in height. There was such a general appearance of comfort and homeliness about it, both inside and out, that M'Allister exclaimed: "Professor, I never thought coming to Mars meant a reception like this. I rather expected to have had a fight when we landed!"

John, too, expressed his delight at the kind manner in which we had been received, then asked me, "Who was that splendid young fellow who came out of the pavilion with me, and stood by my side on the daïs?"

"I'll tell you presently, John," I replied, "after we have had some solid refreshment, and are quite alone."

"One would think there was some mystery about him, Professor, by the way you speak," he answered.

"Perhaps there is a little more mystery in the whole affair than you dream of," I remarked.

"Anyhow," said John, "you seem very pleased over it, whatever it may be, Professor; for I never saw you so delighted in your life as you have appeared during the last hour."

"Yes, John, I am indeed pleased," I replied, "and so will you be when you know what I know."

"You quite arouse my curiosity," he said; "still, I suppose I must wait a little longer to be enlightened; but we came to Mars to find out secrets."

Just then we had to cease our conversation, for we were conducted into a room where we found a most tempting looking repast ready for our delectation, and the attendants showed us to our respective seats.

All the comestibles were fruits, nuts, or vegetables of various kinds, and I saw nothing there in the nature of flesh meat. Some of the fruits and nuts resembled the products of our own world, especially some of our eastern products; but most of them were entirely unknown to us, though they all looked tempting and good.

We certainly did full justice to them, and were particularly attracted by some large bunches of what were evidently Martian grapes, each grape being as large as one of our egg-plums. We tried some of these, and found them most delicious, as indeed were all the other eatables we consumed.

Though used to a meat diet, we found this meal most satisfying; the fruits being so refreshing that we had neither desire nor need for drink, though it stood there ready for us if we wished to take it. The attendants waited upon us assiduously, bringing us the various dishes in what was apparently their regular order of courses.

Both John and M'Allister appeared to enjoy their first Martian meal as much as I did, and when we adjourned to another room at its conclusion, were loud in their expressions of appreciation.

When this topic had died down, I thought the time had arrived to make the important disclosure of the first results of our visit to the red planet.

They listened to my story in amazement, and with many exclamations of surprise; whilst, as for John, he was
almost beside himself with delight on learning that he would once more meet his long-lost friend, and he rose and shook hands with me, at the same time warmly congratulating me on my wonderful reunion with my son.

"Professor," said M'Allister, also rising and shaking my hand, "I'm as glad for your sake as if I had found a son of my own!"

I thanked them both very heartily for their kind congratulations. Then John said to me--

"Professor, it is, without exception, the most extraordinary thing I ever heard of in my life; but what strikes me as most singular about it is the strange coincidence connected with your son's name!"

I did not understand this allusion to Mark, so asked what was the strange coincidence to which he referred.

"Well, Professor," he said, "excuse me if I answer your question by asking another one. How was it you gave your son the name of Mark, and what was the particular reason for your doing so?"

"No particular reason, John, so far as I am aware," I replied, "except that it always seemed to me a good, plain, and honest sort of a name."
"Do you know the meaning of the name?" he then asked.

"Well, yes, I think so; for one thing, I believe it means 'polite,'" I said; "and another meaning I have read is a 'hammer.' But really, John, I had no thought of meanings at all when I chose that name for him."

"That only makes it all the more strange," John answered. "I have seen those meanings you mention as attached to the name; but you seem to have quite missed the most important one of all, for I can tell you, Professor, that the name 'Mark' means 'Son of Mars!' Now don't you see the coincidence, when you find that he really has become a son of Mars?"

"Really, John," I answered, "I assure you that I never heard of that before; the coincidence is, as you say, most singular and extraordinary; but, taking all things into consideration, I am inclined to think there must be something more than coincidence when they work out like this. You know your Shakespeare, John, and he says most truly: 'There's a divinity that shapes our ends, rough-hew them how we will.' I will not repeat the hackneyed phrase about 'more things in heaven and earth----'"

Just then Merna (as I suppose I must now call him, though he will always be "Mark" to me) arrived amongst us, and I at once introduced him to John and M'Allister.

The meeting between the two old friends was delightful to witness, for both seemed over-joyed; and they had so much to say to each other--so many questions to ask.

When the excitement had passed I asked Mark--you see I cannot help calling him by his old name--if he could now furnish me with the further information he had promised, for I was longing to hear all he had to tell.

"Yes," he replied, "I am quite ready, sir;" and then he proceeded to give us details of his life upon Mars. It is too long a story to tell exactly as he told it--and sometimes he was at a loss to express himself appropriately in English--but, shortly, it was as follows:--

His birth upon Mars, as we found from a comparison of dates, must have followed almost immediately after his passing from the earth; and he said he thought that his two previous seizures were probably abortive attempts of his spirit to depart earlier.

His Martian father was the brother of Soranho, the present Chief of the Council; both his father and mother, however, had died when Merna was quite a child, and the Chief had since brought him up like his own son, and was very much attached to him.

When Merna was still very young he was extremely fond of looking at the stars in the clear Martian skies, being especially attracted by the earth, which was a very brilliant star in those skies when the planet was in the most favourable position for viewing it. He used to watch the earth pass through its various phases, the same as we see Venus; and as time went on he had a strong feeling or intuition that, at some unknown period, he had been upon, or in some way connected with, the earth!

This feeling became more and more intense, so that his thoughts were constantly directed towards our world, and ultimately he became firmly convinced that he had once lived upon the earth.

He told us, amongst other things, that the Martians possess senses and powers which we do not possess, and know nothing of. For instance, he said that any Martian of ordinary intelligence always knew what was in the mind of any one with whom he was speaking; therefore any attempt to prevaricate or mislead was folly and useless. In some cases this power extended over a long distance, and the thoughts of others could be read as easily as when they were close at hand. So for this reason, and not only because it is considered wrong, prevarication is never practised on Mars.

Again, a Martian can transmit his thoughts over any distance upon the planet, and influence thereby any one whom he could influence in ordinary conversation.

Some, who had given especial attention to the training and development of this faculty, could even transmit their thoughts to other worlds; but the influence exercised in such cases depended entirely upon whether the inhabitants of other worlds had attained not only a sufficient degree of intelligence, but also the power to assimilate and make use of such outside influences, either consciously or unconsciously.

Having become convinced that he had once lived upon the earth, his interest in it was greatly intensiified, and he felt a consuming desire to know more. He therefore used his utmost endeavours to train and develop his faculties, with a view to finding out something more definite. His uncle was informed of his desires in this respect, as well as of his reasons for them; and he placed Merna under the tuition of two Martians who had developed these special faculties to the highest degree then possible.

After pursuing this course of instruction and training for some time, Merna found that he was gradually becoming more and more acquainted with details of his former life, and was also gradually relearning the language he had spoken upon the earth.

Soon he was able to recall from his sub-consciousness the names of persons, and also of places and things, with which he had been acquainted in his previous life; and what he thus learnt he imparted to his uncle, his two teachers,
and to a few other Martians.

The knowledge thus very slowly acquired and gradually built up led to a thirst for still further knowledge; so he then tried to transmit his thoughts to the earth, and, if possible, to influence me, his father, whom he felt certain was still living.

He paused in his statement, and then asked me to tell him "When I first thought of making a trip to Mars, and also whether I had not, long before then, constantly been in the habit of thinking about the planet?"

I told him the date when I first made the suggestion of our trip to John, and added that he was quite right in supposing I had long previously been occupied with thoughts about Mars.

"Yes," he replied, "the date you give is quite correct. I had for years been trying to influence you to take a deep interest in this planet, and after that to influence you to build a vessel which would bring you here; and, on the very day you mention, I felt quite certain I had succeeded."

"My two friends then joined me in transmitting further influences to enable you to conceive the proper kind of vessel and machinery, and how it should be constructed. These latter influences seem, from what you have told me, to have been assimilated by John to a larger extent than by yourself; and this, no doubt, was owing to his higher development of engineering and mechanical genius. The result, however, has been most satisfactory. You, whom I had so long yearned to see, were brought to embark upon this long voyage through space; I knew when you had done so, and also that John and another accompanied you. I also knew exactly when you would arrive here, for mentally I saw your chart and knew many of your thoughts."

"But," interposed John at this stage, "was it not rather a risky and dangerous experiment to influence inhabitants of another world to make what was practically an invasion of Mars? Even if it were possible, we should be afraid to do such a thing upon our earth, for fear of disastrous developments later on."

"There was no danger at all," he replied. "I think you found you could not land here just where you pleased!"

"Ah, that we did," said M'Allister; "and we were never so mystified in our lives."

"So, Mark," I said, laughing as I spoke, "that was your work, was it?"

"I certainly helped in doing it," he replied smilingly. "We have the means of electrifying a very large area of space anywhere, either upon our planet or at any required height above it, in such a manner as to neutralise the power of any vessel that could possibly come here, and thus stop its progress entirely when we so desired. We let you go on a short distance and then stopped you, again and again; and when we stopped you, we took care to arrange the forces so that you could not in any event fall to the planet even if the whole of your machinery failed to act. You were, as you know, compelled to descend exactly where we wished you to; and, in fact, exactly where we had previously decided you should land!"

"Well," exclaimed M'Allister excitedly, "if this doesn't beat all I ever experienced! To think now that all our movements and impulses have been engineered and controlled from Mars; not only just recently, but for months and years past. Mon, it's marvellous!"

"Marvellous to you, no doubt," said Merna, "but only a commonplace happening here. It is very satisfactory to us that our endeavours to influence you to come to this planet have proved successful in the main essentials. The influence does not, however, appear to have been quite effective as regards your steering to the landing-place we had decided upon. We had hoped there would have been no necessity for interfering with your movements by means of the electrical waves."

"Well, Merna," I answered, "you certainly succeeded in imbuing me with a desire to land at Sirapion, but my two companions were more attracted by the 'Gordian Knot'; and it was only because I subordinated my own inclinations to theirs that you were compelled to use force to make us proceed in the right direction. However, it has resulted in our having one of the most exciting and mystifying experiences of our lives; and, now all has ended happily, I do not think any one of us regrets that the incident occurred."

"Certainly I do not," John remarked.

"Neither do I," said M'Allister; "although I must confess I never felt so entirely beaten in my life."

"Well, now you understand that it had to be done," said Merna. "As I remarked, there was no danger to us in your coming here; for, if we had desired it, we could have utterly destroyed your vessel before it reached the planet, just as easily as we stopped your progress; or we could have destroyed it with equal ease and without any risk to ourselves after you had landed."

"My word," said M'Allister, "I'm right glad we did not come here as enemies!"

"Yes," replied Merna; "it was just as well you did not. We do not make war, but we have full means of protecting ourselves against attack if it should ever be necessary to do so. So you will understand that no invasion of Mars from outer space is possible."

I then turned to Merna and said, "There is one question I should like to ask you before we part this evening: Can you tell me the meaning of the word 'Tetarta,' which Soranho, your chief, told me was the name by which your
world is known to its inhabitants?"

"Oh yes, sir," he answered; "'Tetarta' means 'the fourth world,' and thus indicates our position in the solar system. Sometimes, however, the name 'Tetartoecumene' is used; but this does not find general acceptance amongst us, as it means 'the fourth inhabited world,' and therefore assumes rather too much.

"We know the earth is inhabited, and have some reason to believe that Venus is also; but with regard to Mercury we have no knowledge at all upon this point. Mercury, as seen from Mars, is always too close to the sun for us to learn much about it by optical investigation; and we have never been certain that we have either received influences from there or been able to transmit influences to the planet."

"Thank you, Merna," I replied, "that clears up the matter; and it seems to me that your names are much more appropriate than the one by which your world is known to us on the earth; for, on account of its red colour, we have, as you are aware, named it 'Mars,' after our mythical god of war. I gather from what you have told us that war is now quite unknown upon your planet, so our name is quite inappropriate."

"Yes, that is so, sir," he answered; "and, later on, I hope you will learn much more concerning our social conditions, and that you will find we are a fairly developed and civilised people."

He then took leave of us, promising to see us again in the morning for the purpose of showing us about our new world.

It was now rather late, so, after discussing for a while the events of this most exciting day, we retired to rest. My thoughts, however, were so many and so tumultuous that it is scarcely a matter of wonder that a very long time elapsed before sleep came to me.

CHAPTER XVI
WE LEARN SOMETHING ABOUT THE POWERS OF THE MARTIANS

The next morning Merna arrived early, and breakfasted with us; and, as soon as the meal was over, we started out. The air was bracing and exhilarating, and we felt so extremely light and buoyant that we almost seemed to want to run, skip, and jump, as we did in our early childhood's days.

We went first to have a look at the Areonal, but, on arriving at the open space where we had left it, were unable to see it! The daïs had been cleared away, also the pavilions; whilst in the centre of the open space there was a large building.

We felt rather puzzled at this change, for we were sure no such building stood there yesterday. Merna, however, led us across to it, and touched a switch, which swung open a pair of large doors so that we could see into the interior of the building.

There we saw our own good ship, the Areonal, safely housed in a substantial-looking building, which had apparently sprung up in a single night.

We all looked at Merna inquiringly, and he smiled, saying, "Ah, you are not used to the Martian way of doing things! This seems to you very quick work, no doubt; but the erection of the building was not such a heavy and laborious task as it would have been upon the earth. Owing to the lesser gravitation here, and to the larger physical development of our people on Mars, one man can accomplish in the same time what it would require many men to achieve upon the earth. Besides, we have labour-saving machinery and apparatus which your scientific men have not yet even dreamt of.

"Thus, what seems to you an extraordinary piece of work to be finished in so short a time, is really nothing out of the common here, especially as the structure is only of a temporary character."

"Mon," said M'Allister, turning to John, "if our earth had been like Mars we wouldn't have taken so many months to build our vessel and its shed!"

John answered him, and turning to Merna, said, "There is something I am very anxious to ask you about, as it concerns myself and my relations with the inhabitants of this planet. I do not wish to infringe any of their regulations here, or to give any cause of offence, but----"

Then Merna held up his hand, and smiling, said, "You need not say any more, John; I know exactly what you wish to ask me; and, without it being said, can reply to you. You may smoke as much as you like when out-doors, without fear of offending any one here; but in public or private assemblies, notice what others do, and act accordingly. It is true only a small proportion of our population indulge in smoking, except in the colder regions; but please understand that amongst us Martians there are few restrictions as to conduct or custom, and, provided that nothing really dangerous or annoying to the community is done, every one can please himself.

"We leave all such things to the good sense of the individual, and a Martian can be trusted to regulate his habits and conduct without needing penalties to compel the observance of regulations or restrictions."

We looked at each other significantly, but without saying anything; for we all realised the truth of Merna's statement of the previous evening to the effect that the Martians were able to divine what might be in the mind of another without his having to speak. Not one of us had mentioned smoking before Merna, yet he knew exactly what
John had upon his mind and was about to ask him.

I thought it was my turn now to obtain some information, so said to Merna, "There is also something which I am very anxious to ask you about."

"Oh yes, sir," replied he, again smiling; "you are anxious to know whether we really possess an elaborate system of canalisation upon Mars, and I can soon set your mind at rest upon that point. Indeed, it was in order to make arrangements for conducting you to inspect some of the canals that I left you yesterday after parting with the Chief.

"Our seas and other large bodies of water have long ceased to exist, and we are therefore dependent upon the water arising from the dissolving snow of our polar snow-caps for a supply of that prime necessary of life. Our canal system is, therefore, the most supremely important work which we have to maintain and develop, so that every part of the planet may be supplied with water, and also kept in touch with the rest of the planet. You must clearly understand that upon the adequacy and perfect working of the canals all life here is dependent; so every other matter is regarded as of lesser importance."

I may here say that we afterwards learnt that the positions of the higher officials connected with the administration of the canal system are regarded as amongst the highest and most honourable offices that a Martian can aspire to; and, moreover, that Merna himself held a very responsible position in the engineering department connected with the canals.

Merna then went on to say: "You will see for yourselves, presently, what our canals are like; for I am about to take you across to a point where you will have a good view over the country.

"As our canals are such conspicuous features upon our planet, especially where they cross the deserts, our experts have long been endeavouring, by various means, to transmit influences to the earth, in order to direct your people's attention to the regular lines they form, and thus convince them that Mars is inhabited by intelligent beings. Probably it is the case that very few of your scientific men are endowed with intelligences both sufficiently advanced, and sufficiently adaptable and receptive of new ideas, to enable them to assimilate and make use of the influences thus transmitted; but still we know that some must have grasped the situation."

"Merna," I answered, "that is quite true; but, of course, I cannot say whether it has been the result of Martian influences. Thirty years ago one of our great observers saw and mapped many of the canal lines; and years before that, others had seen them imperfectly, and drawn portions of them on their maps. Our first and greatest exponent of the idea that they were really canals was, however, Professor Lowell, an American astronomer, whose fame has spread all over our world. He has not only been a constant observer of Mars for many years, but has mapped out your canal systems from observations made by himself and his colleagues. He has also formulated a reasonable and, as it now appears, true explanation of their object and purpose; as well as demonstrating their existence to be a prime necessity for the well-being of your people.

"It is true he has met with much opposition; not only from those who have but limited knowledge, and refuse to believe anything they cannot see themselves, but from the older school of astronomers, who are not very receptive of new ideas; and who are, perhaps, naturally reluctant to admit the inadequacy or inaccuracy of their early theories. This is a very common failing with experts of all kinds, and we have had many instances of it in connection with astronomy all through our history; but we have amongst us many intelligent persons who are open to conviction, being unfettered in regard to particular theories. They are, therefore, not only willing, but eager to examine the evidence which has been collected, and to form their own opinions on the subject."

"I am very glad to hear you say so, sir," replied Merna; "and now I would like to ask you whether, during the last thirty-five years or so, there has not been an extraordinary advance in knowledge amongst your people in connection with such sciences as electricity, telegraphy, light and engineering, as well as in astronomy?"

"I ask because our experts have been most earnestly endeavouring during that time to transmit some of their knowledge on these subjects to your scientific people on the earth, and we have some reason to believe that their efforts have been, at least, partially successful."

I assured him that our advance in regard to these subjects had really been phenomenal during the period he mentioned. Probably during no previous period in the history of our world had so many useful, important, and even amazing discoveries been made during such a short space of time.

I gave particulars of the great discoveries and rapid developments in connection with electricity, wireless telegraphy, the telephone, Hertzian waves, X and N rays, spectroscopy, colour-photography, and telectrography. I also mentioned the discovery of radium, helium, and argon; the medical use of light and bacteriology; together with the invention of the turbine engine, motor cars, flying machines; also phonographs and other kinds of talking machines.

Merna expressed himself as very gratified at this information; and remarked that our progress would be still more rapid in the future, as it was quite evident that there were terrestrial intelligences which were readily receptive,
and capable of high development. He promised that what I had told him should be made known in the proper quarters; and added that the Martians would be encouraged to persevere in their efforts to impart such knowledge as would aid in the general advancement of science in our world.

He then asked me, "Whether, in connection with new discoveries, it had been found that more than one person had developed the new ideas about the same time?"

"Yes, Merna," I replied; "it has often been observed that similar inventions have been made by several people at the same time: although they have worked quite independently, and were totally unaware of what was being done by each other."

"That," said Merna, "is a natural consequence of these influences; for they are in the air, so to speak, and have only to be brought into connection with the appropriate intellects to be assimilated and carried into effect."

I then asked him if he could explain how the influences acted; and he replied that in most cases they formed a sort of mental picture, which would be mentally seen and understood by a person sufficiently endowed with the necessary knowledge; but if he were not so endowed, or not receptive of new ideas, then he would learn nothing from the influences.

Thus a mental picture of some new and unknown piece of machinery would mean nothing to an unmechanical mind, or even to a mechanical mind which was not endowed also with the inventive faculty. In other cases only thoughts in the abstract could be sent, and these were more likely to remain unassimilated than the mental pictures, as a very high order of intellect was required to receive such thoughts.

I then informed him that our greatest and most daring electrician, Nicola Tesla, was firmly convinced that he had discovered planetary disturbances of an electrical nature which had reached our world. This occurred as far back as the year 1899; and, in the course of later scientific investigations, he found that the disturbances could not have come from the sun, the moon, or Venus. Further study has, he says, quite satisfied him that they must have emanated from Mars.

I added that Tesla was at work perfecting an apparatus which he was convinced would be the means of putting him into communication with other planets, by means of a wireless transmitter. This, he states, will produce vibrations of enormous power, and he has devised a means of producing oscillations of the most tremendous intensity. He states that he has actually passed a current round the earth which attained many millions of horse-power, and feels assured that he has already succeeded in producing electrical disturbances on Mars by the aid of this current. "Those disturbances," he adds, "are much more powerful than anything which could be obtained by means of light reflectors, no matter how large such reflectors might be, or how wide an area they might be made to cover."

At the same time I pointed out that these are Tesla's own statements, and not mere second-hand reports or newspaper inventions!

Merna said that this information was really very gratifying, and gave him the greatest satisfaction; for it showed that theMartians' endeavours to communicate with us would ultimately be successful, because there was at least one man upon the earth capable of devising the necessary apparatus for receiving and transmitting such communications. He further remarked that it was quite true that electrical disturbances had reached Mars from another planet, but added that no effective communication was possible by means of light rays, as the two planets were never so situated in regard to each other as to render such a mode of signalling practicable.

I was just about to speak when Merna held up his hand to enjoin silence, and stood as though he were listening attentively to some communication.

After a minute or so he told us he had just received a mental communication from Soranho, stating that he had despatched a messenger to us with an urgent letter. Then he added, "We had better wait here until the messenger arrives."

"So," I said, "your wireless telegraphy is evidently much in advance of ours, for you seem to dispense with apparatus altogether!"

"Yes, sir," he replied; "you see this is one of the senses I told you we Martians possessed; but some of our people who are somewhat deficient in this sense still use the small pocket receivers and transmitters which have long become obsolete amongst the generality of our population.

"I have already given you two illustrations of the truth of my statement, that we are able to divine what is in each other's mind without it being necessary to speak. Still, I wish you to understand that we never allow this power to spoil conversation. You might, perhaps, think that because we know what each was about to say, the words would remain unsaid, and we would, therefore, be a rather taciturn people. That is not so. The faculty is a very useful one to us on many occasions; but, as I remarked, we never allow it to spoil conversation."

"That seems to me a very sensible and practical arrangement," remarked John.

"Well," replied Merna, "I hope, and I think, you will find us a very sensible and practical nation."
At this moment an official came up to us, and after saluting, handed Merna a packet. Having opened and read
the communication it contained, he turned to us and gave each a document which had been enclosed; at the same
time saying that it was a formal invitation for our attendance at a banquet in the evening, for the purpose of meeting
the Chief of the Council and other high personages, and for social intercourse.

We all expressed our thanks, and, of course, accepted the invitation. The official, having received the requisite
reply from Merna, again saluted, and then retired.

CHAPTER XVII
WE VISIT THE CANALS AND DISCOVER THEIR SECRET--MARTIAN VIEWS OF LIFE AND DEATH

On Merna's suggestion we walked through the town with the object of inspecting the canals on the outskirts;
and we needed no pressing, as we were all eager to see what the canals were like.

We again noted how every house, and almost every building, was isolated from its neighbours. Many of them
were very large and exceedingly handsome specimens of architecture, and the streets were wide, straight, and
remarkably clean and well kept. The official and administrative buildings were near the centre of the town; their
general arrangement and design appearing most excellently adapted to the special requirements of their respective
purposes.

Most of them were built of white stone, resembling our marble, which was very hard, and appeared clean and
unaffected by weather, although some of the buildings were of considerable age. Others were built of stones of
various colours, which added a pleasing variety to the general effect; whilst many were adorned with noble and
beautiful domes, towers, and airy-looking minarets.

As we did not propose to inspect these in detail now, we passed on to the outskirts of the town, soon reaching
the air-ship station, where we found a vessel in readiness for our trip. We all entered; the ship was at once started,
and we proceeded swiftly on our journey.

Merna then told us that all public means of transit, over the whole area of the planet, were provided and
maintained by the State, for the free use of all who needed to travel. The passengers neither paid fares nor received
tickets; they simply stepped into the proper conveyance and went wherever they desired to go. A record was kept of
the number of passengers carried; for, as each passenger entered, a number was automatically registered by a small
machine under the footboard, the exit being by another door.

Small air-ships, motors, and boats could be engaged by single persons or small parties who did not wish to
travel in the larger public conveyances; and any person was at liberty to provide a private conveyance for his own
use, but the public ones were so numerous and convenient that very few people kept their own.

"Hey, mon!" said M'Allister, "the Martians can teach us something. I would like to see such a system at work in
our own country!"

"I am afraid you are not likely to see that," said John, "while we have to spend so much upon warlike
preparations. If war could be abolished, all the millions of money thus expended could be made available for
purposes which would be of real and permanent benefit to the people."

We travelled a distance of some miles, and then the vessel was brought to a standstill.

What a splendid view we then had over the country all around us! the air being so thin and clear that there was
very little dimming of the objects in the far distance. Across the country, in line after line, were the canals which we
had been so anxious to see, extending as far as the eye could reach! With our glasses we made a detailed
examination of several.

Our sensational newspapers have had paragraphs about Martian canals a hundred miles, or even hundreds of
miles, wide! Scientific men have also similarly exaggerated, and made remarks about the absurdity of the
supposition that such canals really existed.

There is very little excuse for such statements, because Professor Lowell has always been careful to point out
that the lines represented broad bands of vegetation, and not the width of the canals.

Now the secret was out! What we actually saw was this: not a single wide canal but a series of comparatively
narrow canals, running parallel to each other, with a very wide strip of vegetation between each. Usually the canals
were linked together in pairs by smaller cross canals running diagonally from one canal to the other in alternate
order. These were the irrigation trenches. Thus from one of a pair of canals an irrigation trench would branch out at
an angle of about fifty degrees, and enter the second canal. Higher up, on the same side, another trench would run
from the second canal at a similar angle, and enter the first canal, and so on--ad infinitum. In the case of single
canals curved loops branched out and re-entered higher up, these loops being made on either side, and similar loops
were made on the outsides of paired canals.

As a result of this arrangement it did not matter whether the water passed up the canal at one season of the year
or down it at another season, it could always move straight ahead; the irrigation trenches were thus constantly
flushed by one or other of the pairs, and there could be no stagnation anywhere. Merna also told us that some canals
are provided with a network of trenches, whilst others are embanked so that the water can be let out through sluices when necessary, and thus flood the surrounding land. Thus every requirement can be met.

So far from being a hundred miles wide, it was exceptional for the canals to have a width of more than two hundred yards. Most of those we were looking at were only about sixty feet wide! and only the wider ones are used for navigation purposes. Merna explained why this was so, saying that as the main use of the canals was for irrigation purposes very wide ones were not required; for not only would they be wasteful, but as it was necessary to force the water along by artificial means, it could more conveniently be accomplished in the case of narrow canals, as the wider the canal the more difficult it became to force the water along.

We also observed many splendid wide motor-roads running between the single canals, as well as others running straight across the system, being carried over the canals by the most beautiful and fairy-like bridges that we had ever seen. They were all constructed of a metal identical with our "martalium," which we had used in the construction of the Areonal; so that was undoubtedly another invention which we owed to Martian influences transmitted to us across space!

Nothing more beautiful or graceful than these bridges could be imagined, so light were they in construction, so elegant and varied in design, and every part shining in the sun like burnished silver; they looked like structures composed of rays of light rather than substantial metal! They were a perfect dream of beauty, and we stood a long time examining their elegant construction through our glasses.

"Well," remarked John, "some of our millionaires would give half their fortunes to have such lovely bridges as these in their private parks!"

"Heh, mon!" replied M'Allister, "it's very clear the Martians could teach our engineers something about bridge-building, if nothing else!"

"Wait and see our water-lifting and water-propelling machinery," said Merna; "I think that will be something which will suit you as an engineer!"

I noticed that many of the lines were apparently groves of trees, and asked Merna whether they were canals or not.

"Yes," he replied, "they are canals. You will understand that in the hotter parts of our world it is necessary to protect the water from too rapid evaporation, or else the canals would be almost run dry long before the need for their use ceased at the end of the season. Some are arched over entirely, but in most cases it is sufficient to plant trees along each side. Would you like to examine one?" he asked; "we can do so very soon, if you wish?"

I said I should be glad to do so, and our course was accordingly directed to one of the groves, which appeared to be about two miles distant. It, however, proved to be more than six miles away, for we had not yet become accustomed to the effect of the clear Martian air in making distant objects appear much closer than they really were. However, it did not take long for our air-ship to reach it; and we descended in the space between the canals and then walked over into the grove. When we turned into it, we were greatly surprised at the charming effect of the trees over the canal.

The trees were something like our willows, but taller than elms, and had a multitude of very long, thin, and supple branches, with very little bare trunk. They were planted rather close together, all along each side of the canal, with their trunks sloping slightly towards the water. The long branches thus met at the sides and high overhead, intertwinning together, and forming a high leafy archway extending all along the canal in both directions as far as the eye could see. The thick, soft Martian grass along each side of the canal was like a velvet-pile carpet to walk upon; the sunlight filtering between the green leaves of the trees cast bright flecks of light on the clear shimmering water which ran beneath them; whilst water-fowl swimming here and there gave a bright touch of colour and the animation of life which so adds to the general charm of such scenery. Some of the water-fowl were very large birds, with brilliant coloured plumage.

"What a delightful place for a quiet walk on a hot day like this," I exclaimed; "plenty of air and no excess of heat!"

"Yes," Merna replied; "these embowered canals are very popular with the Martians, as they furnish such cool and pleasant walks in the summer time. I must also tell you," he added, "that those water-fowl are looked after with extreme care, because most of our aquatic birds have become nearly extinct since our natural areas of water failed us, and unless they were preserved would die out entirely.

"You will understand that these canals are not liable to excessive evaporation; but, at the same time, it would not do to prevent evaporation altogether, because we should then fail to obtain a sufficient and fresh supply next spring."

"I quite see that, Merna," I said; "but one of our scientific men has said that it would be madness to construct canals on Mars, because the water would all quickly evaporate, especially in the warmer regions, and thus be wasted."
"Well, as you see, sir, we manage to prevent evaporation to any extent we may desire," replied Merna with a smile; "and even scientific men seem liable to omit some important matters from their theories and calculations."

"How do you manage the irrigation?" I inquired; "the trenches seem rather wide apart to supply such a large area!"

"The upper layer of soil is very porous, and the water soaks along it," he answered; adding that "where necessary it was assisted by porous pipes laid beneath the surface.

"Besides," he proceeded, "we have small portable electric engines, with which water from the trenches can be distributed in the form of spray over wide areas. Our vegetation, too, has adapted itself to the conditions of the planet in the course of the changes which have taken place during past ages, and now requires very little water or moisture to maintain it in vigorous and healthy growth."

One more question was put to him by John, who asked, "Do these canals constitute your whole supply of water for drinking, as well as for all other purposes?"

"Oh no, John!" exclaimed Merna. "We draw all our pure water from deep wells. The soil of Mars, being much more lightly compacted than that of the earth, has absorbed an immense proportion of the water which was formerly upon its surface. Instead of having lost it by evaporation and radiation into space, we still have it below the surface, stored up ready for use in our time of need.

"For this reason, and also in consequence of the small amount of our planet's internal heat, the water has not undergone chemical change, and mostly lies at great depths; but, of course, well-boring is much easier work than on your world, and I expect our methods are rather in advance of yours.

"Your scientists seem to have overlooked some of these points altogether. You need not pity us for lack of water, as I have heard you doing, for we have an ample supply for many centuries to come; especially as we can purify water which has been used for general purposes, and store it up for use, over and over again. Our canals are only drawn upon for purposes connected with irrigation, or when absolutely pure water is not needed."

"Well," M'Allister exclaimed, "it doesn't seem that the Martians are so badly off for water as some of our clever people imagine! Why, I've read that the need of water here must be so great that the people, driven to desperation, must be fighting each other to extermination in order to get it."

"That is an entirely erroneous idea, sir," replied Merna; "and you may be quite sure that such a state of affairs will never be witnessed upon this planet. We know the time must come when our water supply will cease to be, but your people are needlessly pessimistic, and imagine terrors where we see none.

"In actual time, the end of Mars is still far distant; but, as compared with that of your world, it is very near. It will be possible, later on, to forecast, by means of our records of the rate of decrease, the time when our water supply will come to an end; but even now it is well understood how the crisis will be met. As the final period draws nearer, families will become smaller and smaller, and in the last Martian century no children will be born; so the diminishing water supply will suffice for the needs of the dwindling population. Thus the race will gradually die out naturally, and become extinct long before the conditions of our world can make life a terror. There will, therefore, be no self-slaughter, nor murderous extermination, amongst ourselves--we shall simply die out naturally.

"The planet will roll on, devoid of all life, so the loss of water and air will then be of no consequence. It will be a dead world; until, perhaps æons hence, a collision with some other large body may transform both into a nebula; and thus once more start them on the way to develop into a world capable of sustaining life. Thus nothing in the Universe really dies; the apparent death is only the preparation for a newer and higher life.

"We Martians have no fear or dread of death, such as I have heard you say is so prevalent in your world even amongst religious people. With us death, in the ordinary way, is merely like going to sleep; and it is only the portal through which we pass to another life on another planet. Why, then, should we dread it? It is simply a removal to another dwelling-place!"

"I quite agree with that view, Merna," said John; "and our religion teaches us a somewhat similar idea; yet few of its professors look forward with anything but dread to the time when they must pass from their present life."

"Yes, John," said Merna. "What your people really only profess to believe we Martians accept as an actual certainty, for we know it is so; and, as you are aware, sir, I am a living witness of the truth of what I say.

"You know I once lived upon the earth. I died; or, as I prefer to say, I 'passed' from thence, and was born again upon Mars. Some day I must also pass from here; whither I know not, but to another life in some other world; and the Great Father of All will provide for me!"

"There are many other planets which are worlds capable of sustaining life at the present time, or which will develop into such worlds. Some of them, which we can see, are planets belonging to our own solar system, but doubtless there are myriads of planets which revolve round those millions of distant suns which we call fixed stars. If we have made good use of our talents and opportunities for development we shall no doubt pass to a world where that development may be continued on a higher plane. If, however, we have made bad use of them, it is possible that
we may have to purge ourselves by a life on a planet where the conditions are the reverse of pleasant; and so on through eternity, each rising to a higher and higher plane according to the manner in which he has worked out his own salvation.

"Amongst those myriads of planets, probably there is not one which is identical in all respects with any other, and there must be an infinity of variety; some excelling to an incalculable extent the conditions of our present world, and others where the conditions are very much worse!"

"Yes, Merna," I replied. "There are some upon our world who hold very similar ideas, notably a great French astronomer named Flammarion; but in his view only those who have developed their intelligence in the proper direction will pass to other worlds and enjoy what he terms the Uranian life.

"I may also say," I proceeded, "with reference to your remarks respecting the infinite variety of planetary worlds and of their conditions, that one of our great poets has stated the matter very logically, for he says:

'This truth within thy mind rehearse, That, in a boundless universe, Is boundless better, boundless worse.'"

"Sir," said Merna, "that is really very much as a Martian would state the case; and what I have told you is our faith, our hope, and our certainty."

As we passed along on the area outside the grove we noticed that the vegetation bordering the outermost canal did not show a mathematically straight edge as the canal lines do when seen by us through our telescopes. The edges, as a rule, were very irregular: in some places there were large areas of fallow land, and others were very sparsely covered with vegetation.

John remarked that if any of these bare or sparsely-covered places were large enough to be detected by our telescopes, in moments of extremely good seeing, we should no doubt be told that they afforded absolute proof that the canal lines are only disconnected markings, and the canals a myth.

"Very probably," I replied; "yet it should be obvious that vegetation would be sparse, or altogether absent, perhaps, for miles, in many places along the thousands of miles over which the canals extend, and also that it is quite likely, if we could use higher powers so as to get a better view of the lines, the edges would appear irregular. Nature is rarely symmetrical in her work, there is nearly always irregularity of growth; and in artificial cultivation it is neither possible nor desirable to fill up every acre of land simultaneously."

Merna then told us that, owing to extensions of their irrigation system, laterally, and the consequent growth of vegetation, the width of many of the canal lines would be seen to increase.

"Yes," said John, "and when that phenomenon is seen by our observers we shall be informed that such increase in width is still another proof that there are no canals upon Mars."

"Well, John," replied Merna, "it seems to me very strange that your people should so misinterpret the meaning of such indications. Do you really think such a contention would be put forward?"

"I'm quite sure of it," said John; "and we should be told that canals could not increase in width! Don't you agree with me, Professor?"

"Yes, John," I answered; "I have seen and heard so many内容tions and arguments of a like nature that I cannot say your supposition is not justified.

"I may, however, point out that it is only when the most ideal conditions of seeing exist that we can ever hope to secure a view of the canal lines showing the apparent breaks in their continuity. I have on a previous occasion alluded to the drawbacks connected with the use of very large telescopes, and it may be well to sound a note of warning, for it would be very easy for an observer to be deceived by an illusory appearance of the breaking up of the canal lines into a series of scattered markings. This effect would undoubtedly occur in using a very large telescope in any but ideally favourable atmospheric conditions, for the high powers used with such large instruments would so exaggerate the most minute atmospheric tremors that any lines on the Martian surface would inevitably appear broken up, and an erroneous deduction might be drawn by the unwary observer. If well seen, the canal vegetation would appear as separate markings in alignment, but no telescope is ever likely to define well enough to show the actual canals, because they are so narrow."

We now returned to our air-ship, and went back to Sirapion; where, after making the necessary changes and preparations, we accompanied Merna to the City Hall, for the purpose of attending the banquet to which we had been invited by Soranho.

[Illustration: From a Globe made by M. Wicks Plate XI
MARS. MAP IV
An intricate network of canals is here seen, especially in the neighbourhood of Elysium, where many connect with the "Trivium Charontis."]

CHAPTER XVIII
WE ATTEND A MARTIAN BANQUET
On our arrival at the banqueting-hall we were most cordially received by Soranho, as Chief of the Council, who
introduced us to a number of persons, several of whom were high officers of state; but, as only two or three of them knew anything of our language, Merna had to act as interpreter. All of them, however, appeared genuinely pleased to meet us.

The hall was a large and very fine one, most chastely decorated in a style which reminded one of the Etruscan. It was beautifully lighted by artificial means, but there were no visible lamps, the light being diffused over the hall as equally as daylight is diffused.

Many ladies were present, and clearly on entirely equal terms with the sterner sex. They sat down with us at the banquet, and did not remain mere spectators from a distance, as is sometimes the case at our public functions. The dresses of both sexes were very neat, and although there was a more ample and varied display of colour and ornament than is usual in a similar gathering upon our world, especially in the dresses of the males, it was always harmonious and in excellent taste. The costumes reminded me of those in vogue in the south-eastern parts of Europe; the ladies, however, wore rather close-fitting long hose, and no skirts; but their tunics were somewhat longer than those worn by the men, and of thinner material. Many of the dresses looked as though they were woven from semi-transparent shining silver or gold. This style of dress was most becoming to the wearers, setting off their elegant proportions, and at the same time permitting the utmost freedom and grace of movement. Jewellery was clearly only used as a medium for adding to the brilliancy of the general effect, and I saw no one with any lavish or vulgar display of jewels.

Our meal was very similar in character to that of which we had partaken on the previous day, though on a more extended and elaborate scale. This time, however, we partook of the delicious wines which were provided, and found that whilst being most refreshing and exhilarating, they were, as Merna told us, so prepared as to be non-intoxicating. They were indeed so fine in quality and flavour that, I think, even M’Allister was reconciled to the absence of his own favourite drink.

I occupied a seat of honour next to Soranho, and my two friends were close by. On looking round the hall, and scanning the features of the different individuals present, I was much impressed by the fact that the same regularity, beauty, and symmetry was apparent in all; not one face could be termed “plain,” or gave any impression of self-indulgence or sensuality; whilst the soft glowing light in their eyes produced a most indescribable and charming effect upon the whole of their features.

This light is altogether different from the fierce glare seen in the eyes of many of our animals, especially the feline race, which seems to enlarge the eyes to enormous orbs of brilliant light. In the Martians it is simply a colourless, soft, and liquid glow which has a different effect on eyes of different colours; but it is charming in all.

Merna had introduced us to a lady named Eleeta, who sat next to him at the table; and it did not require a Martian intuition to enable me quickly to perceive that the relations in which they regarded each other were something beyond those of ordinary friendship. Their glowing eyes and beaming countenances, and their general animation and exhilaration as they conversed together, told their own tale, for mutual love has much the same indications and attributes everywhere—even upon Mars! But the love-light shining in Martian eyes is something far more entrancing than that seen in the duller orbs of the inhabitants of our world.

The people of Mars generally have dark hair, dark eyes, and fresh-coloured complexions; the males having no hair upon their faces, beyond a slight moustache. Beards never grow upon their chins, so they have no need to shave, and are spared the work which wastes so much of the time of terrestrials. If we could only count up the time spent in shaving, during fifty years or so, we should find that we have devoted several whole months to that tiresome operation.

Only a few individuals present had light hair and light-coloured eyes, and Eleeta was one of these. She was a most charming and beautiful girl—vivacious, and evidently very intellectual; and I thought that she and Merna would make a most well-matched pair.

The banquet proved an extremely pleasant and sociable function; and, when it was over, the company adjourned to another hall opening out of the banqueting-hall, where they split up into separate groups, and conversation soon became very animated.

On inquiring of Merna, I was informed that music is never performed on such occasions as these, during conversational periods, as it is considered a desecration of a high and noble art.

Merna introduced John and M’Allister to one of the chief engineers of the canal department, who knew a little English, and soon they were discussing with eager interest a collection of pictures and drawings of the machinery. Seeing that our friends were thus congenially occupied, Merna then took me across to where Eleeta and a girl friend of hers, named Siloni, were sitting.

He told me he had instructed Eleeta in English and she had passed on her knowledge of the language to Siloni; so we were all able to converse together with the occasional aid of Merna's interpretation.

Merna had also acquainted his friends with our usual terms of addressing one another, and it came almost as a
surprise to me to be addressed by the Martians as "Mr. Poynders" and "Sir"; for I had become so accustomed to being called "Professor" by my two colleagues that my own name sounded almost strange to me.

We had been chatting together only a short time when John and M'Allister, with their Martian friend, the engineer, came over to us; and soon after that we were joined by Soranho and Merna's tutors, named respectively Corontus and Tellurio, who were followed by a numerous company of Martians of both sexes.

Soranho, addressing me, then said, "Mr. Poynders, I should very much like to know something about terrestrial affairs generally, especially in regard to the methods of government amongst your nations, and the social conditions of the people; and shall therefore be glad if you will be good enough to give me any particulars that may be of interest in connection with these subjects."

He then took a seat, with the tutors on either side of him; and he added that the Martians had not been able to acquire any definite information upon the matters to which he referred, but they knew our people were not so far advanced as the Martians, and he did not therefore expect too much of the terrestrials.

I told him I would endeavour to enlighten him upon these subjects so far as lay in my power; and, as I rose to speak, the general body of the Martians seated themselves a few feet away from us in a large semicircle facing the chief.

I noticed that, against the wall behind the Chief, was a group of beautifully embroidered banners representing the planets, and that those depicting Mars and the Earth were placed in the central positions. These two banners exhibited very graphic representations of the markings on the respective planets.

CHAPTER XIX
THE CHIEF OF THE MARTIAN COUNCIL DISCUSSES THE SOCIAL CONDITIONS OF OUR WORLD AND MARS

It was a most strange, and, in fact, embarrassing situation for me--an insignificant and very retiring man in my own country--to be thus called upon to address a large company of the most important inhabitants of another world, and to try to make them understand the social and political systems carried on by the nations on the earth. However, the position had to be faced; so as clearly and concisely as I could I explained to them our various systems of government--our political systems and our social conditions; mentioning in connection with the latter the extremes of wealth and the extremes of poverty which often existed side by side.

I touched upon the rivalries between the various nations, the enormous amounts of money expended in armaments for aggressive and defensive purposes, our hereditary nobility, our land systems, trading, and also the great and difficult problems of poverty, drink, and unemployment with which we had to cope.

Whilst I was speaking, Merna, in a quiet tone of voice, translated to the Martians sitting around us the purport of what I said; and I noticed that often he only had to say a few words and the Martians' sense of intuition enabled them to understand what was in his mind respecting my address and to follow my statements.

Now and then the Chief, or one of the tutors, would put searching and pertinent questions to me on various points, and these often brought out answers which appeared to excite their surprise and interest.

When I had finished, Soranho then took up the theme, going fully and thoroughly into the several matters I had dealt with; and he concluded by saying, "We must, of course, make every allowance for the present state of development of the terrestrials, but all the same I can scarcely understand how it is they are unable to see that, speaking broadly, their political and social systems are utterly wrong from beginning to end, and must necessarily be disastrous to the welfare of all. Of course, I speak from a Martian point of view.

"Here upon Mars the welfare of the whole community all over our planet is the first and most important consideration. The whole adult population, both male and female, have an equal voice in the discussion of all matters with which the governing Council are concerned. My office, as Chief of the Council, is held for a term of two Martian years; and I am not a ruler imposing my own will upon the people, but their trusted servant, appointed to supervise the carrying into effect of the people's wishes, as expressed by their votes and by their own appointed spokesmen.

"The whole of the land upon Mars belongs to the State, and is utilised strictly in the interests of the whole community; no one can hold it as a private possession, or use it for merely selfish purposes. A necessary corollary to the private ownership of land is the overcrowding of buildings upon small areas; and such general poverty and insanitary conditions as those in which so many of your population have to live in what you have termed your 'slums' are the inevitable outcome of such a system. Private ownership of large areas of land really involves also the practical ownership of the people upon it!

"I can assure you, Mr. Poynders, that no such overcrowding, poverty, or insanitary conditions will be found upon our planet, go where you will. Our people are well and comfortably housed, and you will find ample air-space and light around every dwelling.

"On Mars no office, rank, or privilege is hereditary. It is true we have amongst us persons of different ranks or
grades, but such honours as these can only be gained as the reward of meritorious and useful services, and can only
be held by the person who has earned them.

"We have no need of an army or navy, for we are all one united nation; so all the enormous expenditure which
is wasted in your world in international rivalry and warfare is entirely avoided here, and schemes for the general
welfare of the people benefit instead. Ages ago we abandoned war as a folly and a crime; and our world-wide
system of canals, which is a prime essential to our very existence, could never have been accomplished or
maintained if one section of our population had been at war, or was likely to be at war, with another.

"Apart from all other considerations then, our vast canal system is a guarantee of unity and of permanent
universal peace upon our planet; but, as I have said, we saw the folly of war, and abandoned it ages ago.

"Then, as regards the terrible curse of drink which you have mentioned; if such ever existed on Mars, it must
have been in the most dim and distant past, for we have no records of such a dreadful state of affairs as you have
described as being even now one of your most difficult problems to deal with. The absence of any excesses of this
kind may, perhaps, help to account for the fact that our population is strong and healthy, and few die of anything but
old age.

"There is no such thing here as poverty or lack of employment. There is work for all who are able to do it; and
those who, by reason of age or infirmity, are unable to work, are all honourably provided for, so that they can live in
the same comfort as though they did work. This is not charity or privilege, but the absolute right of all.

"Neither is there any over-working of any individual in our population, for the ordinary working day here is
only six hours—about equal to six hours and ten minutes in your world. No one need work longer than this except for
his own pleasure; all the remainder of the time can be devoted to rest or recreation. No one need work at all when
his powers are failing, as he will be amply provided for."

"But," I asked, "how do you manage with regard to those who will not work? They are our most difficult
people to deal with, and constitute a great burden upon the community."

Soranho seemed astounded at this question, and exclaimed, "Is it really possible that such beings can exist?
Here no one able to work would dream of living an idle and useless life; their natural self-respect forbids it!

"I must, as I said, make allowances for your slower rate of development; but I cannot help thinking that for ages
past our people must always have been upon a higher plane than terrestrials.

"You have been deploring the decrease in the birth-rate in your country, apparently because it places you, as
regards population, in an inferior position to other countries, the inhabitants of which may at some time become
your enemies. Yet, at the same time, you have told us that a very large number of your people are living in poverty
and misery, that the population is too numerous for work to be found for all, and that many, being unable to find a
living in their own country, have gone out, or been sent out, to distant lands.

"What a tragedy this all is! If you had universal peace and reasonable hours of work, as we have, there would
be no need for this striving to effect an unnecessary and useless increase in the population; and, by doing so, you
are, in fact, only adding to your own poverty and other difficulties. A healthy and hardy population, which can be
properly provided for and maintained, is what your country requires. On Mars you will find very few families with
more than three children!

"Then, as regards trade. Your international rivalries and systems of what you term 'protection' seem specially
designed to hinder trading, and to make it as difficult as possible, instead of encouraging the free interchange of
commodities to the benefit of every one.

"You tell me," he continued, "that it is really the interest and desire of your nations to trade with each other, and
that immense sums are spent in building ships and docks, and otherwise in facilitating trade. Yet I learn that tariff
barriers are erected between some of the nations, and that tariffs are continually increased, for the purpose of
restricting trade! As a consequence, goods are either kept out of the countries affected, or artificially increased in
price; the poor being half starved, or compelled to live upon inferior food!

"In addition, it appears that the collection of the tariffs involves the upkeep of an army of customs officials, the
performance of whose duties is the cause of delay, harassment, and irritation to all who come within the sphere of
their powers.

"How much more useful it would be if that expenditure were devoted to the extension of trade and the uplifting
of the people!

"Really, Mr. Poynders, when I think of all these things, I can only say you must not expect the Martians to
admit your claim that terrestrials are 'highly' civilised; for surely no 'highly' civilised people could act so illogically
and so unwisely, or be so wantonly cruel as to tax the food of the poor!

"Such a policy must inevitably result in misery to the many, and reduce the stamina of the present and future
generations.

"Your people have attained a high degree of civilisation in some things, but not in others; and as they become
more advanced, they will look back on their past policy with feelings of amazement, and will, I am sure, regard it in exactly the same light as the Martians do now. I can only express the hope that their enlightenment will soon come."

It is useful sometimes to be enabled to see ourselves as others see us, and I was now learning how the Martians regarded us.

In defence of my own world and country, however, I pointed out that many of our thinkers and workers saw these matters in much the same light as he did, and were endeavouring to educate their fellows in the same views. Many were opposed to wars, and to the social conditions now prevailing; but it would be vain to look for any great change in the near future. An alteration in human nature must first be effected, and that must necessarily be a matter of very slow growth.

I went on to inform him that one of our great poets had written a splendid "vision of the world and all the wonder that would be," in which he described our world as progressing:

"Till the war drum throbbed no longer, and the battle flags were furl'd In the Parliament of Man; the federation of the world."

"Mars," I remarked, "had already reached this ideal state of affairs; but it could not possibly be brought about in our world until a far distant future: for it must be the result of slow development and gradual education of the people to see its necessity and practicability.

"Any attempt to make a sudden change would only result in tumult and worse disasters than we were exposed to at present. Any changes in regard to our land system must also be carried out by degrees, and after the most careful consideration, with the view of preventing any injustice being done to the present holders.

"Our poet," I further said, "evidently had in mind the probability that, before this consummation of universal peace could be reached, wars of a more terrible nature than we have ever known would take place, for he pictures:

'A rain of ghastly dew From the nations' airy navies grappling in the central blue.'

"It is not unlikely that the possibility, or the actual occurrence, of such horrors as these may eventually bring about the cessation of war between the more civilised nations; and, as the uncivilised are gradually brought under control, there may be federations--not necessarily amalgamations--of two or more nations. In the slow process of time these may unite in larger and more comprehensive federations, until at last the whole world will be embraced within them. This, of course, is looking ages ahead of our present times.

"Few thinking people amongst us can regard war as anything but a direful necessity arising out of our present conditions; only the thoughtless and those who batten upon such disasters can rejoice in the idea of what I have heard termed 'a jolly good war!'

"Whatever our ideals may be, we must, as sensible people, act in accordance with the demands of existing circumstances. It has been well said that while we have a large criminal population we must protect our persons and property by means of bolts and bars, and the maintenance of a police force; and in a like manner, whilst we are exposed to risk of war breaking out--perhaps through no fault of our own--we must maintain sufficient forces and armaments to cope with any forces which might be likely to be arrayed against us. This, however, does not afford us any excuse for not trying to do all we can to remove the causes which tend to manufacture criminals, or to bring about wars.

"If only as much energy and effort were used with the object of averting wars by smoothing away difficulties and removing causes of friction between the nations as there is effort and persistency on the other side to aggravate, and even invent, conditions likely to cause mutual irritation, distrust, and dislike, much good would accrue. Nations depend largely for their prosperity upon their trade with other nations, and peace is the greatest interest to all; yet the actions of some noisy and hysterical sections amongst them are a constant source of danger, and are calculated to bring about wars which must inevitably prove most disastrous to all concerned.

"Our religion," I told him, "inculcated peace and goodwill to all men; all of us professed to believe in that. It is a good sign that there is a strong tendency amongst the religious teachers of various bodies to unite in the endeavour to promote peace amongst the nations, and many of them have done much to call attention to the urgent need of social reforms, and have sacrificed their lives in arduous work for the benefit of their fellows.

"On the other hand, some of them are very militant, whilst others seem to regard it as their special mission to keep social matters as they are. If this is the case amongst the teachers, it is no wonder that the people themselves are so slow in progressing!"

The Chief here expressed the hope that I was unduly pessimistic in regard to our rate of progress, and remarked that "He thought a great advance would be made much earlier than I seemed to anticipate. Events," he added, "were evidently likely to move very rapidly indeed in several parts of our world; and he was certain that a great upward movement would soon follow."

I replied that "I sincerely hoped that such was the case, and that the great experience of the Martians with regard to the progress of ideas certainly enabled him to express a truer and more prophetic opinion than I could
possibly venture upon. At the same time I knew how difficult it was to bring about changes of ideas and systems amongst large masses of the people; but notwithstanding all these things, I was of the same opinion as a great poetical countryman of my friend M'Allister's, who long ago wrote:

'It's coming yet, for a' that, That man to man, the whole world o'er, Shall brothers be, and a' that.'"

Eleeta showed her interest in her own sex by asking what part our women took in the endeavour to improve our social and political conditions; and seemed very surprised when I said they had no voice in the election of members of our Imperial Parliament, although many of them took an active part in any work for the amelioration of our social conditions.

I then gave a short account of the women's suffrage movement, and was speaking of certain unwise actions of the militant party, when she suddenly interrupted me by throwing up her hands and exclaiming--

"Oh, Mr. Poynders, do not say any more upon that point! I wish to think well of your women and to make all allowances for them, but no Martian women could possibly behave in the manner you have described; their innate self-respect is too great to allow such conduct.

"We should all feel degraded in the eyes of our husbands, brothers, and sisters, if any such things occurred here; but they are quite impossible!

"Your women are entitled to a full share of the responsibilities connected with the election of members of your state councils, just the same as we have; but surely there are other and proper means of obtaining their rights and privileges without resorting to such childish and unwomanly tactics as chaining themselves up, pestering high officers of state, and forcing their way into your council chambers."

I assured her that the majority of our women, both rich and poor, took exactly the same view as she did on this matter, and were utterly opposed to the methods adopted by the few, even where they themselves were in favour of the franchise. Many, however, were so distressed by the conduct of militant women that they opposed the franchise altogether. The pity of it all was that the militant suffragettes seemed to glory in shocking their sisters' susceptibilities.

Eleeta then said that "For the sake of her sex she was glad to learn that such behaviour did not meet with general approval; still, she hoped that before long our women would be enabled to take up their proper position in connection with the election of our state councils."

After a little more desultory conversation, the Chief thanked me for what he was pleased to term "the interesting statement with which I had favoured them."

The meeting then broke up, but I observed that John, who had been sitting with Siloni all the time, seemed to find himself in very congenial company, which he was not at all anxious to quit.

On our way home Merna took me fully into his confidence and told me of his hopes respecting Eleeta, at the same time giving me many particulars concerning the beautiful young lady upon whom he had bestowed his affections.

CHAPTER XX
THE SECRET OF THE "CARETS"--THE SUN AS SEEN FROM MARS

The next day, accompanied by Merna and Tellurio, we started off at an early hour on an air-ship trip to the northern edge of the Sinus Titanum.

This is really the bed of an ancient sea, from which all water has long since disappeared. Nearly all the blue-green patches which are seen on the planet by our observers are also old sea-beds, and they are now the most fertile areas upon its surface.

The object of our visit was to inspect the machinery and apparatus by which the water is lifted and forced along the canals; and remembering what Merna had told him, M'Allister was looking forward to seeing them with eager anticipation.

Professor Lowell has arrived at the conclusion that, owing to the shape of the planet and other conditions, gravitation upon Mars is in a state of stable equilibrium, and that consequently water would not flow by gravitation, as it does upon our earth, but merely spread out as it would on a level floor. If turned into a canal it would not flow along without artificial propulsion, except so far as it might be carried by its own "head."

We found, on inquiry, that this conclusion is very nearly correct, but there is just a small amount of gravitation which is sufficient to produce an extremely slow movement of the water in the canals.

[Illustration: From a Globe made by M. Wicks Plate XII
MARS. MAP V.

The dark wedge-shaped area near the centre is "Syrtis Major." It was on the desert area to the left of this that Professor Lowell discovered several new canals on 30th September, 1909.]

I have already mentioned the discovery of the "carets" which exist in certain places on the planet. They are seen as small V-shaped markings which are dark in tint; and perhaps might better be described as resembling our
Government's "broad-arrow," the central line representing the end of a single canal which enters the caret centrally.

Professor Lowell is of opinion that these carets must fulfil some important purpose, as they only appear where some of the canals connect with the dark areas of the old sea-beds. He is quite right in this conclusion, for they are very important indeed in connection with the working of the canal system.

They are, in fact, all situated on or adjoining the slopes of the sea-beds, and the dark sides of the V are really two high embankments covered with dense vegetation, and thus are sufficiently conspicuous to be seen through our telescopes. The whole encloses an area on each side of the canals within which large and important engineering works are situated.

The canals which run along the bottom of the sea-beds are, of course, at a much lower level than the adjoining red area, and the canals on the latter area are therefore at a higher level. Those canals which cross the sea-beds cannot be carried by means of viaducts or embankments so as to place them upon the same level as the canals on the red areas, because that would defeat the purpose of irrigation, which is their chief use. It is therefore necessary to lift the water from the low-level canals and discharge it into those upon the higher ground.

This is accomplished by means of apparatus somewhat resembling an American "grain-elevator," on a large scale; and it consists of a long series of very large buckets, V-shaped in cross-section, attached to endless chain-bands, which, as they are carried round by the machinery, scoop up the water from the low-level canals and carry it up to the requisite height, from whence it is automatically discharged into the high-level canals. Of course it will be understood that the ends of the latter canals are entirely closed by embankments so that no water can pass that way.

The buckets are an enormous size, and the electric machinery by which they are kept in motion is of the most ingenious description.

Besides this there is an immense amount of equally ingenious electrical machinery for forcing the water along the canals.

Merna and Tellurio showed us all over the area, and carefully explained the construction and working of the various machines. I do not think M'Allister ever spent a more enjoyable time in his life, for he went about amongst the different machines examining them with the keenest interest and manifestations of delight; and his note-book was in constant requisition for making sketches and notes of what he saw.

We noticed that he was frequently smiling and chuckling to himself as if he were intensely pleased; and presently he came over to us, rubbing his hands together in high glee, and said to John, "Heh, mon, I reckon I see my way to making a fortune when we return home, out of the ideas and wrinkles I'm getting here from the work of the Martian engineers!"

John laughed, and congratulated him heartily on his brilliant outlook for the future, remarking that he did not appear to regret coming to Mars.

"Indeed, I don't," M'Allister replied; "I'm thinking it will prove the very best thing I've done in my life."

"Well, sir," said Merna, "I told you those machines would suit you as an engineer; are you satisfied now you have seen them?"

"More than satisfied," answered M'Allister; "they are the most extraordinary and most ingenious machines I ever saw, and I wouldn't have missed them for anything!"

At the sides of each high-level canal we saw a series of locks and weirs so constructed that vessels can pass on, in successive stages, from the high-level to the low-level canals, and vice versa.

These locks and weirs are all within the area enclosed by the embankments forming the carets, which accounts for the long and extensive space the latter cover, as the locks are necessarily a considerable distance apart from each other to allow for a length of canal to be traversed before the next lock is reached. They are, however, not in themselves sufficiently conspicuous to be separately discerned from the earth by our telescopic observers.

Machinery for forcing the water along the canals is also provided at most of the junctions everywhere on the planet. In this connection it must be remembered that the water is carried by the canals from one hemisphere to the other, and, after passing the equator, must therefore move in a direction contrary to that of ordinary gravitation.

Thus at one season of the year the water passes from the north polar regions down into the southern hemisphere, and at the opposite period of the year it is carried in the same way from the south polar regions right into the northern hemisphere.

Gravitation being almost non-effective as regards the flow of water on Mars, the movement would be extremely slow everywhere were it not for the machinery, which adds to the speed of the flow. The average rate of the movement of the water in the canals is about fifty-one miles a day, and it takes about fifty-two days for the water to pass from about latitude 72° down to the equator, a distance of 2650 miles.

This rate of flow, as indicated by the darkening arising from the growth of vegetation which follows the flow of the water down the canals, has been observed and noted many times at Flagstaff Observatory.

It was now perfectly clear to us why the "carets" are only seen in the particular places in which they have been
observed by Professor Lowell and his colleagues. They are, in fact, only needed in connection with water-lifting apparatus, and locks and weirs, at the places where high-level canals connect with those at a lower level!

We were all very pleased at finding the solution of a problem which had been much discussed between us without arriving at any satisfactory conclusion.

John then asked Tellurio if he would be good enough to explain to us how it was that our observers on the earth saw some of the Martian canals doubled at some periods of the year and single at other times; and sometimes one of the twin canals was seen alone, and at other times the second one only was visible.

"It is a very simple matter, sir," replied Tellurio. "You will understand that we do not wish to waste any of our water, and as it is quite unnecessary to use all our canals at the same time, we only use those which are actually required. This arrangement also allows us to have a much greater depth of water in the canals than would be the case if they were all in use at once.

"Many of the canals are only required for irrigating seasonal crops; so as soon as the requisite amount of moisture has been acquired by the soil the water is turned from that canal into another one, passing through an area where a later seasonal crop is to be grown. This arrangement, moreover, applies not only to our double canals, but also to very many of the series which you have regarded as single canals."

Thus the mysteries connected with Mars were being cleared up one after the other; and having regard to the very simple and natural explanations we received, we could not help laughing as we talked the matter over and recalled the immense amount of discussion and wrangling which had occurred amongst our scientific men in connection with these matters, and especially at the difficulty they seemed to experience in believing that the canals could exist at all. Then there were those charges and theories of overstrained eyes, diplopia, and defective focussing, to say nothing of other suggestions. Well, I will not say any more upon this point.

In continuation of our discussion of the canal question, I asked Tellurio "Whether the canals and irrigation system had been the means of reclaiming any large areas of land which had previously been deserts?"

"Oh yes, sir," he answered, "that has been the case in many parts of our world; some very large areas indeed which were once deserts have now become very fertile. Quite apart from such reclamations, however, our canals and irrigation systems have also effectually checked the spread of desertism. If it had remained unchecked, probably by this time the entire surface of our planet would have become a desert."

I then explained that I asked the question because our observers had seen and noted upon their charts several large areas which seemed to have become fertile. Thus, along the eastern side of Thaumasia it had been noted that, during a period of about twenty-three years, the green area had advanced at least 400 miles nearer to the place we called the "Solar Lake." On measuring this area on the map it appeared to me that at least 200,000 square miles which had previously been desert had become fertile.

Similar extensions of vegetation had also been charted in several other places, for instance, on the east side of the large area known to us as "Syrtis Major." I had, however, been rather surprised not to have come across any comment by our scientists on the significance of this very large increase of fertile land, as, taken in connection with the great canal system, it seemed to me very significant and full of meaning.

Merna, continuing his remarks, then said that "Lately considerable extensions of their canal system had been carried out. New canals had been dug, others altered or extended, and vast areas had been considerably changed by replanting in some places and fallowing in others. The result of all this work," he said, "would produce a striking alteration in the configuration of some of the dark areas. Such changes," he remarked, "were carried out very rapidly, so rapidly indeed that it would probably be almost incredible to terrestrials; but it must be remembered that excavation, loading and removal of soil, as well as most other operations, were accomplished by special machinery. He had no doubt these changes would be noted by our observers, as Mars was so favourably situated in regard to the earth at the present time. Besides this," he continued, "many of our canals have been dealt with, and some of them will disappear, either temporarily or permanently."

"Well, Merna," said John, "if that is the case our observers will soon miss them; and I can imagine some of them gazing on your planet through their telescopes and exclaiming, 'Lo! here is the symbol of the death of Mars. Where we used to see canals there is now only blank space; the canals are disappearing, and the Martians must be rapidly decreasing in numbers and no longer able to maintain their vast canal system; or perhaps their water supply is diminishing so rapidly that it is becoming insufficient to keep the canals in working order; so ere long all life upon Mars must come to an end!"

"If that should be so," said Merna, "they will be altogether wrong in their surmises, for the disappearance of several of our canals will not indicate death but life. Some of those canals will only be temporarily put out of use, but others, having served their purpose, will be discontinued permanently. They are like our flowers that have done blooming, which may be allowed to grow again next season, or the ground may be fallowed and fresh flowers planted elsewhere; so the vanished canals may be succeeded by fresh ones where they are needed; and when your
people see these new canals they will know that they indicate the continued existence of vigorous and enterprising life upon Mars."

We then started upon our return home, and on the way I drew M'Allister's attention to the smaller size of the sun as we saw it now as compared with the size it appeared to us when on the earth. I told him that Mars was then about 131,000,000 miles from the sun, so the sun's apparent diameter was only about 22-1/4 minutes.

On the earth that day the sun's apparent diameter would be about 32 minutes. So to the Martians the sun only appeared about two-thirds the size it appeared to the people on the earth.

When, on 13th August this year, Mars was at its "perihelion," or nearest point to the sun, the latter was 129,500,000 miles distant, and would appear rather more than 22-1/2 minutes in diameter.

At the opposite point of its orbit, where it will be in "aphelion," or farthest from the sun, the sun will only appear about 19 minutes in diameter.

I then explained that, although the sun is so distant, Mars receives a very much larger percentage of the total heat and light available than we do on the earth, because of the thinness and generally cloudless condition of the atmosphere. It is estimated that our atmosphere and clouds shut out nearly 50 per cent. of the light and heat which would otherwise reach us in the course of the year. On the other hand, their "blanketing" effect considerably lessens the amount of heat radiated into space; thus, by keeping in the heat we have received, compensating to some extent for the original loss in quantity.

But, owing to its thin clear atmosphere, Mars receives nearly 99 per cent. of the total amount of heat and light proceeding to it from the sun; so that, although the sun is more distant from the planet, the warmth on Mars does not compare so unfavourably with the warmth on the earth as many have imagined it to do.

M'Allister replied that "He had expected to find it very cold indeed upon Mars in consequence of its distance from the sun, but was surprised to find it so warm," and added, "what you have now told me, Professor, explains why this is so, and I can only say that at present I find the climate a delightful one--pleasantly warm, yet bracing and invigorating. Even in the tropical regions, although it is hot, it is not the oppressive and enervating heat that I have experienced in the tropics on our own world."

He then remarked that "He knew the planets all moved through space and had read that some of the stars did too, and he would like to know whether our sun had any motion in space?"

"Yes," I replied; "as the result of a long series of observations and calculations it has been determined that the sun is moving through space and carrying with it all the planets in our system. Its rate of movement is not known with certainty, but it is estimated at about 1,000,000 miles a day. Whether it is moving in a straight line or in a vast orbit around some far distant sun is also an open question, and it may take centuries to arrive at a definite result. This motion of our sun, rapid though it is, is very slow compared with the motion of some of the stars. One that appears only a small star to us, but which is probably a sun enormously larger than ours, is moving through space at a rate which cannot be less than 200 miles a second; and unless that movement is direct across our line of sight its rate must be still more rapid. Yet it is so enormously distant that, in 500 years, it would only appear to have moved over a space of one degree on the sky! It is calculated that Arcturus moves still more rapidly.

"The movements of several other stars have been calculated; but the distance of the stars is so enormously great that the majority appear to have no movement at all, though probably not one of the heavenly bodies is at rest."

"It is estimated that the light of the nearest star we know of takes at least four years to reach the earth, yet light travels at the rate of 186,000 miles a second. We know of others whose light takes centuries to reach us, and, with regard to most of the stars, the light we see probably left them thousands of years ago."

"It is only when a star is so near to us that the earth's revolution in its orbit is sufficient to cause a change in the apparent position of the star which can be measured with our instruments that any calculation can be made to determine its distance from us. In nearly all cases where the distance has been calculated, the change in position is so minute and difficult to measure accurately, that the results obtained can only be regarded as very rough approximations to the real distances."

"The universe is infinite in extent, and the human mind is quite unable to conceive what is really implied in the distances of the planets belonging to our own solar system; yet they are as nothing when compared with the distances of the fixed stars, either from the earth or from each other. We equally fail to realise the immense numbers of the stars. The camera, it is estimated, shows at least one hundred millions in the heavens; and our great telescopes can penetrate through inconceivable distances of space and render visible millions which the smaller instruments fail to reveal. Every increase of instrumental power, however, carries us still farther, and reveals more and more stars in deeper depths of the illimitable abysses of space.

"In these matters there is no finitude, for though with telescopic aid:

'World after world, sun after sun, star after star are past, Yet systems round in myriads rise more glorious than
the last: The wondrous universe of God still limitless is found, For endless are its distances, and none its depths can..."
CHAPTER XXI
OUR FIRST VIEW OF THE EARTH FROM MARS--A MARTIAN COURTSHIP

Within a few days we had our first glimpse of the earth from Mars. It appeared only as a very thin but bright crescent of light, as the lighted portion was less than one-twelfth part of the whole diameter of the disc, and it was only visible for a very short time.

Owing to the clear and thin atmosphere of Mars there is very little scintillation of the stars, and the crescent form of the earth at such periods as the present can plainly be discerned without the aid of a glass. To the Martians this is more readily seen than by us, as their eyes, being larger than ours, have a much greater light grasp.

For the same reason all the stars shine much brighter than they do in our skies, and many of the smaller ones which can be seen from Mars with the unaided eye, would here require a low power-glass to render them visible to us. The fact that Saturn has a ring is quite apparent to the Martian eye.

Day by day after this we saw the lighted area extending upon the earth, just the same as on the earth Venus can be seen with a telescope gradually to pass from the crescent phase to the gibbous form, and ultimately become full. Our earth is a morning and evening star to Mars the same as Venus is to the earth, according to its position with regard to the sun.

Whilst we were looking at the earth, I asked Merna "Whether he had ever seen the earth transit the sun as we occasionally see Venus or Mercury do so?"

He answered that "He carefully observed the last transit, which occurred on a date equivalent to our 8th May 1905, and was very interested in watching the earth pass, as a small black spot, across the sun's disc. The moon did not commence to cross until 6 hours and 7 minutes later, by which time the earth had passed over three-quarters of the sun's diameter. The earth was 8 hours and 42 minutes in transit, and the moon, which crossed a little lower down, was 8 hours and 31 minutes in crossing."

"That must have been an interesting sight," said John, "and I should like to have the opportunity of watching a similar transit."

"I am afraid you never will," said Merna, "for the transits only occur at long intervals. The previous transits occurred in November 1879, November 1800, May 1700, and May 1621. There will not be another until May 1984, and the next after that will not occur until November 2084."

"I am sorry to hear that," remarked John, "for even if I stayed here, I should not be likely to live long enough to see the next transit. Possibly you may do so, Merna; you are so much younger than I am."

"Yes," Merna replied, "it is not unlikely that I may see another such transit, for the average length of our lives on Mars is about equal to one hundred and thirty of your years, so that leaves me an ample margin of time."

I then went on to remark that as another result of the thinness of the Martian atmosphere twilight is much shorter than on the earth, the light being less diffused when the sun is below the horizon, and refraction also considerably less than we experience.

In this connection, I mentioned to M'Allister that we can often see the sun and the moon apparently above the earth's horizon when they are, in fact, below it. This is caused by the refractive power of our dense atmosphere, which has the effect of making both the sun and the moon appear a little higher up than they really are.

"That is something new to me, Professor," exclaimed M'Allister; "and I cannot say I quite understand how refraction, as you term it, has the effect you mention."

"It may help you, then," I answered, "if I tell you that water acts very much in the same way; and there is a simple and fairly well-known experiment you might try for yourself, which would make the matter perfectly clear to you. It is as follows:--

"Take a teacup and place a shilling at the bottom of it, then move back until you quite lose sight of the coin. Ask some one to pour some clean cold water gently into the cup, and, as it fills, the refraction of the water will apparently reduce the depth of the cup, and thus bring the coin fully into view. In much the same way the refraction of the atmosphere enables us to see the sun or the moon when those bodies are actually below the horizon."

"Thank you, Professor," said M'Allister; "I will try that little experiment at the first opportunity."

I then told him that at the time when the moon is just full it may rise towards the east just as the sun sets towards the west. Both orbs cannot be wholly above the horizon at the same time on such occasions, but, owing to refraction, we are able to see them both.

The sun and moon both appear flattened or oval-shaped just as they are rising or setting, in consequence of the effects of atmospheric refraction. These effects are usually most noticeable near the horizon, because the object is seen through the densest layers of air. But we never see a star in its true place in the sky, because the rays of light which come to us from the star are bent or refracted as they pass through our atmosphere, just as a stick appears to be bent when thrust down into a deep pool of clear water.
All these effects, however, add to the work of astronomers, because they must be taken into account in connection with their calculations.

* * * * *

As the time passed on, I day by day became more interested in Merna's relations with Eleeta.

"All the world loves a lover," and we elderly people are always pleased to note the progress of young folks' love affairs, especially if either of them is a relative of ours. In them we seem to renew our youth, for their enraptishments seem to carry us back to the halcyon days when we ourselves were young. When "Love took up the glass of time and turned it in his glowing hands" everything seemed of a rosegate hue, and we dwelt in the seventh heaven of delight, at peace with all the world and envying no one--for were we not the most happy and fortunate of mortals!

And then, to look upon a Martian courtship! To see the rich flushes mount to the cheeks of the lovers--their softly glowing luminous eyes, their absorbed attention in each other, and their mutual deference and response to the most slightly indicated wish! Ah, it was indeed a scene to gladden the heart of the father of one of them!

Eleeta's beauty, the sweetness of her disposition, and most charming and lovable ways endeared her so to me that I did not wonder Merna found them so attractive and satisfying; and my most fervent aspirations ascended for their happiness, both now and in the future.

With the Martians there is no false modesty about their courtships; all is natural, proper, and dignified; every one may see and every one enters into the true spirit of the thing. Mere flirtations, such as we are so familiar with, are quite unknown, as they would be contrary to all the natural instincts of the people. Everything upon Mars is honest, true, and straightforward--open and above-board. This must necessarily be so, in consequence of the Martians' powers of intuition, for any attempt at imposition or deceit would at once be detected.

I had an illustration of this when I asked Merna, "How they dealt with their criminals?"

"We have none to deal with," he replied, "and you will understand why, when I tell you, that if any one committed a crime, however small, and it was desired to find out the offender, it would be impossible to escape detection. He might fly to the other side of our world, but the intuitions of our experts would at once make them aware of his hiding-place; besides, he could not conceal what was on his mind from any one with whom he associated.

"In the earlier times when only a small proportion of the Martians were endowed with these powers to any large extent, there were occasional crimes; but as they were always detected, crime soon ceased to exist.

"Thus you will see that, quite apart from their high standard of morality, the Martians soon found that crime was a folly."

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There was another love affair apparently developing which did not afford me so much satisfaction as that to which I have just alluded.

I noticed that John and Siloni were very frequently together; and, whatever might be the case with the latter, I had very little doubt that John was smitten with his companion's charms. It was, perhaps, nothing to be wondered at, for Siloni was indeed a very nice girl, with beautiful features, dark hair, and dark eyes; whilst John was well-built, fully six feet in height, with black hair and moustache, and very good-looking; altogether a fine and attractive man, and it had often been a matter of surprise to me that he had never married.

Still, such a complication as this had never entered my mind when I came to Mars, and I was rather perplexed to know how best to deal with the situation. However, I thought it would be well to wait a little while and see how the matter shaped itself before taking any action.

CHAPTER XXII

CELESTIAL PHENOMENA SEEN FROM MARS--M'ALLISTER RECEIVES A PRACTICAL LESSON IN GRAVITATION

Mars is really an ideal world for an astronomer to live in, its skies being so clear, the air so thin and pure, and the stars shining so brilliantly.

Besides these advantages, the rapid movements of the two satellites of the planet result in a constant succession of celestial phenomena which afford very frequent opportunities for most interesting observations. Changes in the phases of the two moons, eclipses, occultations, transits, &c., are constantly occurring, so there is nearly always something to attract our attention to the Martian sky.

We have already seen several of these phenomena, and I will now describe what we have observed.

Early one evening when we were out with Merna, we looked up at the sky and saw the two moons a considerable distance apart, but approaching each other from opposite directions, Phobos appearing to move very rapidly. Both were near the full phase, Deimos being more nearly full than Phobos; and we watched them drawing closer and closer together till Phobos passed right in front of Deimos so as to hide it entirely. This is termed an
occultation; and both the satellites had become full when the occultation occurred; but when they were again clear of each other both were beginning to wane.

This sight may be seen anywhere near the Martian equator about every ten hours.

The movements of Phobos seemed very peculiar to us who had lived upon the earth and seen all the celestial bodies appearing to move in the same direction.

I have already alluded to the fact that Phobos is only 3700 miles above the surface of Mars, and moves so rapidly that it makes more than three complete revolutions round the planet whilst the latter is turning only once on its axis.

The effect of this very rapid revolution of the satellite, which has no counterpart, so far as we know, in our Solar system is that, instead of rising in the east and setting in the west as all the other heavenly bodies appear to do, Phobos appears to rise in the west, cross the sky, and set in the east.

The moon and planets all actually move from west to east; the apparent reverse of this being caused by the more rapid movement of the earth on its axis, giving the other bodies the appearance of moving from east to west. If, however, our moon is closely watched, and its position with regard to a fixed star carefully noted, it will be found that in the course of a short time its real movement has been eastward, and that its position with regard to the fixed star has changed, although the revolution of the earth has appeared to carry both westward.

Phobos is 36 miles in diameter. Its actual period of revolution round the planet is 7 hours and 39 minutes, but, owing to the movement of Mars on its axis in the same direction, it appears to take a few minutes over 11 hours to complete one revolution.

Near the equator, Phobos is seen above the horizon for about 4-1/4 hours, and is below it about 6-3/4 hours. According as the place from which it is viewed is farther from the equator so will the time of visibility of Phobos be decreased, until when latitude 69° is reached in either hemisphere, it will cease to become visible at all. This is owing to its nearness to the planet; and, Mars being small, the curve of its sphere is sharp, so that the horizon is more limited than on the earth, and the satellite is shut out from view anywhere above latitude 69° by the body of the planet.

Another peculiarity is that, when in the zenith, Phobos appears twice as large in area as it does when near the horizon, and notwithstanding its very small size, Phobos appears rather larger than our moon, because it is so near to the planet.

The length of the Martian "night" is about 12 hours and 20 minutes, and during this very short time Phobos may be seen to rise in the west, set in the east, and rise again once more in the west. Consequently it will be evident that it must travel very rapidly across the sky. It really moves over a space of 32-1/2° in a single hour—a great contrast to the slow and stately movement of our moon, which only passes over half a degree in an hour.

Moreover, Phobos may be seen to rise as a new moon, pass through its phases to the full, wane, and again become new, all in the course of a single Martian night; or it may be seen twice full and once new during the same time.

Even this does not exhaust the list of phenomena, for, being so close to Mars, Phobos is very frequently eclipsed by the shadow of the planet. On the other hand, the sun may be eclipsed by Phobos something like fourteen hundred times in the course of a Martian year; and, as already mentioned, the other satellite is often occulted by Phobos—sometimes when both may be only at the half full phase, and these occultations look very peculiar.

Deimos, being only 10 miles in diameter and about 12,500 miles from the surface of the planet, does not give rise to so many phenomena as the nearer satellite: still they are very numerous.

It revolves round the planet in 30-1/4 hours, but appears to take 131-1/2 hours to do so, being above the horizon about 60 hours, and below it nearly 72 hours. These are the times as seen from the equator; but, as in the case of Phobos, the farther the place is from the equator the shorter is the period that Deimos is seen above the horizon, until, when latitude 82° is reached in either hemisphere, it ceases to become visible at all.

Our moon, being so very much more distant from our earth, could be seen from both the poles.

Deimos also passes nearly twice through all its phases whilst it is above the horizon, viz. during about 60 hours, and may be seen twice full and twice new in that time.

Eclipses of Deimos by the planet and occultations of it by the other satellite are very frequent. Being so small, it can never cause an eclipse of the sun, but it transits the sun as a dark spot about one hundred and twenty times during the Martian year.

This is really a very inadequate list of the phenomena connected with the satellites, but it will be seen that the number is enormous compared with the few eclipses of the sun or moon seen on the earth during the course of one year. Certainly Mars is an astronomer's world!

Merna heard my statements respecting these movements and phenomena as I explained them to my two friends; and when I had finished, he remarked, "You seem to be fairly well posted in these matters, sir?"
"Yes," I said; "thanks to our astronomers, both professional and amateur, all these things have been very carefully calculated; and, with the exception of a few doubtful points, we probably know nearly as much about them as the Martians themselves do."

M'Allister then turned to me and said, "Professor, you told us that the two satellites of Mars revolved round the planet in a certain time, but in each case you afterwards said they appeared to take a much longer time to do so. I'm rather puzzled to understand how that can be."

"It's really a simple matter, M'Allister," I answered, "and I think I can make it clear to you. While the satellite is making one revolution round the planet the latter is turning on its axis in the same direction as the satellite is moving, following it up in fact; and you will I think understand that in these circumstances the people on that part of the planet where the moon is visible must necessarily keep it in view for a longer period than would be the case if the planet were not revolving in the same direction.

"You have been used to being on board a ship; so suppose your vessel was steaming twelve miles an hour and there was another vessel at anchor just twelve miles ahead of you, you would reach it in just one hour, would you not?"

"Yes, certainly I should," replied M'Allister.

"Now," I continued, "suppose that the other vessel, instead of being at rest, was moving away from you at the rate of six miles an hour; after you had steamed one hour it would still be six miles ahead of you, and it would take you exactly another hour to catch it up. So you would be just double the time reaching it when moving as compared with the time required to do so when it was at anchor. This is very similar to the cases of the satellites of Mars, and much the same thing happens in regard to Mars and the earth. If they are opposite to each other at a certain point, Mars will have taken much more than one revolution round its orbit before they will be opposite to each other again, because they are both moving in the same direction. Do you see it now?"

"Yes, Professor," he replied. "I know now, because you have cleared it all up. It's simple enough when one understands it."

Merna then asked me if I would like to see some of their astronomical instruments, and, on my replying that I should very much like to do so, he took us to an observatory where Corontus was at work.

I was at once struck by the small size of the telescopes; and, on inquiring about them, Corontus told me that very large instruments had long become obsolete, for these small ones could be used for all the purposes for which a large one had been required, and gave better results.

I examined one of them and found, to my surprise, that it embodied the very ideas that I had long been trying to carry into effect. With this view I had made many experiments, as it seemed to me that it ought to be possible to construct an instrument of moderate and convenient dimensions which would show as much as our monsters will show, and yet be capable of being used with low powers when occasion required. I had endeavoured to attain this result by the aid of electricity, but failed to do so. Evidently I had missed something, but here was the thing itself in successful working, as I found upon testing it.

On looking at some drawings of Saturn, which were hanging up in the observatory, I noticed that this planet was depicted with two faint outer rings which do not appear on our drawings of the planet. One of these rings has, however, been discovered by M. Jarry-Desloges, but the outermost ring is still unknown to our observers. This ring is a very broad one, its particles being widely scattered, hence its extreme faintness.

The Martians have also discovered two planets far beyond the orbit of Neptune, and their knowledge of the other planets and also of the sun and the stars is far ahead of ours.

I was also shown a comet which had recently become visible through their telescopes, and found from its position that it was undoubtedly Halley's comet, for which our astronomers were so eagerly watching. I wondered whether any of them had been fortunate enough to discover it early in August, as the Martian astronomers did. Its last appearance was in the year 1835.

John remarked that "He thought Halley's comet might be termed 'Britain's Comet,' for several of its appearances had coincided with the occurrence of very important events and turning-points in our national history, such as the Battle of Hastings, the Reformation, &c.;" and he added, "as it will be a conspicuous object in our skies in 1910, I wonder whether any important event will occur in our country? In 1835, when it last appeared, we had a political crisis!"

"Well, John," I replied, "I do not attach much importance to comets as affecting mundane affairs; we have got rather beyond such beliefs as that. Besides, when we left England early in August things were going on all right in our political world, and there was no indication of any serious crisis."

"Still," said John, "it would be rather curious if we did have a crisis next year; and I should not be surprised!"

As we were walking home next day, M'Allister suddenly tripped over some little projection and fell prone to the ground. John ran to his assistance and raised him up, at the same time asking "If he were hurt?"
"No, not at all," said M'Allister; "I seemed to fall so lightly that I scarcely felt it when I touched the ground."

"Ah, M'Allister!" I exclaimed, "if you had fallen like that upon our earth, I think you would not have come off quite scatheless. You see, upon Mars the gravitation is much less than on the earth, being only three-eighths of what it is there, so one does not fall so swiftly, nor so heavily, as on the earth.

"You can prove that very easily. Just take up a stone and hold it out higher than your head, and let it fall; at the same time note, by the second hand of your watch, how long it takes for the stone to reach the ground."

He did so, and said that "As near as he could tell, the stone was just about one second of time in passing from his hand to the ground."

"Just so," I replied. "On Mars a falling body only moves through a space of about six feet in the first second of time. On the earth, however, the gravitation is so much greater that a falling body passes through a space of a little over sixteen feet during the first second.

"In addition to that, although you weighed twelve stones when on the earth, you only weigh about four and a half stones here upon Mars. Now you can understand why it was you seemed to fall so lightly."

"Yes, Professor," he replied, "and I'm glad I fell here, and not upon the earth!"

Then, picking up the stone again and throwing it high in the air, he watched its fall, and turning to me, remarked, "Professor, you were quite right; that stone seemed to be quite a long time coming down again, much longer than it would have been on our own world."

"Well, M'Allister," I replied, "now you know for certain that upon a small planet gravitation really is much less than upon a larger planet of the same kind.

"That's another little wrinkle for you, and you have found it all out through tripping over a stone!"

"Losh, mon," replied he, "I seem to have learnt something almost every day since I have been here; even a tumble down teaches me something!

I then drew his attention to the birds flying near us, and pointed out that they had a much wider spread of wing than our birds have, and that this was owing to the fact that the air being so thin a wide spread of wing was absolutely necessary to support them in the air and enable them to fly. I further explained that, if the gravitation upon Mars were as great as upon the earth, the birds' wings must necessarily have been still larger, as the pull of the planet would have been so much the greater, and would thus have prevented the birds from flying at all in such thin air if their wings had been small.

"M'Allister," I then remarked, "you will, no doubt, have noticed the same thing with regard to those large and beautiful butterflies we have seen. Why, the outspread wings of the largest must have measured ten or twelve inches across, and many of the smaller varieties were more than six inches across. I wonder what our naturalists would say if they could see some specimens of these large and splendidly coloured insects!"

"Well, Professor," he answered, "I never saw such large butterflies anywhere else, not even when I was in the tropics on our own world. It had never occurred to me that gravitation, or even the density of the air, had anything to do with their size. Even now I do not understand how it is the small insects are able to fly, for they are heavy for their size, and do not possess very large wings, yet they can move very swiftly."

"Let me explain then," I answered. "Large birds can only move their wings with comparative slowness, and it is therefore necessary that their wings should be large enough to keep their balance and be able to fly. Their wings are somewhat in the nature of aeroplanes, and they shift them to different angles to take advantage of the varying currents of air.

"In the case of humming-birds and small insects, the wings are capable of intensely rapid vibrations, so rapid indeed that, when flying, the wings are almost, if not quite, invisible. This intensely rapid movement enables them to fly, and is somewhat analogous to the rapid movements of the vertical spiral screws, which you have seen on some of the Martian air-ships that screw their way up into the air.

"Such rapid movements would not be suited to larger creatures, because their muscular powers would have to be so enormously great that their bodies would require to be larger and heavier in proportion. They would thus be very unwieldy."

CHAPTER XXIII
I HAVE A SERIOUS TALK WITH JOHN

For some days past it had been becoming more and more evident to me that John was quite infatuated with Siloni, and also that she was not unwilling to receive his attentions. I could, therefore, no longer remain a silent spectator, so took the first opportunity of our being alone to broach the subject to him.

I began by saying, "John, have you any idea of remaining upon this planet for the rest of your life?"

He looked round at me and flushed up. Then, after a little hesitation, said, "No, Professor; why do you ask such a question as that?"

"Because, John," I answered, "it seems to me a very necessary question to ask. If you are going away from here
very shortly, what is the meaning of your attentions to our handsome young friend Siloni? You must excuse my speaking of this, but I do not like to see you placing yourself in a false position. Don’t you think it would be wise to see a little less of the lady in question during the remainder of your stay here?"
"Well, perhaps so, Professor," he replied rather reluctantly. "I never thought it would come to this with me, considering that I am now on the wrong side of forty. It has been said that a man does not know what love really is until he has passed that age, and certainly I never did. Candidly, Professor, I must confess that I am very hard hit; and I know pretty well now what it means to be over head and ears in love with the most charming girl I ever met in my life!

"Do not imagine I have not seen the difficulty of the situation; but, really, I am puzzled to know what to do for the best. I am sure that dear girl would have me, and if I take her to England——"

"John," I interrupted, "my dear boy, what can you be thinking of? How is it possible that you can take to England as your wife a Martian girl, who stands considerably over seven feet in height!

"Even supposing it were possible that she could live in the atmosphere and climate of our country, she would be entirely isolated from every one, and, moreover, would be an object of public curiosity wherever she went.

"It would really be most unjust, humiliating, and cruel to Siloni; and you would be made very unhappy owing to the way she would be treated."

John looked down and fidgeted his feet about on the floor as he pondered in deep thought for some minutes, then looking up at me, he said, "I suppose you are right, Professor; you generally are; and that I have been rather foolish; but really I was thoroughly caught in the toils before I realised it. Now, what would you advise me to do in the matter?"

"I should advise you now as I did at first," I replied--"see less of Siloni. I suppose you have not actually spoken to her on the subject yet?"

"Oh no," he answered quickly, "I have not gone so far as that; but Siloni must be aware of my regard for her."

"Well, that being the case," I said, "you cannot very well say anything now, for it would place her in a most awkward and unpleasant position. You cannot tell her you were going to propose, but have thought better of it. Your only course, John, is to keep away from her as much as possible without appearing to do so intentionally."

"But won't she think it very strange behaviour on my part if I avoid her now, after being so much in her company?" he asked desperately, as if in hopes that I might not press him to give up the idea of continuing as before.

"No, John, I do not think so," I replied. "You know she is a Martian, and if she has not already some intuition of the situation, the very next time you see her this trouble will be on your mind, and she will become aware of the exact position of affairs; and I have no doubt she will accept the situation, though it will probably cause her considerable pain. You should have thought of all this sooner, my boy. It is a great pity this has happened, but there is no help for it now, and no other honourable way out of it that I can see. I am, however, extremely sorry for you both."

"Thank you, Professor," he exclaimed, grasping me fervently by the hand; "but it is very hard luck indeed."

He was very quiet and self-absorbed for several days after that, but things turned out just as I anticipated. The next time he and Siloni met and conversed together, she became aware of the change in him, and divined the reason of it. She said nothing, but he knew she understood; and, except that she was quieter, she never made any difference in her behaviour towards him when they met occasionally afterwards.

So, though I was sorry in some respects, I was very glad that this awkward matter was settled.

CHAPTER XXIV

THE MARTIAN SEASONS

Our earliest records of Mars date back to a very remote period, viz. 2300 years before the birth of Christ! Professor Hilprecht, in the course of his investigations on the site of the ancient city of Nippur, made extensive excavations, and dug down and down through the ruins until he had penetrated through those of no less than sixteen different cities, which, at various times, had been built one over the other. He unearthed the famous Temple of Bel, together with its great library, consisting of over 23,000 tablets, containing the chronicles of Bel.

When a number of these tablets had been deciphered, they were found to contain a complete system of philosophy, science, and religion, and proved that those ancient people knew many things about astronomy, and in some of the fundamental matters would not have much to learn from astronomers of the present day. These tablets contained, amongst other things, records of observations of Mars! It is claimed that Chinese records go back to a still more remote date.

Since the discovery of the telescope our knowledge of Mars has gradually extended, and its general surface configuration is now well known to all students of the planet.

[Illustration: From a Globe made by M. Wicks Plate XIII
MARS. MAP VI

"Syrtis Major" is seen on the extreme left just below the Equator. "Sabaeus Sinus" is again in view just to the right of the centre, thus this map completes the circuit of the Globe of Mars.]

The polar snow-caps were early depicted on drawings, also some of the dark areas; especially the striking one
which has been known as the Kaiser Sea and the Hour Glass Sea, but is now usually termed Syrtis Major. It has an
outline somewhat resembling that of India; and, if we include the southern portion, it is nearly as large in area.

Our maps of Mars are now practically uniform as regards the naming of the places marked upon them. Formerly this was not so, as each country had its own map and the places marked thereon were named after different astronomers, and usually after those belonging to the country in which the map was prepared. Much confusion arose from this practice, because the same spot on Mars might have a different name on each map; thus it was difficult to identify any particular spot when only the name was known.

Some international jealousy also arose owing to the patriotic desire of observers to identify particular spots upon Mars with the names of the great men of their own country.

To remove this cause of friction and misunderstanding a system has now been almost generally adopted of giving classical names to Martian markings. Some of these are of portentous length and strange spelling, but still the adoption of a uniform nomenclature has been a great convenience to observers and others who have occasion to use or refer to the maps.

On looking at a complete chart of the planet it will be seen that the largest area of dark patches (which are believed to be areas capable of supporting life) is situated in the southern hemisphere, and that several of these are wedge-shaped, with the points trending northward. On the earth it is just the opposite, the largest area of land being in the northern hemisphere, and the wedge-shaped masses trend southward.

Our earth's surface comprises an area of about 193,000,000 square miles, of which some 143,000,000 square miles are water, and the remaining 50,000,000 square miles land.

Mars has a surface area of about 56,000,000 square miles, about 35,000,000 square miles being desert, and the remaining 21,000,000 square miles land which may be habitable, as most of it is covered with vegetation. There are no large areas of water anywhere upon Mars. This calculation, however, makes no allowance for the lines of vegetation which cross the desert, and contain canals, and, with the oases, may have a very large population.

From the 50,000,000 square miles of land upon the earth must be deducted the very large areas which are frozen during the greater part of the year, and also the large areas which are deserts or bare rocks. This would probably bring down the really habitable area to about 30,000,000 square miles.

Making a similar deduction in the case of Mars, but remembering that more of the regions near the poles would be habitable during part of the year than is the case on the earth (as there is practically no permanent glaciation and the temperate zones extend nearly to the poles) the habitable area would be reduced to, say, 15,000,000 square miles.

It will thus be seen that although the total surface area of Mars is only rather more than one-quarter of that of the earth, the area of its habitable land, even under its present unfavourable circumstances, amounts to about half of the habitable area of the earth.

Looking at Mars from this point of view, it does not contrast so unfavourably with the earth as is usually thought, especially when it is remembered how small a proportion of the earth's area is really populated.

Were it not for the great eccentricity of the planet's orbit, the seasons upon Mars would be very much the same in the different zones as they are on our world, as the inclination of the planet's equator is only very slightly less than that of the earth. According to the latest determination, the inclination in the case of Mars is 23° and 13'.

As the Martian year is nearly twice as long as ours (being 668 Martian days, which are equal to 687 of our days) the seasons are of course proportionately longer in duration. The eccentricity of the orbit, however, causes a much greater difference between the lengths of summer and winter in the two hemispheres.

* * * * *

In the northern hemisphere of Mars, spring lasts 191 Martian days; summer, 181 days; autumn, 149 days; and winter, 147 days.

In the southern hemisphere spring lasts 149 days; summer, 147 days; autumn, 191 days; and winter, 181 days.

Thus, in the northern hemisphere spring and summer together amount to 372 days, and autumn and winter to 296 days.

In the southern hemisphere, however, spring and summer have 296 days, whilst autumn and winter last 372 days; so that the winter period of the year is 76 days longer than in the northern hemisphere.

On the earth the winter portion of the year is seven days longer in the southern hemisphere than it is in the northern hemisphere.

For this reason, our south polar snow-cap is larger than the north polar cap; and we should naturally expect to find a similar condition upon Mars, only greatly accentuated. Astronomical observation shows that this is the case, for while the northern snow-cap on Mars attains a maximum diameter of slightly under 80°, the southern snow-cap attains a maximum diameter of over 96°. The snow-caps are not perfect circles, but irregular in shape, and are, moreover, not exactly opposite to each other.
Notwithstanding its much greater area the southern snow-cap melts to a greater extent than the northern snow-cap does, owing to the intensity of the heat at the melting period. The northern snow-cap usually melts until the diameter is reduced to about 6°, whilst the much larger southern cap may be reduced to about 5°. In the year 1894 it disappeared entirely! The summer must have been unusually hot.

So far as can be gathered from the records of our whaling and polar expeditions, it would appear that our north polar snow-cap is from 20° to 30° in diameter when at the minimum; whilst the southern snow-cap is nearly 40° in diameter when smallest.

We had arrived upon Mars on the 24th of September 1909, according to terrestrial reckoning; but according to the Martian date it was then the 26th of June in the southern hemisphere, where Sirapion, our landing-place, is situated. The season was, therefore, midsummer, and as Sirapion is in latitude 25° south and in the sub-tropical zone, the temperature was fairly high. The mornings were much more clear and brilliant than those on our earth; the warmth and general “feel” of the air at that time reminding me very much of what it is like in the south of England between seven and eight o’clock on a hot sunny day. Those who enjoy an early morning walk know how delightful and exhilarating it becomes towards that time. There is neither chilliness nor uncomfortable heat; one feels a delightful sense of freedom and that it is good to be alive. This is really the best and most enjoyable time on a summer’s day. On Mars there was rather more warmth but a greater sense of exhilaration. Of course, from near noon to about 3 P.M. it was much warmer.

Usually a lovely rosy effulgence is seen in the atmosphere in the mornings and evenings. As a rule, sunrise and sunset effects are much more ethereal and more beautiful than those on the earth, the tints being more delicate and the whole appearance of the sky less broadly marked. It is as the difference between the crude broad effects of a coloured poster and the delicate effects of a highly-finished painting.

What, in our sunsets, would appear a deep golden colour appears on Mars as a delicate pale gold, merging into bright silver. What with us is a carmine or deep rose, in Martian skies becomes a beautiful rose-pink; whilst the darker, or Indian, red seen for some time at the latter period of our sunsets is carmine in the Martian sky, and Indian red only appears just at the last.

These tints are seen when the skies are of their normal clearness, but after the occurrence of a great sand-storm in the desert and the upper air has become filled with fine sand particles, the Martian sunsets are equal in variety and depth of colour to anything seen on our earth during the months immediately succeeding the Krakatoa eruption. Those strange and intensely coloured sunsets will doubtless be remembered by my readers who had the good fortune to see them during the many months after that great volcanic outburst in the year 1883.

Sand-storms have been unusually prevalent on Mars during the present summer, passing over large areas of country and obscuring the sun for considerable periods; so we have had several phenomenal sunsets afterwards.

As the time passed on the days became cooler—the evenings being considerably more so than on our earth in August, and twilight was very much shorter. Towards the end of the Martian August evening dews began to be succeeded by slight hoar frosts.

The heat in the tropics is not nearly so intense as on the earth. On the other hand, in the high latitudes near the poles, the summer temperature is higher than in similar latitudes on the earth, because upon Mars there is no permanent glaciation except right at the poles.

We have, of course, seen the Martian polar stars. The axial tilt of the planet being less than that of ours, and in a different direction, and its orbit being inclined 1° and 51' in regard to the earth’s orbit, it follows that the poles of Mars must point to a different part of the sky, and a considerable distance from our polar stars.

In the northern hemisphere of Mars the polar star is a small one marked on our maps in the constellation of Cepheus, and it is almost on the boundary between that constellation and Cygnus. The pole star lies nearly in a line joining the brighter stars [symbol] Cephei and [symbol] Cygni.

The south polar star is a small one marked [symbol] in that part of the large constellation of Argo Navis which is termed Carnia.

Although the polar stars are very small, they shine more brightly in the Martian skies than the north polar star does to us, and are therefore more easily seen.

CHAPTER XXV

MANY THINGS SEEN UPON MARS—I RECEIVE SOME NEWS

During the remainder of our stay upon Mars we visited almost every important place upon the planet, either by means of air-ships, motors, or by travelling along the main canals in splendidly equipped electric boats.

We passed through the whole length of the Eumenides-Orcus, from its starting-point on the Phoeniceus Lacus, in the southern hemisphere, to the Trivium Charontis, in the northern hemisphere—a distance of 3540 miles, this being the longest canal on the planet. We visited the Solis Lacus, or "Lake of the Sun" (an area larger than England),
situated in the southern hemisphere, which has usually been seen by our observers as a large dark patch, oval in shape. Indications of changes in this area were, however, noted at the time of the opposition in 1907; and it is not improbable that further alterations will be seen shortly.

Numerous important towns exist upon this area, and several canals connect it with surrounding areas.

We visited the north pole in our air-ship, and saw the snow falling thickly, and rapidly adding to the size and thickness of the snow-cap, it being winter time. We visited the south pole and watched the fast-melting snow (the cap being almost at its minimum size) and the distribution of the resultant water down the various broad channels which conduct it to the canals, from whence it is carried all over the planet.

When it is spring in the northern hemisphere the winter snow-cap at the north pole will begin to melt in like manner, and the water be distributed in a similar way. The melting begins about the 1st April and lasts till July, and sometimes considerably later in the year.

Thus, during the Martian year there are two distributions of water—one from the north pole and one from the south pole; and the growth of vegetation follows the passage of the water as it flows downwards from the poles to the equator.

Our earth vegetation progresses in an exactly opposite direction. Beginning near the tropics, where it is always summer, as the sun passes northward of the equator so vegetation gradually appears and develops onwards towards the north pole. It is exactly the same in the southern hemisphere; after the sun crosses the equator into the south the vegetation grows and spreads towards the south pole.

The reason of this is that on the earth the supply of water by rainfall and snows is abundant, and it only requires the warmth of the sun to cause vegetation to spring up again at the proper season when the winter has passed.

On Mars the sun has the same action, but until the water comes down from the poles and furnishes the necessary moisture, the sun can produce no effect and there can be no fresh vegetation. Thus, on Mars, the flow of water is the determining factor, and vegetation follows its course from the poles towards the equator.

Observation shows that this is the case, and it has formed one of the strongest arguments in support of the idea of water conveyance by means of artificial canals. The opponents of the canal theory seem carefully to avoid any mention of this argument.

While we were watching the melting of the snow at the south pole, I mentioned to Merna and Tellurio, who accompanied me, that one of our scientific men, relying for support on a speculation by a lady writer, had arrived at the conclusion that the snow-caps could not possibly supply anything like the amount of water required. The writer in question had stated that the maximum area of the southern snow-cap was 2,400,000 square miles; and, assuming it was composed of snow of an average depth of twenty feet, this would only give an average depth of about one foot of water over its whole area.

The whole of the dark areas on the planet covered at least 17,000,000 square miles, and as this was seven times the area of the snow-cap, it followed that the dark areas could not be covered with more than two inches of water. From this scanty and inadequate supply of two inches of water allowance must be made for an enormous loss by evaporation; so, as the writer said, "the polar reservoirs are despoiled in the act of being opened."

Tellurio at once settled the matter by saying, "Mr. Poynders, it is a very pretty theory, but, unfortunately for its supporters, it is entirely wrong, the figures being inaccurate, and the estimate of the extent of the area to be supplied, as well as the amount of water available, is made under a complete misapprehension of the facts."

[Illustration: From a Globe made by M. Wicks Plate XIV
MARS. MAP VII

The white area at the top of this map is the south polar snow-cap, at about its usual maximum size. In some hard winters it attains a diameter of considerably over 100 degrees.]

"The maximum area of the south polar snow-cap is usually more than 10,000,000 square miles instead of less than 2,500,000 as stated, but it is sometimes still greater during a hard winter. Then, where did the writer acquire the notion that the whole of the dark areas had to be covered with water? Only the canals and trenches have to be filled, and, at the highest computation, these would cover only 2,250,000 square miles! So even accepting her average of twenty feet depth of the snow (which would give about one foot of water over the whole area of the snow-cap), there would still be sufficient water to fill every canal and trench upon our planet to a depth of nearly four feet six inches.

"Let us suppose we have 700 series of canals, each averaging 1400 miles in length, and each series having an aggregate width (including the area of the irrigation trenches) of 2-1/4 miles. You will see that gives about 2,250,000 square miles to be covered with water. My estimate of the area to be covered is, however, much in excess of the real amount, as the average aggregate width of the series of canals would be less than I have assumed, and the trenches are shallow.

"I must also point out that only a small proportion of the whole number of canals would be in use at any given time, and the depth of the polar snows averages considerably more than twenty feet; so a very much greater depth of
water can be secured in those canals which are in use. The main canals which are used for navigation purposes are, of course, much wider and deeper than the irrigation canals. In the hotter regions many covered compensation reservoirs are provided, and these make good the wastage caused by excessive evaporation where pipes cannot be used."

"Thank you, sir," I said; "the information you have now given me entirely confirms the figures as to the area of the snow-cap, &c., mentioned by Professor Lowell, but as regards the depth of the snow and the size of the area to be covered, he has with scientific caution refrained from estimating to the full extent which the facts you mention seem to warrant. In addition to this, no allowance has been made for the water derived from the northern snow-cap."

Thus vanished the theory which was supposed to support the view that the canals must be hopelessly unworkable, and could never be of any use for irrigation purposes.

It had also been argued that no intelligent beings would construct canals if the planet were generally flat, as it would only be necessary to let the water flow over the surface as far as it would go, and thus irrigate the parts reached by the water; whilst if it were not flat, the canals could not be constructed at all.

I asked Tellurio "What he thought of this suggestion?"

He replied, "Well, sir--here we have a planet believed to possess only a very scantly supply of water, which must require the most careful husbanding and economy in distribution; yet it seems to have been calmly suggested that we would deliberately waste the precious fluid by allowing it to flow at random over the small portion of our land which it would reach, where it might or might not be required! Our engineers, I may say, are quite capable of overcoming any difficulties arising from inequalities of the ground.

"If, as has been contended, the loss by evaporation would be so great in canals where the water is fairly deep as to result in depletion of the supply, it is clear there must be a hundred times greater loss from the same cause if the water is allowed to spread in a very shallow pool over a large area where it would be totally unprotected from the sun! Then, again, every part of our planet not reached by the water would become desert."

"No, sir," Tellurio added, "the Martians are far too intelligent to waste the water in this fashion: hence their canal system by which the water is economically distributed where required, and also protected from undue evaporation. It must not be forgotten that our canals are also means of communication across the deserts, and without them distant parts of the planet would be entirely isolated from the rest of our world, except for our air-ships."

"Our canal system has been a matter of slow growth and development. Beginning with the straightening of the beds of old rivers and narrow channels connecting seas, the canals were then constructed where they were most needed; but as time passed on, and our water supply from rainfall became less and less, we were convinced of the necessity of adopting a complete system of canalisation in anticipation of the time when our polar snows would be our only source of supply. This was gradually carried into effect, and even now additional canals are being constructed to meet the requirements of places not reached by existing canals."

"In order to secure the return of the water to the poles, and so ensure a future supply, it is absolutely necessary that, wherever possible, the water should be conveyed in open channels so as to allow evaporation to take place, otherwise much would be lost by soakage into the soil."

"Thank you, sir," I said; "those statements meet another objection which has been urged against the possibility of the canals existing; it apparently being assumed that the whole system must have been carried out simultaneously, and that the population of Mars would have been much too small to admit of that being done."

"Our population is by no means small, sir, having regard to the size of our planet; and the Martians, as intelligent beings, have always been in the habit of looking well ahead to ascertain what provision would be required to satisfy our prospective needs. Your people take far too narrow a view of these matters."

Thus many controversial matters were satisfactorily cleared up by statements of actual facts.

During our journeys over the planet we came across a large number of canals in different parts which have apparently not yet been discovered by our observers. These were not all narrow lines of canals, and many of them were double ones, so our observers have more work yet before them in finding out these lines and recording them on their charts.

Professor Lowell, who has made many experiments in order to determine how distant a fine line of known thickness (such as a telegraph wire) may be situated and yet remain visible to the sight under ordinary atmospheric conditions for clear seeing, has come to the conclusion that when Mars arrives at its most favourable position for observation, and other conditions are satisfactory, it will be possible to see lines on the planet which are not more than one mile in width.

As regards the surface characteristics of Mars, we found that it is generally very flat, and that only here and there one comes across slight undulations, whilst hills and mountains are very few indeed. There are, in fact, no high mountains anywhere; the highest altitudes rarely approach 2000 feet, and such heights as these are quite exceptional.
This was quite in accordance with our expectations, because no mountains have ever been seen upon Mars, though they have been carefully searched for by our observers. If there were any elevations much exceeding 2000 feet in height they would have been visible sometimes when the planet was passing under the careful scrutiny of our observers, and they could not have entirely escaped observation.

In all probability Mars never at any time possessed mountains whose height would be at all comparable with that of our mountains; for, according to scientific calculation and reasoning, the planet’s internal heat was never sufficient to have caused the formation of such high elevations on its crust.

As the planet advanced stage after stage in its development it became colder and colder; all upheavals ceased, and the height of any elevated parts upon its surface would thenceforward be gradually and continuously reduced by weathering and erosion in the same way as has happened in many places on our own world. We have no very high mountains in the British Isles at the present time, but geology and physical geography teach us that many of the low elevations now existing are merely the basic wrecks and remains of mountains which, in ages past, must have been of considerable altitude. As the world ages and becomes colder its surface will tend to become more and more level, and the rivers will become straighter in consequence.

As regards animals, we discovered that the larger varieties have become extinct, and that there are at present no animals which can properly be termed wild or fierce, for they cannot exist in the deserts without water or vegetation. Numerous animals, however, frequent the irrigated parts where there is vegetation, and, though in a complete state of freedom, have for such an extremely long period been in constant contact with the people that they have become quite tame. The people always treat animals with kindness, and these free creatures are entirely without fear of them.

Most of the animals are different from any we have upon the earth, but some bear a general resemblance to ours of the same species, though they are all of larger size, and differ considerably in details. Like the people, they have developed through the long ages, and have reached a higher point than our animals, and a few have even developed the power of speech.

This may sound exaggerated— but just think! Many of our birds have been taught to speak the human language, and a few have even acquired this power by imitiveness. Who that has kept dogs, cats, monkeys, and horses has not observed the desperate efforts of some of them to make themselves understood. All are not alike, but we often come across an animal which seems to understand almost everything we say, but none has yet developed the power of making an intelligible communication to us, although some try hard to do so. It does not seem beyond the bounds of possibility that a few thousand years hence some animals, especially the monkey species, may be able to speak a little.

The Martians do not use any of their animals as beasts of burden, and it would be contrary to all their ideas to do so. On Mars nearly all heavy labour is performed by means of electrical machines, thus both the people and the animals are spared much heavy work.

Our animals are often greatly overloaded, but we have a salutary law to protect them from this, as well as from other forms of cruelty; and the persons responsible for the ill-treatment may be punished.

Human beings, however, may be overloaded and, in many cases, overworked with impunity, for there is no law to protect the unorganised workers. Is there not something wrong about this?

It may be argued that whilst animals cannot protect themselves human beings can; but, alas, only too often the force of circumstances compels workers to endure anything so long as they can earn a little to keep body and soul together.

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Flowers seem to be very plentiful here, and grow very tall and large. Many varieties bear a strong resemblance to our variegated lilies, the flowers being brilliantly tinted, and often measuring twelve to fifteen inches across. But, as upon the earth, flowers are found in all colours and sizes, and in infinite variety.

Trees also grow very tall, many varieties resembling our palms, especially in and near the tropics, where there are also many varieties of cactus. In the temperate and cooler zones trees resembling our firs and pines are plentiful; whilst fruits, vegetables, and nuts, as well as cereals, are grown in enormous quantities on the irrigated areas, as these products form the chief articles of food amongst the Martians.

Insects are numerous on Mars, the conditions being very favourable to insect life; and they are all on a very much larger scale than our insects, especially those which fly.

Everywhere we go we are received by the people with the utmost courtesy and kindness, and have become much attached to those with whom we have been more closely associated. They are indeed a most amiable, intelligent, and lovable people—always good tempered—dignified, yet ready to display great enthusiasm when occasion requires.

The marriage tie is sacred and indissoluble on Mars, and divorce is therefore unknown; but it is also quite unnecessary, for no cause ever arises for a dissolution of marriage.
When Merna was telling me about this, I asked him whether any attempt had been made to dispense with marriage in any Martian community, stating that some of our advanced people were disposed to do so.

He answered that "Some such ideas had been in vogue amongst certain of their nations about two thousand years ago, and attempts were also made to abolish religious observances, but they proved complete failures, and engendered strife. No nation adopting these views ever progressed or prospered; the people were soon clamouring for the revival of their old institutions, and since then no one had ever desired to dispense with them. Both religion and marriage are essential to the stability and well-being of all nations, and the people are soon lost without them. You may be assured," added Merna, "that those on your earth who favour such a change are quite mistaken in thinking it would be an advance in civilisation, for, on the contrary, it would result in a reversion to barbarism."

The Martian educational system is very thorough. In their earlier years the children all receive a good education in general and scientific knowledge, then they pass into the technical, trade, and business schools. Every kind of business and trade is thoroughly taught by teachers who are not mere doctrinaire professors, but persons who have made their mark as good, capable, and practical workers in the particular trade or business which they are required to teach.

We went over several of the ordinary and trade schools, and found them fully equipped with everything likely to be required for a thorough educational course of training.

In the warmer zones we found several large open-air amphitheatres capable of accommodating from 10,000 to 100,000 persons. All around the central arenas of these were rings of beautiful scented flowers and shrubs. Both children and adults spend much of their leisure time in open-air recreation and athletic games, and I was therefore not surprised to find them all so bright and happy, as well as robustly healthy in appearance.

As a result of our visit, the Martians now enjoy a new out-door recreation; for M'Allister, pressing John into his service, has initiated them into all the mysteries of golf, for which pastime their level country is well suited. I have been much amused to note that, whilst M'Allister has always expressed great admiration of the mechanical skill of the Martians, they have risen in his estimation at least 100 per cent. since they have taken so enthusiastically to his national game, and he is never tired of telling us what a "sensible" people they are!

He has taken up their training with all his Scottish vim and thoroughness, and has insisted upon the full rigour of the game. All attempts to Martianise its various technical terms he has courteously, but firmly, suppressed; the Martian vocabulary has, therefore, been considerably extended by the addition of the numerous fearsome technicalities which sound so strange, even to an Englishman who is not familiar with the game. Whatever may be the ultimate result to the Martians, there is no doubt but that M'Allister is most thoroughly enjoying himself.

Tellurio informed me that their medical men have very little to do in the way of curing ailments, their studies and efforts being mainly directed to the prevention of disease; consequently disease and illness are very rare, and many of the diseases which afflicted the people in past ages have been entirely eradicated.

The use of radium as a medical accessory has been known to them for a very long period, and they are able to prepare and utilise it without the slightest risk of any untoward results.

Another large factor in ensuring a strong and healthy population is the methodical system they adopt in planning all their towns. We in England have only recently realised the necessity of town-planning and the advantages of garden cities. On Mars, however, town-planning has been most systematically carried out for centuries; all their towns are glorified garden cities, presenting a happy combination of beauty, utility, and healthfulness.

The general arrangement is as follows: On a circular area, varying from one to five or more miles in diameter, according to circumstances, is the central portion of the town, containing the splendid administrative and business buildings, museums, winter-gardens, educational establishments, and places of amusement, as well as many fine residences. Surrounding this area is a wide ring-canal, on the farther side of which is the outer zone of the town, united to the central portion by many wide and handsome bridges. On the outer zone are extensive residential areas, then a zone of factories and workshops, and beyond that an area often extending for miles, which is covered with cereals and vegetables, fruit trees and nut trees. Outside all is a zone of timber trees. The town and its surroundings, therefore, cover a vast area.

The canals radiate in all directions from the outer edge of the wide ring-canal, and all quays, wharves, and warehouses are alongside of these canals. Thus the ring-canal is kept quite clear of all such buildings, but all round both sides of it are beautiful terraces of white stone, with numerous pavilions, broad boulevards, winter-gardens, and promenades.

All the buildings have open spaces or gardens around them, thus securing ample allowance of light and air. Smoke is quite unknown; no noxious gases or vapours are discharged into the atmosphere from any of the factories, but all such emanations which cannot be absolutely destroyed are purified, condensed, or otherwise dealt with within the buildings. Thus the air is always kept pure and wholesome.
From this description it will be seen that the planning of a town is very systematic, and that it much resembles a wheel. The hub is the central part of the town; the spokes are represented by the bridges; and the outer rim—a very wide one—contains the outer zones.

Besides the gardens there are large open spaces where air-ships have their stations, from whence they can start, or on to which they can descend. The air-ships, also, are usually constructed so that they can descend into the canals, on which they can not only float but be propelled.

Many of these town areas are the oases, about which so much has been said, and which, like many other Martian details, have been described as illusions. I only wish we had a plentiful supply of such illusions in our own old country!

One of the oases we visited was the Lucus Ascræus, in the northern hemisphere. A large number of canals converge from all directions on to this spot—seventeen of them are marked on our maps—so I expected to find it a place of considerable importance. It is, in fact, a very thriving business and manufacturing place—the Birmingham of Mars, besides being also one of the many centres of government. Like most of the manufacturing towns, it is near the tropical region—because the Martians derive most of their heat and power from solar emanations which they have discovered, and these they store up and transmit to very distant places for use when required. Nearly all the places on Mars to which several canals converge are busy centres of trade and contain large populations.

There are numerous large towns near the canals on all the dark areas, differing only in detail from those on the oases, the general plan being the same.

I remarked to John that “I thought the towns on the dark areas ought to show as rounded spots slightly darker in tint than the surrounding dark areas. Where several towns were close together they would probably be seen as a single spot, large in area and irregular in shape. It seems strange that, except for a few shown on Professor Lowell’s charts, they have not been seen by our astronomers; but perhaps during the present near approach of Mars to the earth some of our keen-sighted observers who possess large instruments may see and take note of many more of these dark rounded spots, as they are very numerous, and new towns are in course of development.”

During the spring and summer a large number of the people find employment in the regions near the poles, especially those whose work is connected with the canal system and who have to see that the water from the melting snow-caps is turned into the proper channels and everything connected therewith kept in good working condition. All these workers, however, migrate to warmer latitudes as the very long and dreary winter approaches.

* * * * *

I have just received some interesting and very unexpected news which, as some writer says, "gives me furiously to think."

John and M’Allister came to me asking anxiously whether I had fixed the date for our departure.

I replied that we should probably keep to our original programme and leave about the beginning of December, but asked John why he was so anxious to know?

“Well, Professor,” he answered, “there is more than one reason for my question. I do not think our stay should be prolonged. Haven’t you noticed any change in us?”

I replied that “I had not seen any particular change or alteration in them, except that in build and general appearance they were becoming more like the Martians.”

“Yes, Professor,” exclaimed John, “that’s just it. I don’t know whether it is the Martian air or the Martian food, or the combination of both, but we certainly are becoming more like Martians every day. Our eyes are becoming luminous, our complexions and features are changing, and, by Jove! if I haven’t grown nearly two inches since we came here! If I go on like this I shall soon be such a giant that I shall not care to go back at all.”

“Really, John,” I said, “is it so bad as that? Now I come to look at you critically you certainly do look taller; and I can see a little luminosity in M’Allister’s eyes, and rather more in yours. I suppose, being the youngest, you are more susceptible than M’Allister or myself.”

“Yes, I think that must be the case, Professor,” remarked John.

“However,” I added, looking at him and smiling, “you told me there were more reasons than one, so I suppose you have kept the weightiest reason to the last.”

“Well, I don’t know about its being the weightiest reason,” he answered, “but we shall require nearly four months to accomplish our journey to England after we leave here, and I reckon that by that time my stock of tobacco will be pretty nearly used up. I have given a lot away to our Martian friends, and I’ve tried some of the native growth; it’s rather decent stuff, but not a patch upon my mixture.”

I burst out laughing in such a hearty fashion that it set them off too, as I remarked, “Ah, John, I had a shrewd idea that there was something more behind your anxiety than the fact that you were becoming Martianised.”

“Heh, John,” exclaimed M’Allister, touching him playfully on the shoulder, “the Professor had you all right that time, I’m thinking!” John blushed up to the eyes, and said no more.
Ultimately it was agreed that it would be well to leave Mars on the 1st December, according to terrestrial reckoning.

So that matter was settled; but, just after they had left, Merna and Eleeta came in, both looking very glowing and happy.

After the usual greetings and a few casual remarks, Merna announced that he and Eleeta were to be united in the coming autumn.

I was a little surprised at the suddenness of the announcement, but at the same time exceedingly pleased; so, embracing them, I congratulated them heartily and wished them every happiness; then they left to tell some one else the news.

But, as I have said, these things "gave me to think."

CHAPTER XXVI
WE WITNESS SOME WONDERFUL AERIAL EVOLUTIONS AND LISTEN TO MARVELLOUS MUSIC

Wherever we went we found new subjects for wonder and admiration, and fresh proofs of the high state of civilisation and development attained by the Martians. We had seen many evidences of their genius in engineering and mechanical undertakings, but we found that they excelled in every art and science, and their achievements made terrestrial accomplishments appear poor and even paltry by comparison. Whether we examined their sculpture, paintings, pictures, or photographs—which latter they take direct and at one operation, with all the natural tints—or whether we listened to music, our verdict was perforce the same—"We had not previously known anything to equal it."

We have all become fairly accustomed to seeing numerous air-ships moving in all directions across the sky in the daytime, but it still seems strange to us to see the lights of the air-ships flitting about the nocturnal sky.

I mentioned this to Merna, and he remarked that no doubt it did seem rather strange to us, adding that my mention of air-ships was singularly apropos of what was then in his mind, for he was just about to inform us that an interesting aerial display had been arranged and was to take place that evening, with the view of affording us some idea of Martian out-door entertainments.

We all expressed our thanks, and our appreciation of the kindness we were receiving from the Martian nation; and I ventured to suggest that probably we were indebted to him for a considerable proportion of it.

He answered that it was true he had taken some share in this affair and in a few of the arrangements for the functions we had already attended, but that many others had done the same, for it was natural to the Martians to do all in their power when any help was needed. As we were strangers from another world they all vied with each other in making suggestions and arrangements which would afford us pleasure, or help to enable us to see all that was possible in their world.

We were fully aware that this was the case, for we were received with kindness and welcome wherever we went.

Merna's affection for me seemed unbounded, and his love was shown in every action. Yet, like all the other Martians, he was never obtrusively demonstrative, everything being done in a quiet and natural manner. When on the earth his disposition had been very pleasing, but now his Martian nature seemed to have endowed him with a capacity for loving far transcending that of his human nature.

He was the same towards John, and we often spoke about it in Merna's absence, whilst M'Allister had become as much attached to him as we were.

Just before sunset Merna rejoined us, and we passed out of the city into the open country to a spot not far from the place where we had landed from the Areonal. Here we found a large concourse of people assembled, and their numbers were being added to by fresh arrivals every minute. On looking upwards we saw air-ships speeding towards us from every quarter. Some brought passengers and landed them, but it was evident that most of the air-ships were about to take part in the display, as they remained up in the air instead of coming down to the ground.

We met many Martians whom we knew, and were introduced to others, so the time passed quickly in interesting conversation.

As soon as darkness fell Merna informed us that the display was about to commence, adding that he had purposely refrained from giving us any inkling of its nature, as he thought the unexpected would afford us greater pleasure.

We were gazing upwards at the vast assemblage of air-ships, which were lit up by the ordinary lamps used when travelling at night, when suddenly the whole sky became brilliant with the glow of countless thousands of coloured lights, and the air-ships began to move into their allotted positions.

Every ship—and there was a very large number of them—was covered all over with electric lamps. Some of the ships had all red lights, others all blue, others yellow, and so on through the whole range of tints known to us, besides many tints which we had never seen before.
The evolutions began with the formation of simple geometrical designs, starting with a complete circle of immense diameter. Then, inside this circle of many-coloured lights other ships took up their position, and, before we were prepared for anything, a triangle of lights had been formed. It was clear that even in their amusements the Martians were scientific; for here outlined in glowing colours was the familiar geometrical figure of an equilateral triangle inscribed within a circle, perfectly worked out on a most gigantic scale, and very pretty it was. Quickly, another triangle was formed across the first one, the result being a six-pointed star; and so on with several other more elaborate geometrical figures. The rapidity and certainty with which these air-ships took up the requisite positions and showed their coloured lights in the appropriate places was marvellous to see.

After about a dozen geometrical figures had been formed there ensued a rapid and bewildering movement of the ships towards the southern vault of the sky. Coloured lights flashed and whirled about in what, for a few minutes, seemed chaotic confusion, then suddenly the chaos was transformed into order. The vessels formed up in long rows one below the other, each row having one distinctive colour: a little movement of the ships from the centre to each end, in a downward direction, and the straight rows were transformed into complete semicircles concentric with each other, their bases seeming to reach the ground. Then they closed together, and lo! right across the sky shone a perfect representation of a rainbow (an extremely rare phenomenon upon Mars) glowing in brilliant light, with every tint and nuance accurate, and a thousand times brighter than any rainbow we had ever seen. It was magnificent!

Further rapid movements followed: the semicircles were broken up; the large vessels now being arranged in a long straight line across the sky, with the smaller vessels in another line just below and in front of them. The electric lamps were then instantaneously extinguished, and all was darkness. But only for a moment; then from the top of every vessel numerous immense pillars of coloured lights shot upwards into the sky.

We gazed at this in some perplexity, wondering what it all meant, as the design gradually developed to its completion. Then John touched my arm, excitedly exclaiming, "Look, Professor; it is the spectrum of the sun!" Yes, that it was, and never had we gazed upon such an immense and glorious spectrum. We pointed out to each other the lines of hydrogen, sodium, strontium, and many others, all of which were truly depicted, both in colour and position. These lines were formed by the lights of the smaller vessels shown against the background of the lights on the large vessels, and we noticed that all the Martians around us quickly recognised what the lights represented.

Next we had a representation of the spectrum of Sirius, then that of Aldebaran, and after that a spectrum which we were unable to identify. Merna explained that it was the spectrum of their south polar star. A few others were shown, then the line arrangement of the ships was again broken up, the search-lights extinguished, and the coloured lamps once more shone out.

Many of the ships now rushed across the sky over our heads in all directions, and, after a few evolutions, the whole were seen arranged so as to form four immense concentric circles, with a considerable space between each ship.

The ships in the two inner circles then began to move slowly, and passed in two wavy lines alternately in front of one ship and behind the next ship in the outer circles, the serpentine movement gradually becoming more and more rapid; and most wonderful changes of colour were produced by the passage of the vessels past those lighted with lamps of another colour. Swifter and swifter became the speed until it seemed utterly impossible that these intricate movements could go on without resulting in a series of collisions and disasters. Yet, with all this bewildering whirling, twisting, and intertwining, the ships were guided on their courses with consummate skill and with an unerring accuracy which was marvellous to behold.

Another shake of the aerial kaleidoscope and the vessels were seen drawn up in three parallel lines on the east and three on the west. Then the search-lights again flashed out, filling the whole intermediate area of the sky with beams of brilliantly coloured light, which were caused to oscillate sideways and overlap, producing a most gorgeous intermingling of glowing colours. The Martians certainly had a complete understanding of all the peculiarities connected with mixtures of coloured lights.

Up to this time silence had reigned, for no sound came to us from this vast aerial fleet; but now there burst forth from both ranks of vessels strains of music of such ravishing sweetness that I and my two colleagues were quite overwhelmed. It seemed as though our mortal bodies were completely etherealised by the thrilling melodies which floated down to us from the upper air.

This was not all. When on the earth we had read of attempts to connect musical tones and chords with the chromatic scale of colour, it being suggested that each musical sound had its own distinctive tone-colouring. Now we saw it practically demonstrated, for each chord of music was accompanied by changes in the colours of the search-light beams; and on comparing notes afterwards John and I found ourselves agreeing that the colours shown appeared exactly to interpret what our inner consciousness seemed to evolve, but which we could not have expressed in words. It was like a scene of enchantment as we watched those immense bands of glowing colours.
changing so rapidly and synchronising with the chords of music. Merna informed us that the lights of each vessel were electrically controlled from the keyboard of one of the musical instruments on the ship.

This was followed by a piece resembling a grand chorale: then an intricate fugue was performed, the several movements being taken up in succession by the ranks on each side alternately, and apparently flung to and fro from one side to the other of that vast area in magnificent sequences and variations until it seemed that our human nature was so uplifted, and we were so filled with ecstasy, that we could bear no more.

Many of the instruments were quite different from anything we had known upon the earth, and when some of these were unaccompanied the music sounded exactly like a grand choir of Martians singing in the heavens. It really seemed to us quite impossible that this concord of sweet sounds could be instrumental music, so perfect was the vocal effect.

Several other pieces were played, each having its own distinctive character; then, after a short interval, the search-lights were suddenly flashed on to the city of Sirapion; the beautiful buildings with their domes, towers, and minarets looking exquisitely ethereal as they were bathed in the beams of the glowing and ever-changing prismatic light. The beams were next directed downwards upon the assembly, and we gained a truer appreciation of the immense numbers that were gathered together.

After this short interlude we were entranced by the opening bars of a very grand and majestic composition. As the first strains reached us I noticed that all the Martians who were seated at once rose erect; every Martian bared his head, raised his right hand, and, with an expression of rapt intensity and reverence, gazed towards the heavens. I and my companions immediately adopted a similar attitude, for Merna explained that this piece was the Martian Hymn of Praise to the Great Ruler of the Universe; and that its performance was regarded as one of their most solemn acts of public worship.

The grandeur and majesty of this music, its melodious themes and thrilling harmonies, are utterly beyond my powers of description; the air and sky seemed filled and pulsating with prayer and praise, then resounding with grand crescendoes of triumphant shouts; each succeeding movement of the music carrying it higher and ever higher in the scale, until at last it seemed to soar and pierce the infinite, the final cadences dying away in melodious strains of celestial beauty and ineffable sweetness.

Finally the air-ships all circled round the sky, then took their departure--darting off in all directions--the sound of their sweet music becoming fainter and fainter in the distance until at last all was solemn silence; then the great assembly slowly and quietly dispersed.

For some minutes none of us spoke, for each was in deep thought, so impressive and exalting had been the effect of that wonderful and majestic hymn. When at length Merna turned to us and asked if we were pleased with what we had seen and heard, we found it very difficult to give adequate expression to our feelings.

Then M'Allister said, "Mon, it was beautiful, most beautiful! and I never felt so nigh to heaven as I have this night!"

I remarked to John that "I had never expected to hear any music that would equal, much more excel, the incomparable 'Hallelujah Chorus' in Handel's 'Messiah.' It had always seemed to me impossible that any music could ever be composed which would even approach it in majesty and power; but what we had heard that night certainly surpassed it."

On looking at my watch I found that the musical portion of this feast of tone and colour had occupied nearly three hours; yet, as I remarked, it had seemed to me only a few minutes!

"Yes," John replied, "to me it has been an experience like that of the monk Felix in Longfellow's 'Golden Legend.' The monk went out into the woods one day, where he saw a snow-white bird, and listened to its sweet singing until the sound of the convent bell warned him that it was time to return. When he reached the convent he was amazed to find the faces of the monks were all strange to him; he knew no one, and no one knew him, or had ever even heard of him. At last one very old monk, who had been there over a hundred years, said he remembered seeing a monk Felix when he first entered the convent. The records were searched, and it was found that Brother Felix had left the convent a hundred years before, and as he had never returned he had been entered in the list of the dead. So then

'They knew, at last, That such had been the power Of that celestial and immortal song, A hundred years had passed, And had not seemed so long As a single hour.'

"That has really been something like my own experience to-night," continued John; "for I have scarcely been conscious of the passage of time, and hours have seemed only minutes! I trust, Merna, that you will convey to your friends our most grateful thanks for all the pleasure we have derived from this magnificent display of Martian attainments."

M'Allister and I joined in this request, and Merna promised to comply with our wishes. He seemed very pleased at our appreciation; and he told John that his quotation had recalled to his memory the beautiful poem by
Longfellow, which had been a favourite with him during his earthly school-days, but had lain entirely dormant in his mind until now.

We all agreed that, however long we might live, the memory of that evening's events—the magnificent display of aerial skill, the glorious harmonies of colour, and, above all, the majestic and incomparable music—could never be effaced from our minds. We wondered whether aerial flight would ever be brought so completely under control as to permit of a similar display in the skies of our own world.

Merna replied that he was sure it would be quite possible some day, but it must be remembered that what we had been witnessing was the result of centuries of Martian experience in aerial navigation.

Merna then gave us an account of the progress of Martian discovery in regard to aeronautics, from which we gathered that the earlier experiences of the Martians had been somewhat similar to those of our own people. They began with bags of various shapes inflated with gas lighter than air, similar to our balloons, then experimented with aeroplanes of various designs, also bird-like wings, on a very large scale, actuated by electric and other motors. As time went on, however, their atmosphere became thinner and thinner, until at last all such forms of apparatus became nearly, if not quite, useless as a means of artificial flight.

After this they made use of numerous vertical screws of a spiral form, which were caused to revolve with extreme rapidity by the aid of electrical machinery; and a few of the vessels thus equipped are still in use. But the discovery of natural forces emanating from the sun and from their own planet soon led to the devising of means for utilising this natural power, and this has practically superseded everything else. Now all their air-ships and many of their machines are actuated by this power, and are under the most perfect control. Air-ships are used for all purposes of passenger traffic and freight carrying. So are vessels on the canals and motor vehicles on the roads; and railways are, therefore, unnecessary.

CHAPTER XXVII

A FAREWELL BANQUET AND A PAINFUL PARTING

The time was nigh at hand when we must think about our arrangements for returning to the earth, and, as it drew nearer and nearer, I became much troubled. I felt that it would be endangering Merna's dear life to take him to England, for our terrestrial microbes would probably prove fatal to a Martian, so it was impossible to suggest it to him; at the same time I felt that I could not again part with my newly-found son, who was now all in all to me.

Pondering over the matter, I wondered whether the Martians would allow me to stay with them and end my days on Mars with my beloved son.

Just then Soranho came to see me, and we sat awhile talking together. Presently he said, quietly, "Mr. Poynders, you would I know desire to stay here with your son, but are doubtful about mentioning the matter to me. Doubt no longer, my dear sir! We shall be proud and happy to have you with us; and I am quite sure that I am fulfilling the wishes of our people when I now cordially invite you, in their name, to make your home with us!"

Thus the Martian intuition had solved my difficulty; and, fervently thanking Soranho, I told him I gratefully accepted his kind invitation and would remain upon Mars, although parting with my two old friends would be a hard task for me.

It had been decided that we should leave on the 1st of December, that being the latest possible date, as the earth was moving so rapidly away from Mars that each day's delay would mean a longer journey. As it was, we should have about 215,000,000 miles to travel before we could reach our destination; and, as that would require at least 108 days, we could not arrive in England before the 18th of March 1910; probably it would be a day or two later, as our course would take us so near the sun.

When John and M'Allister came in I went to the receptacle where my chart was kept and brought it out. Placing it on the table, I carefully explained what would be required, and gave them full instructions for setting and keeping their proper course, so as to head off the earth on its journey. These instructions I had also written out in readiness, so that each might know and be able to act in an emergency.

Then came the most difficult part of my task, and, in hesitating words and rather disjointed sentences, I announced to them my decision to remain on the planet. John and M'Allister were very much moved; but, as they saw the matter was really settled, they soon desisted from their attempts to dissuade me.

During the day we received from Soranho an invitation, in the name of the whole people of Mars, to attend a banquet on the day before our departure to enable them to bid us adieu.

This we, of course, accepted; and when we arrived at the place indicated we found that it was the largest hall in Sirapion, the immense building being crowded with Martians from all parts of the planet.

After the banquet Soranho rose and announced that their friends from the earth would be leaving next day, and he trusted that all who could do so would attend at our point of departure to give us a hearty send-off.

He then dwelt upon the pleasure which our visit and company had afforded them, and said the good wishes of the whole people would go with us; adding that we might feel assured that anything which the Martian nation could
do, by means of transmitted influences, to aid in the advancement of our world would be most cheerfully and willingly done.

Then he went on to make the announcement that, finding I had a strong desire to stay with them and with my newly-found son, he had invited me, in their name, to do so.

This announcement was received with tremendous enthusiasm: the whole company spontaneously rising to their feet, with repeated acclamations and expressions of satisfaction.

I then rose to express my heartfelt thanks for their kindness, saying that for many years of my life upon the earth I had loved to study their planet; and now that I had spent some time upon it and been the recipient of so much kindness and goodwill from all whom I had met, I loved both their world and their people; and in deciding to accept the invitation so cordially given in their name I trusted they would always find me a good citizen of Tetarta.

Merna translated this speech to them, and there ensued another scene of indescribable enthusiasm.

John followed with a very feeling expression of his gratitude for the welcome and kindness he had received as a stranger from another world.

Then came M'Allister's turn, and his speech was a characteristic one.

Turning to Soranho, he said: "Mon!-no, I should say 'Chief!'--I thank you and all the people for the delightful time we have had upon Mars, and can only say I'm very sorry to leave you. But I have an old wife of my own in the world far across space over yonder, and away up in bonnie Scotland. She will be looking for my return home; so, much as I should like to stay longer with you, I cannot keep from going to her. Thank you all, and God bless you!"

I do not know how Merna managed to translate this speech, but it evidently gave the audience as much satisfaction as the others had done.

So, with many hearty handshakes and expressions of goodwill, we left the hall at the conclusion of the proceedings and returned to our home, where John and M'Allister were to sleep for the last time.

The next morning we sat discussing the final arrangements for their departure, as they would start on their return journey in two hours' time.

John and M'Allister were both much affected at my decision to stay upon Mars (or Tetarta, as it will be to me in future), for they did not like the idea of leaving me behind, and made some further attempt to induce me to change my mind on the subject. I felt, however, that they were really convinced I was doing the best thing possible in the circumstances, and had no hope that I would accede to their request.

I told them my decision was unalterable, and that, as we all felt the poignancy of the parting, it would be better to take leave of each other now, rather than in public when they boarded the Areonal.

As they rose to say farewell I said, "John, my dear fellow, I have kept a record of all our doings since we left old England, thinking that, if published, it might prove of some interest to my countrymen.

"I have a few words to add to it, and also a letter to enclose for you to take to my solicitors; but Merna will hand the packet to you when you actually start. I know you will carry out my wishes and see the book through the press, although I have mentioned the tobacco and laughing-gas incident!"

John smiled and promised to do as I wished; then rising, I said, "So now, dear friends, a last and long good-bye to each other. We have been close friends for many years and have many pleasant memories of the times we have spent together; but, remember, our thoughts may still unite us, though sundered by many million miles of space, and dwelling upon different worlds!

"When I was on the earth I was living upon a star of the heavens; here, upon Tetarta, I am still upon a star of the heavens, but also along with the only living being to whom I have been united by ties of blood and loving kinship.

"It is, as Merna once said, only a change of dwelling-places, and our kindly Martian friends are delighted to keep me here. It is hard to part from you, but do not wonder if I say--'Here I will live! here I will die!'"

Then with many, many a lingering handshake and words of mutual love and affection, we old friends bade each other an eternal adieu.

As he reached the doorway M'Allister--as truehearted a Scot as ever his country produced--turned towards me, and with upraised hand, glistening eyes, and lips quivering, exclaimed, "Mon, you are doing the right thing, but I never thought I would feel a parting with an old friend so much as I do this! God bless you, Professor!"

CHAPTER XXVIII
LAST WORDS TO MY READERS
As I have decided to stay here upon Mars, and have just taken leave of my two dear old friends, I will now address a few last words to those who may read this record of our trip to Mars, and then seal up the packet ready for John to take with him.

In the course of my conversations with Merna's tutors, I learnt much about the past history of the Martian people; and they told me that it dates back to such a remote antiquity that, as compared with theirs, ours is only the
history of an infancy!

Mars, being a much smaller globe than the earth, cooled down and became habitable æons before the earth reached that stage; and at the time when the earlier inhabitants of our world were living in woods and caves—slowly and painfully fashioning for themselves weapons and tools out of chipped flint-stones—there existed upon Mars a people who had then arrived at a full and vigorous civilisation.

What wonder then that, with all these past ages of development and the incentive which the present physical condition of the planet supplies them, the Martians of the present day are in all respects, whether physically, morally, or intellectually, far in advance of the inhabitants of our much younger, and therefore less developed, world!

The lessons to be learned from this, and from the physical conditions now prevailing on the planet, are very similar.

Mars, gradually, but inevitably, becoming a vast desert, and with the end of all things certain to arrive in a comparatively near future, pictures to us what must as inevitably be the fate of our own world ages hence, unless it come to an untimely end by some catastrophe.

As Professor Lowell has pointed out, we know we have an abundant supply of water at the present time, but we also know that, ages ago, the area of our world covered with water was immensely greater than it is now. From the very beginning of our world's existence the process of diminution of the water area has always gone on, and it will still go on—slowly, surely, and continually.

As an inevitable result of this decrease of water, and other natural conditions, vast areas of land on both sides of our tropical zones have become deserts; and it is a scientific certainty that this process of desertism will, and must continue, until it covers the whole world.

But, I think, the end will long be delayed, for the loss by desertism will, as it seems to me, for ages be compensated by the new and habitable land arising from areas now covered by water. The old sea-beds upon Mars are now the most fertile areas upon that planet.

As the desertism increases conditions similar to those of Mars will arise; the earth will become more level, polar glaciation will cease, the atmosphere become thinner, and water vapour, instead of falling as rain, will be carried by circulatory currents to the poles, and there be deposited as snow. What the Martians have accomplished has shown us how to stave off the water difficulty, and also how a highly civilised and intelligent people can bravely and calmly face the end which they clearly foresee!

This is the lesson from the present physical condition of Mars.

On the other hand, the continual progress of civilisation upon Mars, and the very high development attained there, coupled with what we know of our own progress during the ages past, give certainty to the hope that our own civilisation will continue to develop, slowly indeed, but surely; and also to the belief that, compared to what it will be in the future, our present stage of civilisation is merely savagery.

Development will lead to progress in everything which tends to increase the intelligence, wisdom, and happiness of the whole human race.

Our world has seen the rise and fall of many civilisations, but fresh ones have risen, phoenix-like, from the ashes of those which have departed and been forgotten. "The individual withers," but "the world is more and more." As it was in the past, so will it be in the future—ever-changing, ever-passing, but ever-renewing, until the final stage is reached.

Since the earliest dawn of our creation the watchword of humanity has been "Onward!" and it is still "Onward!" but also "Upward!!" The possibilities of the development of the human race in the ages yet to come are so vast as to be beyond our conception; for, as Sir Oliver Lodge has remarked, "Eye hath not seen, nor ear heard, nor has it entered into the mind of man to conceive what the future has in store for humanity!" Then:

"Forward, forward, let us range, Let the great world spin for ever down the ringing grooves of change!"

This, then, is the great lesson which Martian civilisation teaches us. Surely it affords no reason for the depression and pessimism in which some upon the earth are so prone to indulge; but rather should it stir them to a more earnest endeavour, by gradually removing the obstacles which now bar their progress, to improve the social conditions of the people; so that they in their turn may improve their intellectual conditions, and lend their aid to the general advancement of the world they live in.

Gloom, depression, and pessimism, of which we have had more than enough of late years, never yet helped any one. They have, however, proved disastrous to many.

Remember our world is young yet! so set before yourselves the great ideal of the brotherhood of humanity! Our religion teaches it; strive to help in attaining it; and in so doing each may, and will, achieve something to help forward the gradual evolution of a brighter and happier world for the generations that are to come. In that brighter and happier world I have faith, for:
"I hold it truth with him who sings, To one clear harp in divers tones, That men may rise on stepping-stones Of their dead selves to higher things."

And:
"I doubt not through the ages one increasing purpose runs, And the thoughts of men are widen'd with the process of the suns."

[End of the Narrative written by Wilfrid Poynders, Esq.]

CHAPTER XXIX
WHAT HAPPENED UPON OUR RETURN HOME--RESULTS OF THE MOST RECENT OBSERVATIONS OF MARS--PROFESSOR LOWELL'S IMPORTANT DISCOVERY

ADDENDUM
(Written by John Yiewsley Claxton, Esq., of Norbury, in the County Borough of Croydon, Surrey)

In accordance with the desire of my old friend, Wilfrid Poynders, I am now about to publish the book which was handed to me by Merna on the morning of our departure from Mars.

I knew that my dear old friend's thoughts and aspirations ever soared towards the skies; but, as his last testament shows, his sympathies embraced all humanity, and I am somewhat reluctant to add anything which must necessarily bring the subject down to a lower plane.

As a narrative of his own personal experiences in connection with our trip to Mars, the Professor's work is quite complete; still I thought his readers would wish to know how it fared with his colleagues after they left Mars, and have accordingly appended a few pages furnishing this information.

I am quite convinced that, in deciding to remain behind on the planet, the Professor, as M'Allister remarked, "did the right thing"; but after the many years we have spent together in the closest and truest friendship, I miss him—ah, more than I can say.

It was really a tremendous wrench, that parting with my two old friends, the Professor and Merna, and leaving them behind on Mars, although I fully appreciated the Professor's desire to end his days with his dear son, to whom he had been so strangely reunited.

We started that morning directly after our farewell, and found a large concourse of people assembled, who had come from all parts of the planet to see us off.

Soranho and many other high officers of state whom we knew were present, and, of course, the Professor, Merna, Eleeta, and Siloni, as well as many others whom we had come to regard as personal friends; and they did not allow us to depart empty-handed.

Merna handed me the packet which the Professor had referred to. We had no formal farewell with the Professor—that was all over; but he came forward at the last moment, and we parted from him with a loving hand-clasp.

After a most affectionate leave-taking with our other friends, with whom I took good care to include Siloni, we boarded the Areonal. M'Allister at once took charge of the machinery, switched on the power, and we immediately rose into the air, amidst shouts of farewell and repeated good wishes from the assembled multitude.

We rose rapidly; but, so long as we kept in view of the place, we could see the people still waving their adieux to us, and I frequently responded to their signals.

At last, when these lovable and hospitable Martians were lost to sight, I went into the Areonal, closing and bolting the outer door, which was never again to be opened until we reached our destination—our home in old England.

I have no doubt that, long after we lost sight of them, many of the Martians kept the Areonal in view with their telescopes, and followed its course far into space.

I then directed M'Allister to set our course for our own world; and when he had done so, he looked up at me and said, "Heh, mon, yon Martians are rare good folk, and I'm right sorry to leave them!"

"Yes, so am I, M'Allister," I answered. He again looked at me keenly, with a queer smile on his face; and remarked, "Mon, I'm thinking you are that, and that you have left something behind you!"

I knew he meant that I had left my heart behind me, for I was thinking the very same thing; but I turned away from him with a sigh, without answering. The matter was not one about which I cared to speak just then, for I felt very sad and heartsore.

Our journey passed off without any exciting incidents, everything on the Areonal working most satisfactorily. On the 4th February, 1910, we passed within forty-one million miles of the sun, and the heat at this stage of our journey was terrific, but we had a magnificent view of the sunspots, the corona, and other solar surroundings. In spite of all precautions for counteracting the tremendous pull of the sun, we were drawn considerably out of our direct course, so the journey occupied three days longer than we had anticipated. A large proportion of our time was spent in the air-chamber, in order to prepare us for breathing the atmosphere of our native world.
We passed across the orbit of Venus on two occasions, and had a near view of this splendid planet (and also of Mercury), for many days; but apart from its larger apparent size and intense brilliancy, we did not see anything more than we could from the earth with a good telescope. The dense atmosphere and its glowing light prevented us from seeing any definite details upon its surface.

Only three days late, we arrived at our home at Norbury on Monday the 21st March 1910, about an hour before daylight. We descended quite unobserved, and having stowed away our good ship Areonal in its shed and made all secure, we astonished Mrs. Challen by walking into the house very soon after she had risen.

She seemed truly delighted to see us back again after our long and unprecedented voyage through space, and as soon as our greetings were over she asked, "Where is Mr. Poynders?"

I said we would tell her all the news whilst we had breakfast, so she bustled about and got the meal ready very quickly. When we sat down she listened with intense interest to our long story, expressing great astonishment when I told her about our discovery of Merna upon Mars. I had tried to keep her from asking about Mr. Poynders, but at length she questioned me so directly that I was compelled to answer, though I dreaded the effect the news would have upon her.

So, as gently as I could, I explained that Mr. Poynders, having found his son a native of Mars, could not risk bringing him to such a climate as ours, and, as he was unable to leave him, had decided to remain on Mars.

Poor Mrs. Challen was so upset upon learning this that she threw up her hands, exclaiming, "Then I shall never see my dear old master again!" and putting her handkerchief to her streaming eyes, she hastened out of the room to conceal her emotion.

I felt very sorry for her, as I knew she had a great respect and liking for Mr. Poynders, with whom she had been so many years.

During the day I called upon the Professor's solicitors, in accordance with his instructions, and handed them the letter he had entrusted to me. They read it with many exclamations of surprise, for the news it contained was enough to startle even staid lawyers out of their equanimity.

One of them rang a bell, which was answered by the managing clerk, who was requested to bring in the sealed packet of papers left by Mr. Poynders before he went away. This was quickly brought, and, when opened, found to contain documents settling an annuity of £150 per annum upon Mrs. Challen, a deed of gift of the sum of £200 to M'Allister, and another deed settling all the residue of his estate upon his old friend John Yiewsley Claxton.

There was also a will to the same effect, in case he might die before the papers were claimed; everything being properly signed and in due order.

The solicitors both shook hands with me, congratulating me on this substantial addition to my estate; but I told them I already possessed sufficient for my wants, and would greatly prefer that Mr. Poynders should be here to enjoy his own.

I gave them some particulars of our adventures, and we had quite a long chat; then, taking a cordial leave of them, I returned to Norbury.

I at once acquainted Mrs. Challen with her good fortune, but she was not to be comforted, saying she would very much rather have her old master back again; and, as this was exactly my own feeling in the matter, I expressed agreement with her.

However, she calmed down after a while, and I then asked her to consider what she would desire to do in the future. If she liked to remain in the house and look after my welfare, I should be very glad to have her as my own housekeeper; but said it was entirely for her to decide the matter, and she could take her own time to do so.

She replied that she had neither relatives nor friends to trouble about, so there was no need to take any time over it, for she would only be too pleased to retain her old position, and would do her best to make me comfortable. I assured her that I had no doubt whatever upon that point; thus it was all settled there and then, and she has remained with me ever since.

My aunt was long since dead, but my two cousins, James and Timothy Snayleye, lived in London: so I thought I would go over to apprise them of my return home. They, however, received me so very coldly that, beyond saying I had been to Mars and back again, and giving a few details of what we had seen there, I did not tell them very much.

They asked a few questions now and then, but evinced very little interest in my affairs, though I noticed them frequently exchanging nods and winks with each other. I soon left, but after such a reception, was rather surprised when James Snayleye walked into my house the next day and asked to be allowed to call in a day or two and bring with him a couple of friends who were interested in Mars, and would like to hear anything I could tell them. I did not altogether care about discussing my adventures with entire strangers, but, as he was so very pressing, in the end I agreed to see them.

When they arrived I was greatly surprised to find that, instead of being persons of about the same age as my
cousin, both were elderly men. One was introduced to me as Mr. Josias Googery, a Justice of the Peace, and the other as Dr. Loonem.

We had no sooner sat down than the doctor started the conversation by asking, in an unctuous tone of voice, several questions about my trip—"Whether, ah, it was really true that I had, ah, travelled all the way to Mars and back again in, ah, a vessel of our own construction?"

All the time he was speaking he was performing the operation known as "washing the hands with invisible soap," a trick which always has an irritating effect upon my nerves.

In answer to his question I said, "It was quite true that I had been to Mars," and mentioned a few particulars of our trip.

Mr. Googery then put a few questions to me, and, as I replied, he interjected after almost every sentence that I spoke, "Ah! h'm, yes, just so," James Snayleye sitting by all the time with a sneering grin upon his face which I found very aggravating.

When I had told them as much as I thought necessary, they both started cross-examining me in such an impertinent and sceptical manner that at length I became extremely irritated, and declined to answer any more questions. Whereupon Dr. Loonem proceeded to wash his hands again, saying in an oily manner, as though addressing a child, "Pray, ah, don't excite yourself, my dear sir; don't, ah, excite yourself! You know, ah, it's not good for you!"

This was too much for flesh and blood to bear, so I rose and said that as I had an important engagement to attend to, I could not spare any more time that day, at the same time ringing the bell for Mrs. Challen to show them out.

She did so, and returned in a state of indignation, saying, she did not like those people at all, they were so rude; and that as they were passing through the doorway she heard the doctor say, "It's a clear case enough; did you notice the gleam in his eyes? that alone is sufficient to settle it!" To this Mr. Googery had replied, "Ah, h'm, yes, just so!"

"Well, Mrs. Challen," I said, "please understand that if either of those people calls again, I am not at home."

"Certainly, sir," she answered with great alacrity, as she went out of the room.

It was no mere excuse, but perfectly correct, when I told those people I had an important engagement to attend to. An old friend of mine, Sir Lockesley Halley, was President of the Dedlingtonian Astronomical Society, and, after hearing my account of Mars, said he would be very glad if I could attend the meeting of his Society on the following evening and give a short address on the subject.

I was rather averse from this, as the Society was not a large one, though it had several clever men in it, and I knew that the professionals who controlled it, and also the majority of the members, prided themselves on being exponents of what they termed "sane and unsensational astronomy"; which in some cases amounted to saying that they were a long way behind the times.

It is an interesting fact that we owe a large proportion of our knowledge of planetary detail to the work of enthusiastic amateur observers. In this Society, indeed, nearly all the best observational work was done by the non-professional class; and when, as the result of their systematic and painstaking work, they noted on their planetary drawings some lines or markings which had not previously been recorded, one would have thought their original work would have been commended. It was, however, not unusual in such cases for a professional to rise and calmly declare that the new markings were only illusions, such as he had often predicted would be claimed as discoveries.

Thus the amateurs were kept in their proper places; but the professionals did not always prove to be correct in their strictures and pronouncements.

In these circumstances, I did not expect much credence to be given to anything fresh that might be stated in my address, and therefore I rather demurred to Sir Lockesley's proposal. He, however, made such a personal matter of it that, as he was an extremely able man and a good fellow, I at last consented to do as he wished.

M'Allister accompanied me to the meeting and sat among the audience. After a few introductory remarks from Sir Lockesley, I gave my address, which lasted about half-an-hour; but it was received even more chillingly than I had anticipated, and the few comments made by the members were nearly all indicative of scepticism of my statements and unbelief in my bona fides. A scientific audience is usually rather cold and unenthusiastic; but, in the present case, except for one or two isolated hand-claps, the vote of thanks was allowed to pass sub silentio. Sir Lockesley, of course, could not help this, and I saw that he was much annoyed at my reception.

The meeting then split up into groups, lingering here and there to discuss my statements as they moved toward the door; and M'Allister told me that, as he stood near a group, he heard one man exclaim, "It's all arrant nonsense! five minutes with my 12-1/16-inch reflector would convince any sane man that there are no fine lines to be seen on Mars, because none exist!" This brought a murmur of assent; then some one else said, "Well, I certainly see some of the lines with my 7-1/2-inch, but regard them as illusions"; and he also received some support.

Another man then spoke up, remarking, "My experience does not agree with yours, gentlemen, for when I used
a 6-inch refractor I could see some of the lines, yet felt doubtful of their actuality; but since I have used a 12-inch
reflector my opinion has entirely changed. The lines are visible whenever the atmospheric conditions are favourable,
and are seen with so much certainty that I have long abandoned my doubts of their representing real markings!"
"Hear, hear!" said several, "and in a clearer atmosphere you would see still more!"

This was the Martian controversy in a nutshell: for so much depends upon individual eyesight, instrumental
power, and good atmospheric conditions. Even the finest instruments fail when observational conditions are
unfavourable!

Many other people to whom I spoke about my trip to Mars exhibited the same incredulity as those at the
meeting. I showed two persons, whom I thought would be open to conviction, some photographic views in their
natural colours, which I had brought home with me. One of them looked at the pictures, then handed them to his
friend, with the remark: "Clever fakes, aren't they? you can do almost anything with the camera nowadays!"

Similar opinions were either expressed or implied by others who saw them, so now I keep all such things to
myself.

Two days after the meeting Sir Lockesley called to have a chat with me, and whilst we were conversing, Mrs.
Challen announced that two men insisted upon seeing me, although she told them I was engaged.

"Well," I said, "show them into the next room and I will soon dispose of them"; then asking Sir Lockesley to
excuse me a few minutes, I passed through the folding doors which separated the two rooms.

The men were perfect strangers to me, and clearly not of a class with which I should care to make acquaintance.

"To what do I owe this visit?" I inquired, as I entered the room.

"Beg pardon, sir," said one of the men, "but we wished to see you on urgent business, and ask you to come with
us. There is a carriage at the door!"

"But who are you, and where do you wish me to go?" I inquired.

He hummed and haa-ed, then said, "A friend desired to see me at once, and it was only a short journey!"

"Well," I replied, "I am at present engaged with a gentleman, but I must certainly decline to accompany you at
all without further and definite particulars as to why you wish me to do so."

Then the other man advanced, and said, "As you won't come quietly, there's no help for it; so just look at these
papers and you will see you must come!"

He showed me several documents, and, on reading them, I was astounded to find one was an order for my
removal to a private lunatic asylum, the papers being signed by Josias Googery, J.P., and Dr. Loonem; and others
contained statements of the evidences of my insanity, signed by my two cousins.

Of course I was furious, and refused to go with them, whereupon they rushed forward to seize hold of me. I
shouted for Sir Lockesley to come to my assistance, and he at once dashed into the room. The two men, however,
immediately warned him not to interfere, as they were acting in a perfectly legal manner.

This he had to admit when the matter was fully explained to him; then he urged me to accept the situation and
go quietly, and he would take immediate action to secure my release.

As it was clearly useless to resist a legalised process, I gave in, and thus was I, a perfectly sane man,
incarcerated in a lunatic asylum! There I had to remain while Sir Lockesley saw my solicitors, communicated with
the Commissioners in Lunacy and others, and after much correspondence and innumerable interviews, at last
secured my release; but not until I had endured more than a week's confinement in that horrible place.

It was all a scheme concocted by my scapegrace cousins to have me declared insane, and thus secure control of
my fortune, they being my only living relatives. But for Sir Lockesley's presence and influence their precious plot
might have proved quite successful.

I do not attach much blame to the magistrate and doctor, although they might have exercised more care; but no
doubt the Snayleyes had made such suggestions to them that they were prepared to find insanity in anything I did or
said.

Mrs. Challen, who had been much affected and distressed at my being carried off in this fashion, was delighted
when at last I returned home safe and sound after my release, and told her the trouble was all over.

M'Allister had intended going on to Glasgow during the previous week, but had remained at home at Norbury
to assist in securing my release; doing yeoman's service in seeing various people and carrying messages. When
things had quite settled down again he went to Scotland and stayed with his wife for three weeks.

Upon his return we discussed our future arrangements, and agreed to become partners for the purpose of
securing and working patents for various machines which we had studied upon Mars; and this has proved a lucrative
business for us, besides supplying our engineers and manufacturers with greatly improved machinery.

Ever since our return home we have eagerly read all the scientific news concerning Mars that has been
published, for we were anxious to learn whether there had been any verification of the Professor's forecasts as to
what was likely to be seen from the earth at the opposition of Mars in 1909. The result is very gratifying to us, not
only as proving the correctness of the Professor's pronouncements, but also as testifying to the keen-sightedness of
some of our astronomers and their carefulness and accuracy as observers; though, of course, there are still
divergences of opinion as to the meaning of what has been seen.

[Illustration: Drawn by T.E.R. Phillips Plate XV

MARS, AS SEEN THROUGH A 12-INCH TELESCOPE ON 16TH AUGUST, 1909

The south polar snow-cap is seen at the top, and as it is early June on this part of Mars, the snow-cap has
become small. The dark line across it is a wide rift, the ice having commenced to break up at this part; and the dark
shading round it is water from the melting snow. The circular light area near the centre is "Hellas," and the dark
wedge-shaped area is "Syrtis Major." The protuberance usually seen on the eastern side of Syrtis Major has this year
almost disappeared, and but little detail is visible anywhere.]

For instance, M. Antoniadi, of Juvisy Observatory, near Paris, has published a very interesting account of his
own observations with the fine Meudon refractor, which has an object glass 32.7 inches in diameter; and he has also
furnished several beautifully executed drawings of what he has seen. The most noticeable new features observed
were two large detached pieces of the south polar snow-cap, the altered shape of the Solis Lacus and other dark
areas, numerous dark rounded spots on the dark areas, much detail along the lines of the canals, and the observation
of scattered markings instead of lines.

M. Antoniadi lays great stress on the advantages of large telescopes; and, whilst making frank admission that
the drawings of Professor Lowell show the outlines of the Martian details more accurately than the drawings of any
other observer, he dissents entirely from his views respecting the actuality of the canal lines.

With regard to M. Antoniadi's observation of dark rounded spots, it has been suggested by another writer that
these are volcanoes, and, moreover, that the canal lines are really cracks in the solid ice covering frozen oceans and
seas. These contentions involve the supposition that Mars is still in the stage when volcanic action is prevalent, and
also that what have hitherto been supposed to be desert lands are really fields of ice. Mars has passed far beyond the
stage of volcanic activity; and the theory does not account for the ochre colour of the frozen oceans, which are
exactly the same colour as our deserts appear when viewed from a great distance, for the sandstorms so frequently
observed, nor for the general absence of any indications of frost over a large portion of the Martian surface. It is also
very difficult to imagine the existence of a profuse growth of vegetation along cracks in solid ice; and I am afraid
this theory, like many others, fails to fit in with the observed facts.

I may remind my readers that the Professor suggested that many more dark rounded spots would, under
favourable conditions, be discovered on the dark areas of the planet, and he has stated what they are.

As a result of his recent observations, M. Antoniadi has boldly declared that the supposed canal lines are really
separate spots and markings which, when seen with instruments of lesser power than the one he used, appear to be
lines, the network of canal lines being an illusion. He contends that the markings he has seen are beyond the power
of Professor Lowell's telescope to resolve, and that what he has seen forms an unanswerable objection to the canal
theory and stops all discussion!

This argument has, however, been fully met in this book by anticipation; and, as will be seen later on, Professor
Lowell completely refutes it and shows that M. Antoniadi is mistaken. It has also been pointed out that, if we could
secure perfect seeing, the lines might really appear as separate markings, and that apparent breaks and irregularities
are exactly what we might expect to find in connection with canals. I gather from a recent remark made by Professor
Lowell that he also holds this view.

Moreover, a discreet silence is observed with regard to the progress of vegetation on Mars being from the poles
towards the equator, instead of from the equator towards the poles, as is the case on our earth.

This mode of progression can only be accounted for by the flow of water from the poles, and such flow
extending beyond the equator involves the artificial propulsion of the water, as the flow is contrary to gravitation.

Professor Lowell's statements as to this peculiar growth of the vegetation do not depend upon the results of a
few casual observations, for he has given the matter most systematic and prolonged attention, and noted upon
hundreds of charts the dates when the vegetation has first appeared in various places and latitudes after the passage
of the water down the canals.

This is such a hard nut for the opponents of the canal theory to crack, that I am quite prepared to learn that all
these careful observations are merely illusions.

Professor Hale, of Mount Wilson Observatory, in California, has taken some photographs of Mars which do not
show any canal lines; and these have been eagerly seized upon as another proof that the canals have no existence.

Unfortunately, these photographs do not show many well authenticated details which are seen with comparative
ease, nor the new details seen by M. Antoniadi. It is, therefore, no matter of wonder that they do not show the much
fainter canal lines. If the absence of the canal lines from the photographs is proof that the canals do not exist, then
the photographs must still more emphatically prove that these much more conspicuous details--which have been
seen and drawn by M. Antoniadi and scores of other observers—are also illusions and have no objective existence. Those who seek the support of these photographs for their views must be left to extricate themselves as best they can from the dilemma in which they are now placed in regard to the observations and drawings of those highly skilled observers.

The photographs were taken with a sixty-inch telescope, and possibly this very large aperture was not stopped down sufficiently to secure on the photographic plates such very fine detail as the canal lines; on the other hand, the atmospheric conditions at the moments of exposure of the plates may have been unfavourable for good definition. However good the photographs may be, the deductions drawn from them are erroneous.

Against such purely negative evidence—which never affords good ground for argument—we must set the positive evidence of Professor Lowell's numerous photographs, which do show many of the canal lines and also confirm the drawings of observers.

Professor Schiaparelli, who has been appealed to on the subject, still maintains the objectivity of the canal lines which he was the first to discover, and repudiates the suggestion that the new photographs supply any evidence against them. He remarks that during the last thirty years many other astronomers, using more perfect telescopes than his, have observed and drawn these canal lines, and have taken photographs which reproduce an identical disposition of the lines. He adds that a collective illusion on the part of so many astronomers is impossible, and that the photographs which do show the canals cannot be illusions.

Professor Lowell controverts M. Antoniadi's claim to have proved that the lines are non-existent, and that the only markings are small separate shadings which are illusively seen as lines. He points out that what M. Antoniadi has seen is exactly what would be seen when using a very large telescope, and that it indicates poor seeing instead of good definition. He remarks that when using such large instruments, which are so much more affected by atmospheric conditions than smaller ones, the diffraction rings round a star (which should appear as complete concentric circles) begin to waver, then break up into fragments—a sort of mosaic—and finally end in an indiscriminate assemblance of points. In certain kinds of bad seeing the parts may seem quite steady, but the fact that the mosaic exists is proof positive of poor seeing. What happens to the rings in such circumstances must also happen to fine lines! the mosaic effect seen by M. Antoniadi is therefore "the exact theoretic effect that a large aperture should produce on continuous lines, such as the canals, and always does produce in the case of the rings in the image of a star!"

It has been stated that Professor Lowell had admitted the illusory nature of the canal lines. His reply, however, is emphatic: "I have never made any retractation as to the reality and geometricism of the canals; they are marvellous beyond conception, and are only doubted by those who never observed the planet itself sufficiently well."

Seeing an announcement that Professor Lowell had arrived in England for the purpose of lecturing on "Planetary Photography" at the Royal Institution of Great Britain, M'Allister and I made up our minds to be present at the lecture, a resolution which, I am glad to say, we carried into effect.

In the course of his lecture Professor Lowell gave an account of the methods of planetary photography initiated and carried on with such success at the Lowell Observatory; and then proceeded to give some interesting particulars of his observations of Mars at the opposition of 1909, which resulted in one of the most important discoveries ever recorded in connection with that planet.

He stated that on the 30th September, 1909, when the region of the desert to the east of Syrtis Major came into view, after its periodic six weeks' invisibility due to the unequal length of the days of the earth and Mars, some long new canals were plainly observed which had not been visible when the region was previously in view. A long and careful investigation of fifteen years' records proved absolutely that not only had these canals never been seen before, but that they could not have existed. They are on a region which is frequently very favourably situated for observation, and could not possibly have been overlooked, for they are now the most conspicuous objects on that part of the planet. It is beyond question that they are not only new to us but new to Mars!

The two main canals run in a south-easterly direction from Syrtis Major, and with them are associated two smaller ones and at least two new oases; while, from their inter-connection, they are all clearly parts of one and the same addition to the general canal system; for they now fit in with the system as though they had always formed part of it. These new canals were not only seen and drawn, but several photographs were taken at different times.

Consider what this great discovery really means! In a region which has never been anything but a desert during the whole period over which our observational knowledge of Mars has extended, there are now strips of land many hundreds of miles in length and miles wide that have become fertile almost under our very eyes; and this result has been brought about by the passage through them of water which has artificially been carried there for the purpose of irrigation! We know this is so, for what we see is the growth of vegetation; and the systematic way in which the new canals have been fitted into the existing canal scheme proves the artificiality of the whole system.
Some sensational statements in the Press have fostered in many minds the idea that all these hundreds of miles
of new canals were constructed within the very short period of six weeks! This is altogether wrong. It is the
vegetation that has grown in six weeks, in consequence of the turning on of the water to the irrigation works. We
have good scientific reasons for believing that irrigation works on Mars could be accomplished much quicker than
on the earth; but, as the telescope does not enable us to see the works, we do not know how long they may have
taken to construct. It may have been months, or years. We only see the results of the works when actually in
operation.

When we consider these works and their results, surely it becomes impossible to resist the evidence of
intelligent design which they furnish; while if we also remember the very recent development of these canals, the
existence of life upon Mars at the present time seems to be demonstrated beyond the possibility of reasonable doubt!
In what physical form that life is enshrined even our science must fail to reveal. Professor Lowell, however, pointed
out that the inhabitants of Mars are not necessarily human beings, but their work clearly proves that they are beings
endowed with a very high degree of intelligence. A study of the canal system reveals a marvellous conception
marvellously carried into effect.

Observers at Flagstaff have, therefore, practically seen the completion of a work which is the creation of
intelligent beings on Mars; and in the remarkable photographs shown we were, so to speak, able to look upon the
results of that work--fertility in a region which had previously been an arid desert.

The water, as the lecturer remarked, was probably not in all cases conveyed by means of canals dug out of the
soil, but we know that in some way--whether by canals, or by trunk lines of pipes and smaller subsidiary pipes, or
otherwise--the land has been artificially irrigated and fertilised by water, which could not possibly have taken the
course it has without being intelligently directed. Tunnelling would be easy on Mars.

Professor Lowell spoke of these matters in well-weighed and well-chosen phrases, which carried conviction of
his earnestness and sincerity to the minds of his hearers; and we observed that the audience was evidently
profundely impressed by the importance of his statements. This fact seemed to us very significant, as he was
addressing one of the most brilliant assemblies--representing many branches of science--ever gathered within the
walls of the Royal Institution. The numerous photographs showing the Martian canal lines were projected on to the
screen by a lantern, and thus their convincing evidence was clearly brought before the whole of that vast audience.

Another very interesting series of photographs showed the coming and going of the first frost of the season in
the antarctic regions of Mars. This frost was first observed and photographed at Flagstaff on the 16th November,
1909, and other photographs were taken on the 22nd of that month.

In connection with these, Professor Lowell quaintly remarked that, "To chronicle thus the very weather on our
neighbour will convince any one that interplanetary communication has already commenced; and that, too, after the
usual conventional manner by mundane greetings."

Referring to the photographs, it was pointed out that the human eye can see at least ten times as much as a
photograph can show as regards planetary detail. This, though not generally known, is perfectly true, and it may be
explained thus: We know that in terrestrial photography the camera will reveal many details which the eye is apt to
overlook; and, by very long exposures, even celestial photography will give a similar result. In planetary
photography, however, exposures must be very short, and the picture obtained is so very tiny that it cannot show all
that the eye could see. Under good conditions, therefore, the eye at the telescope will always see immensely more of
the finer details on a planet than any camera could show.

The great value of the photographs of Mars lies in the fact that they demonstrate beyond the possibility of doubt
the existence of certain fine markings which many observers have seen and drawn, but as to the reality of which
others, less skilled or less favourably situated, have been extremely sceptical. If the fine lines had no existence on
the planet they could not be photographed.

In drawing attention to the details on these photographs Professor Lowell emphatically declared that, "The lines
you see are 'certainties,' not matters admitting of the slightest question, for all their strange regularity. Not only I, but
all my assistants, have seen them thousands of times the same, and sometimes with all the clearness and sharpness of
etchings or steel engravings.

"An optical mistake," he then remarked, "which has latterly been hailed as showing that the lines were not lines
but a series of dots, was made the other day in France. The observer saw perfectly correctly, but one with knowledge
of the optics of a telescope should have known that the effect observed was the inevitable result of using an aperture
which the seeing did not warrant; as he could easily have assured himself by looking at the shattered rings round the
synchronous image of a star."

It may here be pointed out that these weighty and well-considered declarations--which are a complete answer to
M. Antoniadi's bold claim--were made by the most experienced observer of Mars, who, as even his opponents admit,
possesses the finest site in the world for his astronomical work, and is equipped with a very perfect instrument.
Besides the splendid photographs of Mars, many views of Jupiter and Saturn were shown, exhibiting clearly numerous fine details, markings, and wisps as to which much doubt had been expressed when some observers had shown them on their drawings. These beautiful and convincing results of the clever and original methods of planetary photography adopted at Flagstaff appeared to come as a complete revelation to the majority of those present, notwithstanding their scientific experience.

Probably never before had anything so wonderful as these results of skill, patience, and prolonged research been exhibited, even in that great and historic home of science. As Professor Lowell remarked in a fine peroration: "They exhibited something of the advance recently achieved in our knowledge of solar science; on the other hand, they constituted in themselves the beginning of a set of records in which the future of the planet might be confronted with its achieved past, and which should endure after those who first conceived such registry had long passed away.... They were histories of the planets written by themselves--their autobiographies penned by light; and in their grand historical portrait-gallery astronomers yet to come might see the earlier stages of the great cosmic drama which was slowly but surely working itself out!"

At the conclusion of this most interesting lecture M'Allister turned to me and said, "How I wish our old friend the Professor could have been here to-night; he would have keenly appreciated what we have heard."

"Yes, he would indeed," I answered; "but remember, he knows more now than any one we see here could tell him about Martian matters!"

Before concluding, it may be of interest to state that Professor Lowell still maintains the accuracy of the discovery made at Flagstaff that the existence of water vapour on Mars is demonstrated by the photographic spectrum of the Martian atmosphere; and he asserts that the attempt to disprove it has failed. A further discovery has since been made at the same observatory, viz. that oxygen also is present in the atmosphere of Mars!

During the observations in 1909 several observers noted that, at times, very large areas on the surface of Mars had been so obscured by a yellowish veiling that all details were entirely blotted out. The announcement of this fact gave rise to sensational statements that a terrible catastrophe had occurred on the planet. The explanation is, however, very simple--seasonal mists arising from the canals, with the addition of clouds of sand particles in the upper air, as the result of desert sandstorms, caused a temporary obscuration of certain parts of the planet as viewed from the earth. Only this, and nothing more!

We have been interested to note that an English observer, the Rev. Theodore E.R. Phillips, has observed some new details on Mars in the region where the new canals were discovered. Mr. Phillips has in past years given considerable attention to this region, and observed several changes in the Lacus Moeris, to the east of Syrtis Major. The lake disappeared altogether for some considerable time, then reappeared. Last September he saw it again, and it was evident some further changes had occurred; and he also saw some dusky shadings on the adjacent desert of Lybia. There seems little doubt but that he actually saw, though imperfectly, the new canals which Professor Lowell's much clearer atmosphere and larger instrument enabled him to see clearly.

From what has been related in the last few pages it will be seen that many of the forecasts, as set forth in this book by our old friend the Professor, and his statements as to the Martians being actively engaged in altering, extending, and developing their canal system, have been amply verified by the observations of our astronomers; and I am confident that his other prognostications will also be fulfilled in course of time.

Turning now from scientific matters to others affecting ourselves personally, I may say that I have heard nothing more of my cousins the Snayleyes; and, after the failure of their mean attempt upon my liberty and fortune, it is not likely that I shall again be troubled by them, for they will naturally take good care to keep out of my way.

As the days and weeks pass by I often think of those we left behind upon that far distant world: wondering how they are faring, and whether they have attempted to transmit any influences or communications to us, for up to the present we have not been conscious of any such influences.

Kenneth M'Allister is a thoroughly happy man, as he is working for his own benefit, congenially and fully occupied with matters connected with his beloved machinery. He is on the high road to making a very large fortune; indeed, we are both doing remarkably well, and are, therefore, able to give financial aid to many projects in which we are interested, having for their objects the uplifting of the people, and the improvement of social conditions generally. It was only yesterday that M'Allister remarked to me, "Heh, mon, if we continue to go ahead at the same rate as we are going now, we shall both be millionaires before very long!"

Yes, we are doing well--there is no doubt about that; but, notwithstanding my present very satisfactory circumstances and the certainty of a brilliant future if I stay here, ideas have long and persistently been running in my mind that it would be far better for me to go back to Mars, and--by Jove! strange indeed that I never thought of it before!--perhaps those very persistent ideas are actually the outcome of Martian influences!!

The wonderful music I heard upon Mars still rings in my ears; and, at times, so thrilling and peculiar is its effect upon me, that I feel as though I were being almost irresistibly impelled to return to that planet. Well, I should
very much like to see the dear old Professor and Merna again, and also my many Martian friends. Then there's Siloni, whom I can never forget, for mentally her image is ever before me. What a nice girl she was! If I were to return to Mars, I wonder whether----?

FOOTNOTES:
[1] The exact diameters of the planets are difficult to measure owing to irradiation, and estimates of various authorities differ, especially with regard to the more distant planets.
[2] Most probably the larger planets possess satellites which have yet to be discovered.
[3] It is not yet ascertained with certainty whether Mercury and Venus rotate in about twenty-four hours, or whether the period is the same as that of their revolution round the sun. The evidence seems to point to the latter period.
[4] The "terminator" is the boundary between the lighted and the dark portion of the disc.
[5] Those who have seen the undercliff in the Isle of Wight will be able to form some idea of the terraces of the lunar ring-mountains, as they are very similar formations.
[6] This is the case as regards separate satellites; but it may be pointed out that a similar thing must occur in regard to the rings of Saturn. The rings are composed of swarms of satellites so small that they can only be termed particles, and these particles at the inner edge of the "crape ring" revolve round Saturn in 5 hours and 33 minutes, the inner edge of the ring being only about 47,000 miles from the centre of the planet. The planet itself revolves on its axis in 10-1/4 hours. Thus, an immense number of these minute satellites must revolve round the planet in less time than it takes the planet to make one rotation. It is calculated that the particles in the outer edge of the next ring complete one revolution round the planet in 14 hours and 28 seconds.
Two slitted green eyes loomed up directly in front of him. He plunged into them immediately. He had just made the voyage, naked through the dimension stratum, and he scurried into the first available refuge, to hover there, gasping.

The word "he" does not strictly apply to the creature, for it had no sex, nor are the words "naked," "scurried," "hover" and "gasping" accurate at all. But there are no English words to describe properly what it was and how it moved, except in very general terms. There are no Asiatic, African or European words, though perhaps there are mathematical symbols. But, because this is not a technical paper, the symbols have no place in it.

He was a sort of spy, a sort of fifth-columnist. He had some of the characteristics of a kamikaze pilot, too, because there was no telling if he'd get back from his mission.

Hovering in his refuge and gasping for breath, so to speak, he tried to compose his thoughts after the terrifying journey and adjust himself to his new environment, so he could get to work. His job, as first traveler to this new world, the Earth, was to learn if it were suitable for habitation by his fellow beings back home. Their world was about ended and they had to move or die.

He was being discomfited, however, in his initial adjustment. His first stop in the new world--unfortunately, not only for his dignity, but for his equilibrium--had been in the mind of a cat.

* * * * *

It was his own fault, really. He and the others had decided that his first in a series of temporary habitations should be in one of the lower order of animals. It was a matter of precaution--the mind would be easy to control, if it came to a contest. Also, there would be less chance of running into a mind-screen and being trapped or destroyed.

The cat had no mind-screen, of course; some might even have argued that she didn't have a mind, especially the human couple she lived with. But whatever she did have was actively at work, feeling the solid tree-branch under her claws and the leaves against which her tail switched and seeing the half-grown chickens below.

The chickens were scratching in the forbidden vegetable garden. The cat, the runt of her litter and thus named Midge, often had been chased out of the garden herself, but it was no sense of justice which now set her little gray behind to wriggling in preparation for her leap. It was mischief, pure and simple, which motivated her.

Midge leaped, and the visitor, who had made the journey between dimensions without losing consciousness, blacked out.

When he revived, he was being rocketed along in an up-and-down and at the same time side-ward series of motions which got him all giddy. With an effort he oriented himself so that the cat's vision became his, and he watched in distaste as the chickens scurried, scrawny wings lifted and beaks achirp, this way and that to escape the monstrous cat.

The cat never touched the chickens; she was content to chase them. When she had divided the flock in half, six in the pea patch and six under the porch, she lay down in the shade of the front steps and reflectively licked a paw. The spy got the impression of reflection, but he was baffledly unable to figure out what the cat was reflecting on. Midge in turn licked a paw, rolled in the dust, arched her back against the warm stone of the steps and snapped cautiously at a low-flying wasp. She was a contented cat. The impression of contentment came through very well.

The dimension traveler got only one other impression at the moment--one of languor.

The cat, after a prodigious pink yawn, went to sleep. The traveler, although he had never known the experience of voluntary unconsciousness, was tempted to do the same. But he fought against the influence of his host and, robbed of vision with the closing of the cat's eyes, he meditated.

He had been on Earth less than ten minutes, but his meditation consisted of saying to himself in his own way that if he was ever going to get anything done, he'd better escape from this cat's mind.

He accomplished that a few minutes later, when there was a crunching of gravel in the driveway and a battered Plymouth stopped and a man stepped out. Midge opened her eyes, crept up behind a row of stones bordering the path to the driveway and jumped daintily out at the man, who tried unsuccessfully to gather her into his arms.

Through the cat's eyes from behind the porch steps, where Midge had fled, the traveler took stock of the human being it was about to inhabit:

Five-feet-elevenish, thirtyish, blond-brown-haired, blue-summer-suited.
And no mind-screen.
The traveler traveled and in an instant he was looking down from his new height at the gray undersized cat.
Then the screen door of the porch opened and a female human being appeared.

* * * * *

With the male human impressions now his, the traveler experienced some interesting sensations. There was a body-to-body togetherness apparently called "gimmea hug" and a face-to-face-touching ceremony, "kiss."

"Hmm," thought the traveler, in his own way. "Hmm."

The greeting ceremony was followed by one that had this catechism:

"Suppareddi?"

"Onnatable."

Then came the "eating."

This eating, something he had never done, was all right, he decided. He wondered if cats ate, too. Yes, Midge was under the gas stove, chewing delicately at a different kind of preparation.

There was a great deal of eating. The traveler knew from the inspection of the mind he was inhabiting that the man was enormously hungry and tired almost to exhaustion.

"The damn job had to go out today," was what had happened. "We worked till almost eight o'clock. I think I'll take a nap after supper while you do the dishes."

The traveler understood perfectly, for he was a very sympathetic type. That was one reason they had chosen him for the transdimensional exploration. They had figured the best applicant for the job would be one with an intellect highly attuned to the vibrations of these others, known dimly through the warp-view, one extremely sensitive and with a great capacity for appreciation. Shrewd, too, of course.

The traveler tried to exercise control. Just a trace of it at first. He attempted to dissuade the man from having his nap. But his effort was ignored.

The man went to sleep as soon as he lay down on the couch in the living room. Once again, as the eyes closed, the traveler was imprisoned. He hadn't realized it until now, but he evidently couldn't transfer from one mind to another except through the eyes, once he was inside. He had planned to explore the woman's mind, but now he was trapped, at least temporarily.

Oh, well. He composed himself as best he could to await the awakening. This sleeping business was a waste of time.

There were footsteps and a whistling noise outside. The inhabited man heard the sounds and woke up, irritated. He opened his eyes a slit as his wife told the neighbor that Charlie was taking a nap, worn out from a hard day at the office, and the visitor, darting free, transferred again.

But he miscalculated and there he was in the mind of the neighbor. Irritated with himself, the traveler was about to jump to the mind of the woman when he was caught up in the excitement that was consuming his new host.

"Sorry," said the neighbor. "The new batch of records I ordered came today and I thought Charlie'd like to hear them. Tell him to come over tomorrow night, if he wants to hear the solidest combo since Muggsy's Roseland days."

The wife said all right, George, she'd tell him. But the traveler was experiencing the excited memories of a dixieland jazz band in his new host's mind, and he knew he'd be hearing these fantastically wonderful new sounds at first hand as soon as George got back to his turntable.

They could hardly wait, George and his inhabitant both.

* * * * *

His inhabitant had come from a dimension-world of vast, contemplative silences. There was no talk, no speech vibrations, no noise which could not be shut out by the turning of a mental switch. Communication was from mind to mind, not from mouth to ear. It was a world of peaceful silence, where everything had been done, where the struggle for physical existence had ended, and where there remained only the sweet fruits of past labor to be enjoyed.

That had been the state of affairs, at any rate, up until the time of the Change, which was something the beings of the world could not stop. It was not a new threat from the lower orders, which they had met and overcome before, innumerable times. It was not a threat from outside--no invasion such as they had turned back in the past. Nor was it a cooling of their world or the danger of imminent collision with another.

The Change came from within. It was decadence. There was nothing left for the beings to do. They had solved all their problems and could find no new ones. They had exhausted the intricate workings of reflection, academic hypothetica and mind-play; there hadn't been a new game, for instance, in the lifetime of the oldest inhabitant.

And so they were dying of boredom. This very realization had for a time halted the creeping menace, because, as they came to accept it and discuss ways of meeting it, the peril itself subsided. But the moment they relaxed, the Change started again.

Something had to be done. Mere theorizing about their situation was not enough. It was then that they sent their spy abroad.
Because they had at one time or another visited each of the planets in their solar system and had exhausted their possibilities or found them barren, and because they were not equipped, even at the peak of their physical development, for intergalactic flight, there remained only one way to travel—in time.

Not forward or backward, for both had been tried. Travel ahead had been discouraging—in fact, it had convinced them that their normal passage through the years had to be stopped. The reason had been made dramatically clear—they, the master race, did not exist in the future. They had vanished and the lower forms of life had begun to take over.

Travel into the past would be even more boring than continued existence in the present, they realized, because they would be reliving the experiences they had had and still vividly remembered, and would be incapable of changing them. It would be both tiresome and frustrating.

That left only one way to go—sideways in time, across the dimension line—to a world like their own, but which had developed so differently through the eons that to visit it and conquer the minds of its inhabitants would be worth while.

In that way they picked Earth for their victim and sent out their spy. Just one spy. If he didn't return, they'd send another. There was enough time. And they had to be sure.

* * * * *

George put a record on the phonograph and fixed himself a drink while the machine warmed up.

The interdimensional invader reacted pleasurably to the taste and instant warming effect of the liquor on George's mind.

"Ahh!" said George aloud, and his temporary inhabitant agreed with him.

George lifted the phonograph needle into the groove and went to sit on the edge of a chair. Jazz poured out of the speaker and the man beat out the time with his heels and toes.

The visitor in his mind experimented with control. He went at it subtly, at first, so as not to alarm his host. He tried to quiet the beating of time with the feet. He suggested that George cross his legs instead. The beating of time continued. The visitor urged that George do this little thing he asked; he bent all his powers to the suggestion, concentrating on the tapping feet. There wasn't even a glimmer of reaction.

Instead, there was a reverse effect. The pounding of music was insistent. The visitor relaxed. He rationalized and told himself he would try another time. Now he would observe this phenomenon. But he became more than just an observer.

The visitor reeled with sensation. The vibrations gripped him, twisted him and wrung him out. He was limp, palpitating and thoroughly happy when the record ended and George got up immediately to put on another.

Hours later, drunk with the jazz and the liquor, the visitor went blissfully to sleep inside George's mind when his host went to bed.

He awoke, with George, to the experience of a nagging throb. But in a few minutes, after a shower, shave and breakfast with steaming coffee, it was gone, and the visitor looked forward to the coming day.

It was George's day off and he was going fishing. Humming to himself, he got out his reel and flies and other paraphernalia and contentedly arranged them in the back of his car. Visions of the fine, quiet time he was going to have went through George's mind, and his inhabitant decided he had better leave. He had to get on with his exploration; he mustn't allow himself to be trapped into just having fun.

But he stayed with George as the fisherman drove his car out of the garage and along a highway. The day was sunny and warm. There was a slight wind and the green trees sighed delicately in it. The birds were pleasantly vocal and the colors were superb.

The visitor found it oddly familiar. Then he realized what it was. His world was like this, too. It had the trees, the birds, the wind and the colors. All were there. But its people had long since ceased to appreciate them. Their existence had turned inward and the external things no longer were of interest. Yet the visitor, through George's eyes, found this world delightful. He reveled in its beauty, its breathtaking panorama and its balance. And he wondered if he was able to appreciate it for the first time now because he was being active, although in a vicarious way, and participating in life, instead of merely reflecting on it. This would be a clue to have analyzed by the greater minds to which he would report.

Then, with a wrench, the visitor chided himself. He was allowing himself to identify too closely with this mortal, with his appreciation of such diverse pursuits as jazz and fishing. He had to get on. There was work to be done.

George waved to a boy playing in a field and the boy waved back. With the contact of their eyes, the visitor was inside the boy's mind.

* * * * *
The boy had a dog. It was a great, lumbering mass of affection, a shaggy, loving, prankish beast. A protector and a playmate, strong and gentle.

Now that the visitor was in the boy's mind, he adored the animal, and the dog worshiped him.

He fought to be rational. "Come now," he told himself, "don't get carried away." He attempted control. A simple thing. He would have the boy pull the dog's ear, gently. He concentrated, suggested. But all his efforts were thwarted. The boy leaped at the dog, grabbed it around the middle. The dog responded, prancing free.

The visitor gave up. He relaxed.

Great waves of mute, suffocating love enveloped him. He swam for a few minutes in a pool of joy as the boy and dog wrestled, rolled over each other in the tall grass, charged ferociously with teeth bared and growls issuing from both throats, finally to subside panting and laughing on the ground while the clouds swept majestically overhead across the blue sky.

He could swear the dog was laughing, too.

As they lay there, exhausted for the moment, a young woman came upon them. The visitor saw her looking down at them, the soft breeze tugging at her dark hair and skirt. Her hands were thrust into the pockets of her jacket. She was barefoot and she wriggled her toes so that blades of grass came up between them.

"Hello, Jimmy," she said. "Hello, Max, you old monster."

The dog thumped the ground with his tail.

"Hello, Mrs. Tanner," the boy said. "How's the baby coming?"

The girl smiled. "Just fine, Jimmy. It's beginning to kick a little now. It kind of tickles. And you know what?"

"What?" asked Jimmy. The visitor in the boy's mind wanted to know, too.

"I hope it's a boy, and that he grows up to be just like you."

"Aw." The boy rolled over and hid his face in the grass. Then he peered around. "Honest?"

"Honest," she said.

"Gee whiz." The boy was so embarrassed that he had to leave. "Me and Max are going down to the swimmin' hole. You wanta come?"

"No, thanks. You go ahead. I think I'll just sit here in the Sun for a while and watch my toes curl."

As they said good-by, the visitor traveled to the new mind.

* * * * *

With the girl's eyes, he saw the boy and the dog running across the meadow and down to the stream at the edge of the woods.

The traveler experienced a sensation of tremendous fondness as he watched them go.

But he mustn't get carried away, he told himself. He must make another attempt to take command. This girl might be the one he could influence. She was doing nothing active; her mind was relaxed.

The visitor bent himself to the task. He would be cleverly simple. He would have her pick a daisy. They were all around at her feet. He concentrated. Her gaze traveled back across the meadow to the grassy knoll on which she was standing. She sat. She stretched out her arms behind her and leaned back on them. She tossed her hair and gazed into the sky.

She wasn't even thinking of the daisy.

Irritated, he gathered all his powers into a compact mass and hurled them at her mind.

But with a swoop and a soar, he was carried up and away, through the sweet summer air, to a cloud of white softness.

This was not what he had planned, by any means.

A steady, warm breeze enveloped him and there was a tinkle of faraway music. It frightened him and he struggled to get back into contact with the girl's mind. But there was no contact. Apparently he had been cast out, against his will.

The forces of creation buffeted him. His dizzying flight carried him through the clean air in swift journey from horizon to horizon, then up, up and out beyond the limits of the atmosphere, only to return him in a trice to the breast of the rolling meadow. He was conscious now of the steady growth of slim green leaves as they pressed confidently through the nurturing Earth, of the other tiny living things in and on the Earth, and the heartbeat of the Earth itself, assuring him with its great strength of the continuation of all things.

Then he was back with the girl, watching through her eyes a butterfly as it fluttered to rest on a flower and perched there, gently waving its gaudy wings.

He had not been cast out. The young woman herself had gone on that wild journey to the heavens, not only with her mind, but with her entire being, attuned to the rest of creation. There was a continuity, he realized, a oneness between herself, the mother-to-be, and the Universe. With her, then, he felt the stirrings of new life, and he was proud and content.
He forgot for the moment that he had been a failure.

* * * * *

The soft breeze seemed to turn chill. The Sun was still high and unclouded, but its warmth was gone. With the girl, he felt a prickling along the spine. She turned her head slightly and, through her eyes, he saw, a few yards away in tall grass, a creeping man.

The eyes of the man were fixed on the girl's body and the traveler felt her thrill of terror. The man lay there for a moment, hands flat on the ground under his chest. Then he moved forward, inching toward her.

The girl screamed. Her terror gripped the visitor. He was helpless. His thoughts whirled into chaos, following hers.

The eyes of the creeping man flicked from side to side, then up. The visitor quivered and cringed with the girl when she screamed again. As the torrent of frightened sound poured from her throat, the creeping man looked into her eyes. Instantly the visitor was sucked into his mind.

It was a maelstrom. A tremendous conflict was going on in it. One part of it was urging the body on in its fantastic crawl toward the young woman frozen in terror against the sky. The visitor was aware of the other part, submerged and struggling feebly, trying to get through with a message of reason. But it was handicapped. The visitor sensed these efforts being nullified by a crushing weight of shame.

The traveler fought against full identification with the deranged part of the mind. Nevertheless, he sought to understand it, as he had understood the other minds he'd visited. But there was nothing to understand. The creeping man had no plan. There was no reason for his action.

The visitor felt only a compulsion which said, "You must! You must!"

The visitor was frightened. And then he realized that he was less frightened than the man was. The terror felt by the creeping man was greater than the fear the visitor had experienced with the girl.

There were shouts and barking. He heard the shrill cry of a boy. "Go get him, Max!"

There was a squeal of brakes from the road and a pounding of heavy footsteps coming toward them.

With the man, the visitor rose up, confused, scared. A great shaggy weight hurled itself and a growling, sharp-toothed mouth sought a throat.

A voice yelled, "Don't shoot! The dog's got him!"

Then blackness.

* * * * *

"Mersey." The voice summoned the visitor, huddling in a corner of the deranged mind, fearing contamination. The eyes opened, looked up at the ceiling of a barred cell.

"Dr. Cloyd is here to see you," the voice said.

The visitor felt the mind of his host seeking to close out the words and the world, to return to sheltering darkness.

There was a rattle of keys and the opening of an iron door.

The eyes opened as a hand shook the psychotic Mersey by the shoulder. The visitor sought escape, but the eyes avoided those of the other.

"Come with me, son," the doctor's voice said. "Don't be frightened. No one will hurt you. We'll have a talk."

Mersey shook off the hand on his shoulder.

"Drop dead," he muttered.

"That wouldn't help anything," the doctor said. "Come on, man."

Mersey sat up and, through his eyes, the traveler saw the doctor's legs. Were they legs or were they iron bars?

The traveler cringed away from the mad thought.

A room with a desk, a chair, a couch, and sunlight through a window. Crawling sunlit snakes. The visitor shuddered. He sought the part of the mind that was clear, but he sought in vain. Only the whirling chaos and the distorted images remained now.

There was a pain in the throat and with Mersey he lifted a hand to it. Bandaged--gleaming teeth and a snarling animal's mouth--fear, despair and hatred. With the prisoner, he collapsed on the couch.

"Lie down, if you like," said Dr. Cloyd's voice. "Try to relax. Let me help you."

"Drop dead," Mersey replied automatically. The visitor felt the tenseness of the man, the unreasoning fear, and the resentment.

But as the man lay there, the traveler sensed a calming of the turbulence. There was an urgent rational thought. He concentrated and tried to help the man phrase it.

"The girl--is she all right? Did I...?"

"She's all right." The doctor's voice was soothing. It pushed back the shadows a little. "She's perfectly all right."

The visitor sensed a dulled relief in Mersey's mind. The shadows still whirled, but they were less ominous. He
suggested a question, exulted as Mersey attempted to phrase it: "Doctor, am I real bad off? Can...?"

But still the shadows.

"We'll work together," said the doctor's voice. "You've been ill, but so have others. With your help, we can make you well."

The traveler made a tremendous effort. He urged Mersey to say: "I'll help, doctor. I want to find peace."

But then Mersey's voice went on: "I must find a new home. We need a new home. We can't stay where we are."

The traveler was shocked at the words. He hadn't intended them to come out that way. Somehow Mersey had voiced the underlying thoughts of his people. The traveler sought the doctor's reaction, but Mersey wouldn't look at him. The man's gaze was fixed on the ceiling above the couch.

"Of course," the doctor said. His words were false, the visitor realized; he was humoring the madman.

"We had so much, but now there is no future," Mersey said. The visitor tried to stop him. He would not be stopped. "We can't stay much longer. We'll die. We must find a new world. Maybe you can help us."

Dr. Cloyd spoke and there was no hint of surprise in his voice.

"I'll help you all I can. Would you care to tell me more about your world?"

Desperately, the visitor fought to control the flow of Mersey's words. He had opened the gate to the other world--how, he did not know--and all of his knowledge and memories now were Mersey's. But the traveler could not communicate with the disordered mind. He could only communicate through it, and then involuntarily. If he could escape the mind ... but he could not escape. Mersey's eyes were fixed on the ceiling. He would not look at the doctor.

"A dying world," Mersey said. "It will live on after us, but we will die because we have finished. There's nothing more to do. The Change is upon us, and we must flee it or die. I have been sent here as a last hope, as an emissary to learn if this world is the answer. I have traveled among you and I have found good things. Your world is much like ours, physically, but it has not grown as fast or as far as ours, and we would be happy here, among you, if we could control."

The words from Mersey's throat had come falteringly at first, but now they were strong, although the tone was flat and expressionless. The words went on:

"But we can't control. I've tried and failed. At best we can co-exist, as observers and vicarious participants, but we must surrender choice. Is that to be our destiny--to live on, but to be denied all except contemplation--to live on as guests among you, accepting your ways and sharing them, but with no power to change them?"

The traveler shouted at Mersey's mind in soundless fury: "Shut up! Shut up!"

Mersey stopped talking.

"Go on," said the doctor softly. "This is very interesting."

"Shut up!" said the traveler voicelessly, yet with frantic urgency.

The madman was silent. His body was perfectly still, except for his calm breathing. The visitor gazed through his eyes in the only possible direction--up at the ceiling. He tried another command. "Look at the doctor."

With that glance, the visitor told himself, he would flee the crazed mind and enter the doctor's. There he would learn what the psychiatrist thought of his patient's strange soliloquy--whether he believed it, or any part of it.

He prayed that the doctor was evaluating it as the intricate raving of delusion.

Slowly, Mersey turned his head. Through his eyes, the visitor saw the faded green carpet, the doctor's dull-black shoes, his socks, the legs of his trousers. Mersey's glance hovered there, around the doctor's knees. The visitor forced it higher, past the belt around a tidy waist, along the buttons of the opened vest to the white collar, and finally to the kindly eyes behind gold-rimmed glasses.

Again he had commanded this human being and had been obeyed. The traveler braced himself for the leap from the tortured mind to the sane one.

But his gaze continued to be that of Mersey.

The gray eyes of the doctor were on his patient. Intelligence and kindness were in those eyes, but the visitor could read nothing else.

He was caught, a prisoner in a demented mind. He felt panic. This must be the mind-screen he'd been warned about.

"Look down," the visitor commanded Mersey. "Shut your eyes. Don't let him see me."

But Mersey continued to be held by the doctor's eyes. The visitor cowered back into the crazed mental tangle.

Gradually, then, his fear ebbed. There was more likelihood that Cloyd did not believe Mersey's words than that he did. The doctor treated hundreds of patients and surely many of them had delusions as fanciful as this one might...
The traveler's alarm simmered down until he was capable of appreciating the irony of the situation.

But at the same time, he thought with pain, "Is it our fate that of all the millions of creatures on this world, we can establish communication only through the insane? And even then to have only imperfect control of the mind and, worse, to have it become a transmitter for our most secret thoughts?"

It was heartbreaking.

Dr. Cloyd broke the long silence. Pulling at his ear, he spoke calmly and matter-of-factly:

"Let me see if I understand your problem, Mersey. You believe yourself to be from another world, from which you have traveled, although not physically. Your world is not a material one, as far as its people are concerned. Your civilization is a mental one, which has been placed in danger. You must resettle your people, but this cannot be done here, on Earth, except in the minds of the mentally ill—and that would not be a satisfactory solution. Have I stated the case correctly?"

"Yes," Mersey's voice said over the traveler's mental protests. "Except that it is not a 'case,' as you call it. I am not Mersey. He is merely a vehicle for my thoughts. I am not here to be treated or cured, as the human being Mersey is. I'm here with a life-or-death problem affecting an entire race, and I would not be talking to you except that, at the moment, I'm trapped and confused."

"I must admit that I'm confused myself," Dr. Cloyd said. "Humor me for a moment while I think out loud. Let me consider this in my own framework, first, and then in yours, without labeling either one absolutely true or false."

"You see," the doctor went on, "this is a world of vitality. My world--Earth. Its people are strong. Their bodies are developed as well as their minds. There are some who are not so strong, and some whose minds have been injured. But for the most part, both the mind and the body are in balance. Each has its function, and they work together as a coordinated whole. My understanding of your world, on the other hand, is that it's in a state of imbalance, where the physical has deteriorated almost to extinction and the mind has been nurtured in a hothouse atmosphere. Where, you might say, the mind has fed on the decay of the body."

"No," said Mersey, voicing the traveler's conviction. "You paint a highly distorted picture of our world."

"I theorize, of course," Dr. Cloyd agreed. "But it's a valid theory, based on intimate knowledge of my own world and what you've told me of yours."

"You make a basic error, I think," Mersey said, speaking for the unwilling visitor. "You assume that I have been able to make contact only with this deranged mind. That is wrong. I have shared the experiences of many of you--a man, a boy, a woman about to bear a child. Even a cat. And with each of these, my mind has been perfectly attuned. I was able to share and enjoy their experiences, their pleasures, to love with them and to fear, although they had no knowledge of my presence.

[Illustration]

"Only since I came to this poor mind have I failed to achieve true empathy. I have been shocked by his madness and I've tried to resist it, to help him overcome it. But I've failed and it apparently has imprisoned me. Whereas I was able to leave the minds of the others almost at will, with poor Mersey I'm trapped. I can't transfer to you, for instance, as I could normally from another. If there's a way out, I haven't found it. Have you a theory for this?"

In spite of his distress at these revelations, the traveler was intrigued, now that they had been voiced for him, and he was eager to hear Dr. Cloyd's interpretation of them.

The psychiatrist took a pipe out of his pocket, filled it, lighted it and puffed slowly on it until it was drawing well.

"Continuing to accept your postulate that you're not Mersey, but an alien inhabiting his mind," the doctor said finally, "I can enlarge on my theory without changing it in any basic way.

"Your world is not superior to ours, much as it may please you to believe that it is. Nature consists of a balance, and that balance must hold true whether in Sioux City, or Mars, or in the fourth dimension, or in your world, wherever that may be. Your world is out of balance. Evidently it has been going out of balance for some time.

"Your salvation lies not in further evolution in your world--since your way of evolving proved wrong, and may prove fatal--but in a change in course, back along the evolutionary path to a society which developed naturally, with the mind and the body in balance. That society is the one you have found here, in our world. You found it pleasant and attractive, you say, but that doesn't mean you're suited to it.

"Nature's harsh rules may have operated to let you observe a way of life here that you enjoy, but to exclude you otherwise--except from a mind that is not well. In nature's balance, it could be that the refuge on this world most
closely resembling your needs is in the mind of the psychotic. One conclusion could be that your race is mentally ill-
by our standards, if not by yours--and that the type of person here most closely approximating your way of life is
one with a disordered mind."

* * * * *

Dr. Cloyd paused. Mersey had no immediate reply.

The traveler made use of the silence to consider this plausible, but frightening theory. To accept the theory
would be to accept a destiny of madness here on this world, although the doctor had been kind enough to draw a
distinction between madness in one dimension and a mere lack of natural balance in another.

Mersey again seized upon the traveler's mind and spoke its thoughts. But as he spoke, he voiced a conclusion
which the traveler had not yet admitted even to himself.

"Then the answer is inescapable," Mersey said, his tone flat and unemotional. "It is theoretically possible for all
of our people to migrate to this world and find refuge of a sort. But if we established ourselves in the minds of your
normal people, we'd be without will. As mere observers, we'd become assimilated in time, and thus extinguished as
a separate race. That, of course, we could not permit. And if we settled in the minds most suitable to receive us, we
would be in the minds of those who by your standards are insane--whose destiny is controlled by the others. Here
again we could permit no such fate.

"That alone would be enough to send me back to my people to report failure. But there is something more--
something I don't think you will believe, for all your ability to synthesize acceptance of another viewpoint."

"And what is that?"

"First I must ask a question. In speaking to me now, do you still believe yourself to be addressing Mersey, your
fellow human being, and humoring him in a delusion? Or do you think you are speaking through him to me, the
inhabitant of another world who has borrowed his mind?"

* * * * *

The doctor smiled and took time to relight his pipe.

"Let me answer you in this way," he said. "If I were convinced that Mersey was merely harboring a delusion
that he was inhabited by an alien being, I would accept that situation clinically. I would humor him, as you put it, in
the hope that he'd be encouraged to talk freely and perhaps give me a clue to his delusion so I could help him lose it.
I would speak to him--or to you, if that were his concept of himself--just as I am speaking now.

"On the other hand, if I were convinced by the many unusual nuances of our conversation that the mind I was
addressing actually was that of an alien being--I would still talk to you as I am talking now."

The doctor smiled again. "I trust I have made my answer sufficiently unsatisfactory."

The visitor's reaction was spoken by Mersey. "On the contrary, you have unwittingly told me what I want to
know. You'd want your answer to be satisfactory if you were speaking to Mersey, the lunatic. But because you'd
take delight in disconcerting me by scoring a point--something you wouldn't do with a patient--you reveal
acceptance of the fact that I am not Mersey. Your rules would not permit you to give him an unsatisfactory answer."

"Not quite," contradicted Dr. Cloyd, still smiling. "To Mersey, my patient, troubled by his delusion and using
all his craft to persuade both of us of its reality, the unsatisfactory answer would be the satisfactory one."

* * * * *

Mersey's voice laughed. "Dr. Cloyd, I salute you. I will leave your world with a tremendous respect for you--
and completely unsure of whether you believe in my existence."

"Thank you."

"I am leaving, you know," Mersey's voice replied.

The traveler by now was resigned to letting the patient be his medium and speak his thoughts. Thus far, he had
spoken them all truly, if somewhat excessively. The traveler thought he knew why, now, and expected Mersey to
voice the reason for him very shortly. He did.

"I'm leaving because I must report failure and advise my people to look elsewhere for a new home. Part of the
reason for that failure I haven't yet mentioned:

"Although it might appear that I, the visitor, am manipulating Mersey to speak the thoughts I wished to
communicate, the facts are almost the opposite. My control over either Mersey's body or mind is practically nil.

"What you have been hearing and what you hear even now are the thoughts I am thinking--not necessarily the
ones I want you to know. What has happened is this, if I may borrow your theory:

"My mind has invaded Mersey's, but his human vitality is too strong to permit him to be controlled by it. In
fact, the reverse is true. His vitality is making use of my mind for its own good, and for the good of your human
race. His own mind is damaged badly, but his healthy body has taken over and made use of my mind. It is using my
mind to make it speak against its will--to speak the thoughts of an alien without subterfuge, as they actually exist in
truth. Thus I am helplessly telling you all about myself and the intentions of my people.
What is in operation in Mersey is the human body's instinct of self-preservation. It is utilizing my mind to warn you against that very mind. Do you see? That would be the case, too, if a million of us invaded a million minds like Mersey's. None of us could plot successfully against you, if that were our desire--which, of course, it is--because the babbling tongues we inherited along with the bodies would give us away."

The doctor no longer smiled. His expression was grave now.

"I don't know," he said. "Now I am not sure any longer. I'm not certain that I follow you--or whether I want to follow you. I think I'm a bit frightened."

"You needn't be. I'm going. I'll say good-by, in your custom, and thank you for the hospitality and pleasures your world has given me. And I suppose I must thank Mersey for the warning of doom he's unknowingly given my people, poor man. I hope you can help him."

"I'll try," said Dr. Cloyd, "though I must say you've complicated the diagnosis considerably."

"Good-by. I won't be back, I promise you."

"I believe you," said the doctor. "Good-by."

Mersey slumped back on the couch. He looked up at the ceiling, vacantly.

* * * * *

For a long time there was no sound in the room.

Then the doctor said: "Mersey."

There was no answer. The man continued to lie there motionless, breathing normally, looking at the ceiling.

"Mersey," said the doctor again. "How do you feel?"

The man turned his head. He looked at the doctor with hostility, then went back to his contemplation of the ceiling.

"Drop dead," he muttered.
Poor Riuku!... Not being a member of the human race, how was he supposed to understand what goes on in a
woman's mind when the male of the same species didn't even know?

In their ship just beyond the orbit of Mars the two aliens sat looking at each other.
"No," Riuku said. "I haven't had any luck. And I can tell you right now that I'm not going to have any, and no
one else is going to have any either. The Earthmen are too well shielded."
"You contacted the factory?" Nagor asked.
"Easily. It's the right one. The parking lot attendant knows there's a new weapon being produced in there. The
waitress at the Jumbo Burger Grill across the street knows it. Everybody I reached knows it. But not one knows
anything about what it is."

Nagor looked out through the ports of the spaceship, which didn't in the least resemble an Earth spaceship, any
more than what Nagor considered sight resembled the corresponding Earth sense perception. He frowned.
"What about the research scientists? We know who some of them are. The supervisors? The technicians?"
"No," Riuku said flatly. "They're shielded. Perfectly. I can't make contact with a single mind down there that has
the faintest inkling of what's going on. We never should have let them develop the shield."
"Have you tried contacting everyone? What about the workers?"
"Shielded. All ten thousand of them. Of course I haven't checked all of them yet, but--"
"Do it," Nagor said grimly. "We've got to find out what that weapon is. Or else get out of this solar system."

Riuku sighed. "I'll try," he said.

Someone put another dollar in the juke box, and the theremins started in on Mare Indrium Mary for the tenth
time since Pete Ganley had come into the bar. "Aw shut up," he said, wishing there was some way to turn them off.
Twelve-ten. Alice got off work at Houston's at twelve. She ought to be here by now. She would be, if it weren't
Thursday. Shield boosting night for her.

Why, he asked himself irritably, couldn't those scientists figure out some way to keep the shields up longer than
a week? Or else why didn't they have boosting night the same for all departments? He had to stay late every Friday
and Alice every Thursday, and all the time there was Susan at home ready to jump him if he wasn't in at a
reasonable time....

"Surprised, Pete?" Alice Hendricks said at his elbow.
He swung about, grinned at her. "Am I? You said it. And here I was about to go. I never thought you'd make it
before one." His grin faded a little. "How'd you do it? Sweet-talk one of the guards into letting you in at the head of
the line?"

She shook her bandanaed head, slid onto the stool beside him and crossed her knees--a not very convincing
sign of femininity in a woman wearing baggy denim coveralls. "Aren't you going to buy me a drink, honey?"

"Oh, sure." He glanced over at the bartender. "Another beer. No, make it two." He pulled the five dollars out of
his pocket, shoved it across the bar, and looked back at Alice, more closely this time. The ID badge, pinned to her
hip. The badge, with her name, number, department, and picture--and the little meter that measured the strength of
her Mind Shield.

The dial should have pointed to full charge. It didn't. It registered about seventy per cent loss.

Alice followed his gaze. She giggled. "It was easy," she said. "The guards don't do more than glance at us, you
know. And everyone who's supposed to go through Shielding on Thursday has the department number stamped on a
yellow background. So all I did was make a red background, like yours, and slip it on in the restroom at Clean-up

"But Alice...." Pete Ganley swallowed his beer and signaled for another. "This is serious. You've got to keep
the shields up. The enemy is everywhere. Why, right now, one could be probing you."

"So what? The dial isn't down to Danger yet. And tomorrow I'll just put the red tag back on over the yellow one
and go through Shielding in the same line with you. They won't notice." She giggled again. "I thought it was smart,
Petey. You oughta think so too. You know why I did it, don't you?"

Her round, smooth face looked up at him, wide-eyed and full-lipped. She had no worry wrinkles like Susan's,
no mouth pulled down at the corners like Susan's, and under that shapeless coverall....
"Sure, baby, I'm glad you did it," Pete Ganley said huskily.

Riuku was glad too, the next afternoon when the swing shift started pouring through the gates.

It was easy, once he'd found her. He had tested hundreds, all shielded, some almost accessible to him, but none vulnerable enough. Then this one came. The shield was so far down that contact was almost easy. Painful, tiring, but not really difficult. He could feel her momentary sense of alarm, of nausea, and then he was through, integrated with her, his thoughts at home with her thoughts.

He rested, inside her mind.

"Oh, hi, Joan. No, I'm all right. Just a little dizzy for a moment. A hangover? Of course not. Not on a Friday."

Riuku listened to her half of the conversation. Stupid Earthman. If only she'd start thinking about the job. Or if only his contact with her were better. If he could use her sense perceptions, see through her eyes, hear through her ears, feel through her fingers, then everything would be easy. But he couldn't. All he could do was read her thoughts. Earth thoughts at that....

... The time clock. Where's my card? Oh, here it is. Only 3:57. Why did I have to hurry so? I had lots of time....

"Why, Mary, how nice you look today. That's a new hairdo, isn't it? A permanent? Yeah, what kind?" ... What a microbe! Looks like pink straw, her hair does, and of course she thinks it's beautiful.... "I'd better get down to my station. Old Liverlips will be ranting again. You oughta be glad you have Eddie for a lead man. Eddie's cute. So's Dave, over in 77. But Liverlips, ugh...."

She was walking down the aisle to her station now. A procession of names: Maisie, and Edith, and that fat slob Natalie, and if Jean Andrews comes around tonight flashing that diamond in my face again, I'll--I'll kill her....

"Oh hello, Clinton. What do you mean, late? The whistle just blew. Of course I'm ready to go to work." Liverlips, that's what you are. And still in that same blue shirt. What a wife you must have. Probably as sloppy as you are....

Good, Riuku thought. Now she'll be working. Now he'd find out whatever it was she was doing. Not that it would be important, of course, but let him learn what her job was, and what those other girls' jobs were, and in a little while he'd have all the data he needed. Maybe even before the shift ended tonight, before she went through the Shielding boost.

He shivered a little, thinking of the boost. He'd survive it, of course. He'd be too well integrated with her by then. But it was nothing to look forward to.

Still, he needn't worry about it. He had the whole shift to find out what the weapon was. The whole shift, here inside Alice's mind, inside the most closely guarded factory on or under or above the surface of the Earth. He settled down and waited, expectantly.

Alice Hendricks turned her back on the lead man and looked down the work table to her place. The other girls were there already. Lois and Marge and Coralie, the other three members of the Plug table, Line 73.

"Hey, how'd you make out?" Marge said. She glanced around to make sure none of the lead men or timekeepers were close enough to overhear her, then went on. "Did you get away with it?"

"Sure," Alice said. "And you should of seen Pete's face when I walked in."

She took the soldering iron out of her locker, plugged it in, and reached out for the pan of 731 wires. "You know, it's funny. Pete's not so good looking, and he's sort of a careless dresser and all that, but oh, what he does to me." She filled the 731 plug with solder and reached for the white, black, red wire.

"You'd better watch out," Lois said. "Or Susan's going to be doing something to you."

"Oh, her." Alice touched the tip of the iron to the solder filled pin, worked the wire down into position. "What can she do? Pete doesn't give a damn about her."

"He's still living with her, isn't he?" Lois said.

Alice shrugged.... What a mealy-mouthed little snip Lois could be, sometimes. You'd think to hear her that she was better than any of them, and luckier too, with her Joe and the kids. What a laugh! Joe was probably the only guy who'd ever looked at her, and she'd hooked him right out of school, and now with three kids in five years and her working nights....

Alice finished soldering the first row of wires in the plug and started in on the second. So old Liverlips thought she wasted time, did he? Well, she'd show him. She'd get out her sixteen plugs tonight.

"Junior kept me up all night last night," Lois said. "He's cutting a tooth."

"Yeah," Coralie said, "It's pretty rough at that age. I remember right after Mike was born...."

Don't they ever think of anything but their kids? Alice thought. She stopped listening to them. She heard Pete's voice again, husky and sending little chills all through her, and his face came between her and the plug and the white green wire she was soldering. His face, with those blue eyes that went right through a girl and that little scar that quirked up the corner of his mouth....

"Oh, oh," Alice said suddenly. "I've got solder on the outside of the pin." She looked around for the alcohol.
Riuku probed. Her thoughts were easy enough to read, but just try to translate them into anything useful.... He probed deeper. The plugs she was soldering. He could get a good picture of them, of the wires, of the harness lacing that Coralie was doing. But it meant nothing. They could be making anything. Radios, monitor units, sound equipment.

Only they weren't. They were making a weapon, and this bit of electronic equipment was part of that weapon. What part? What did the 731 plug do?

Alice Hendricks didn't know. Alice Hendricks didn't care.

The first break. Ten minutes away from work. Alice was walking back along the aisle that separated Assembly from the men's Machine Shop. A chance, perhaps. She was looking at the machines, or rather past them, at the men.

"Hello, Tommy. How's the love life?" He's not bad at all. Real cute. Though not like Pete, oh no.

The machines. Riuku prodded at her thoughts, wishing he could influence them, wishing that just for a moment he could see, hear, feel, think as she would never think.

The machines were--machines. That big funny one where Ned works, and Tommy's spot welder, and over in the corner where the superintendent is--he's a snappy dresser, tie and everything.

The corner. Restricted area. Can't go over. High voltage or something....

Her thoughts slid away from the restricted area. Should she go out for lunch or eat off the sandwich machine? And Riuku curled inside her mind and cursed her with his rapidly growing Earthwoman's vocabulary.

At the end of the shift he had learned nothing. Nothing about the weapon, that is. He had found out a good deal about the sex life of Genus Homo--information that made him even more glad than before that his was a one-sexed race.

* * * * *

With work over and tools put away and Alice in the restroom gleefully thinking about the red Friday night tag she was slipping onto her ID badge, he was as far from success as ever. For a moment he considered leaving her, looking for another subject. But he'd probably not be able to find one. No, the only thing to do was stay with her, curl deep in her mind and go through the Shielding boost, and later on....

The line. Alice's nervousness.... Oh, oh, there's that guy with the meter--the one from maintenance. What's he want?

"Whaddya mean, my shield's low? How could it be?" ... If he checks the tag I'll be fired for sure. It's a lot of nonsense anyway. The enemy is everywhere, they keep telling us. Whoever saw one of them? "No, honest, I didn't notice anything. Can I help it if.... It's okay, huh? It'll pass...."

Down to fifteen per cent, the guy said. Well, that's safe, I guess. Whew.

"Oh, hello, Paula. Whatcha talking about, what am I doing here tonight? Shut up...."

And then, in the midst of her thoughts, the pain, driving deep into Riuku, twisting at him, wrenching at him, until there was no consciousness of anything at all.

He struggled back. He was confused, and there was blankness around him, and for a moment he thought he'd lost contact altogether. Then he came into focus again. Alice's thoughts were clearer than ever suddenly. He could feel her emotions; they were a part of him now. He smiled. The Shielding boost had helped him. Integration--much more complete integration than he had ever known before.

"But Pete, honey," Alice said. "What did you come over to the gate for? You shouldn't of done it."

"Why not? I wanted to see you."

"What if one of Susan's pals sees us?"

"So what? I'm getting tired of checking in every night, like a baby. Besides, one of her pals did see us, last night, at the bar."

Fear. What'll she do? Susan's a hellcat. I know she is. But maybe Pete'll get really sick and tired of her. He looks it. He looks mad. I'd sure hate to have him mad at me....

"Let's go for a spin, baby. Out in the suburbs somewhere. How about it?"

"Well--why sure, Pete...."

Sitting beside him in the copter. All alone up here. Real romantic, like something on the video. But I shouldn't with him married, and all that. It's not right. But it's different, with Susan such a mean thing. Poor Petey....

Riuku prodded. He found it so much easier since the Shielding boost. If only these Earthmen were more telepathic, so that they could be controlled directly. Still, perhaps with this new integration he could accomplish the same results. He prodded again.

"Pete," Alice said suddenly. "What are we working on, anyway?"

"What do you mean, working on?" He frowned at her.

"At the plant. All I ever do is sit there soldering plugs, and no one ever tells me what for."

"Course not. You're not supposed to talk about any part of the job except your own. You know that. The slip of
a lip--"
"Can cost Earth a ship. I know. Quit spouting poster talk at me, Pete Ganley. The enemy isn't even human. And there aren't any around here."

Pete looked over at her. She was pouting, the upper lip drawn under the lower. Someone must have told her that was cute. Well, so what--it was cute.
"What makes you think I know anything more than you do?" he said.
"Well, gee." She looked up at him, so near to her in the moonlight that she wondered why she wanted to talk about the plant anyway. "You're in Final Assembly, aren't you? You check the whatsits before they go out."
"Sure," he said. No harm in telling her. No spies now, not in this kind of war. Besides, she was too dumb to know anything.

"It's a simple enough gadget," Pete Ganley said. "A new type of force field weapon that the enemy can't spot until it hits them. They don't even know there's an Earth ship within a million miles, until Bingo!..."

She drank it in, and in her mind Riuku did too. Wonderful integration, wonderful. Partial thought control. And now, he'd learn the secret....

"You really want to know how it works?" Pete Ganley said. When she nodded he couldn't help grinning. "Well, it's analogous to the field set up by animal neurones, in a way. You've just got to damp that field, and not only damp it but blot it out, so that the frequency shows nothing at all there, and then--well, that's where those Corcoran assemblies you're soldering on come in. You produce the field...."

Alice Hendricks listened. For some reason she wanted to listen. She was really curious about the field. But, gee, how did he expect her to understand all that stuff? He sounded like her algebra teacher, or was it chemistry? Lord, how she'd hated school. Maybe she shouldn't have quit.

... Corcoran fields. E and IR and nine-space something or other. She'd never seen Pete like this before. He looked real different. Sort of like a professor, or something. He must be real smart. And so--well, not good-looking especially but, well, appealing. Real SA, he had....

"So that's how it works," Pete Ganley said. "Quite a weapon, against them. It wouldn't work on a human being, of course." She was staring at him dreamy-eyed. He laughed. "Silly, I bet you haven't understood a word I said."
"I have too."
"Liar." He locked the automatic pilot on the copter and held out his arms. "Come here, you."
"Oh, Petey...."

Who cared about the weapon? He was right, even if she wouldn't admit it. She hadn't even listened, hardly. She hadn't understood.

And neither had Riuku.

* * * * *

Riuku waited until she'd fallen soundly asleep that night before he tried contacting Nagor. He'd learned nothing useful. He'd picked up nothing in her mind except more thoughts of Pete, and gee, maybe someday they'd get married, if he only had guts enough to tell Susan where to get off....

But she was asleep at last. Riuku was free enough of her thoughts to break contact, partially of course, since if he broke it completely he wouldn't be able to get back through the Shielding. It was hard enough to reach out through it. He sent a painful probing feeler out into space, to the spot where Nagor and the others waited for his report.

"Nagor...."
"Riuku? Is that you?"
"Yes. I've got a contact. A girl. But I haven't learned anything yet that can help us."
"Louder, Riuku. I can hardly hear you...."

Alice Hendricks stirred in her sleep. The dream images slipped through her subconscious, almost waking her, beating against Riuku.

Pete, baby, you shouldn't be like that....

Riuku cursed the bisexual species in their own language.

"Riuku!" Nagor's call was harsh, urgent. "You've got to find out. We haven't much time. We lost three more ships today, and there wasn't a sign of danger. No Earthman nearby, no force fields, nothing. You've got to find out why." Those ships just disappeared.

Riuku forced his way up through the erotic dreams of Alice Hendricks. "I know a little," he said. "They damp their thought waves somehow, and keep us from spotting the Corcoran field."
"Corcoran field? What's that?"
"I don't know." Alice's thoughts washed over him, pulling him back into complete integration, away from Nagor, into a medley of heroic Petes with gleaming eyes and clutching hands and good little Alices pushing them
away--for the moment.

"But surely you can find out through the girl," Nagor insisted from far away, almost out of phase altogether.

"No, Pete!" Alice Hendricks said aloud.

"Riuku, you're the only one of us with any possible sort of contact. You've got to find out, if we're to stay here at all."

"Well," Alice Hendricks thought, "maybe...."

Riuku cursed her again, in the lingua franca of a dozen systems. Nagor's voice faded. Riuku switched back to English.

* * * * *

Saturday. Into the plant at 3:58. Jean's diamond again.... Wish it would choke her; she's got a horsey enough face for it to. Where's old Liverlips? Don't see him around. Might as well go to the restroom for a while....

That's it, Riuku thought. Get her over past the machine shop, over by that Restricted Area. There must be something there we can go on....

"Hello, Tommy," Alice Hendricks said. "How's the love life?"

"It could be better if someone I know would, uh, cooperate...."

She looked past him, toward the corner where the big panels were with all the dials and the meters and the chart that was almost like the kind they drew pictures of earthquakes on. What was it for, anyway? And why couldn't anyone go over to it except those longhairs? High voltage her foot....

"What're you looking at, Alice?" Tommy said.

"Oh, that." She pointed. "Wonder what it's for? It doesn't look like much of anything, really."

"I wouldn't know. I've got something better to look at."

"Oh, you!"

Compared to Pete, he didn't have anything, not anything at all.

... Pete. Gee, he must have got home awful late last night. Wonder what Susan said to him. Why does he keep taking her lip, anyway?

Riuku waited. He prodded. He understood the Restricted Area as she understood it--which was not at all. He found out some things about the 731 plugs--that a lot of them were real crummy ones the fool day shift girls had set up wrong, and besides she'd rather solder on the 717's any day. He got her talking about the weapon again, and he found out what the other girls thought about it.

Nothing.

Except where else could you get twelve-fifty an hour soldering?

She was stretched out on the couch in the restroom lobby taking a short nap--on company time, old Liverlips being tied up with the new girls down at the other end of the line--when Riuku finally managed to call Nagor again.

"Have you found out anything, Riuku?"

"Not yet."

Silence. Then: "We've lost another ship. Maybe you'd better turn her loose and come on back. It looks as if we'll have to run for it, after all."

Defeat. The long, interstellar search for another race, a race less technologically advanced than this one, and all because of a stupid Earth female.

"Not yet, Nagor," he said. "Her boy friend knows. I'll find out. I'll make her listen to him."

"Well," Nagor said doubtfully. "All right. But hurry. We haven't much time at all."

"I'll hurry," Riuku promised. "I'll be back with you tonight."

That night after work Pete Ganley was waiting outside the gate again. Alice spotted his copter right away, even though he had the lights turned way down.

"Gee, Pete, I didn't think...."

"Get in. Quick."

"What's the matter?" She climbed in beside him. He didn't answer until the copter had lifted itself into the air, away from the factory landing lots and the bright overhead lights and the home-bound workers.

"It's Susan, who else," he said grimly. "She was really sounding off today. She kept saying she had a lot of evidence and I'd better be careful. And, well, I sure didn't want you turning up at the bar tonight of all nights."

He didn't sound like Pete.

"Why?" Alice said. "Are you afraid she'll divorce you?"

"Oh, Alice, you're as bad as--look, baby, don't you see? It would be awful for you. All the publicity, the things she'd call you, maybe even in the papers...."

He was staring straight ahead, his hands locked about the controls. He was sort of--well, distant. Not her Petey any more. Someone else's Pete. Susan's Pete....
"I think we should be more careful," he said. Riuku twisted his way through her thoughts, tried to push them down.... Does he love me, he's got to love me, sure he does, he just doesn't want me to get hurt.... And far away, almost completely out of phase, Nagor's call. "Riuku, another ship's gone. You'd better come back. Bring what you've learned so far and we can withdraw from the system and maybe piece it together...."

"In a little while. Just a little while." Stop thinking about Susan, you biological schizo. Change the subject. You'll never get anything out of that man by having hysterics....

"I suppose," Alice cried bitterly, "you've been leading me on all the time. You don't love me. You'd rather have her!"

"That's not so. Hell, baby...." He's angry. He's not even going to kiss me. I'm just cutting my own throat when I act like that....

"Okay, Pete. I'm sorry. I know it's tough on you. Let's have a drink, okay? Still got some in the glove compartment?"

"Huh? Oh, sure."

She poured two drinks, neat, and he swallowed his with one impatient gulp. She poured him another.

* * * * *

Riuku prodded. The drink made his job easier. Alice's thoughts calmed, swirled away from Susan and what am I going to do and why didn't I pick up with some single guy, anyway? A single guy, like Tommy maybe. Tommy and his spot welder, over there by the Restricted Area. The Restricted Area....

"Pete."

"Yeah, baby?"

"How come they let so much voltage loose in the plant, so we can't even go over in the Restricted Area?"

"Whatever made you think of that?" He laughed suddenly. He turned to her, still laughing. He was the old Pete again, she thought, with his face happy and his mouth quirked up at the corner. "Voltage loose ... oh, baby, baby. Don't you know what that is?"

"No. What?"

"That's the control panel for one of the weapons, silly. It's only a duplicate, actually--a monitor station. But it's tuned to the frequencies of all the ships in this sector and--"

She listened. She wanted to listen. She had to want to listen, now.

"Nagor, I'm getting it," Riuku called. "I'll bring it all back with me. Just a minute and I'll have it."

"How does it work, honey?" Alice Hendricks said.

"You really want to know? Okay. Now the Corcoran field is generated between the ships and areas like that one, only a lot more powerful, by--"

"It's coming through now, Nagor."

"-a very simple power source, once you get the basics of it. You--oh, oh!" He grabbed her arm. "Duck, Alice!"

A spotlight flashed out of the darkness, turned on them, outlined them. A siren whirred briefly, and then another copter pulled up beside them and a loudspeaker blared tinnily.

"Okay, bud, pull down to the landing lane."

The police.

Police. Fear, all the way through Alice's thoughts, all the way through Riuku. Police. Earth law. That meant—it must mean he'd been discovered, that they had some other means of protection besides the Shielding....

"Nagor! I've been discovered!"

"Come away then, you fool!"

He twisted, trying to pull free of Alice's fear, away from the integration of their separate terrors. But he couldn't push her thoughts back from his. She was too frightened. He was too frightened. The bond held.

"Oh, Pete, Pete, what did you do?"

He didn't answer. He landed the copter, stepped out of it, walked back to the other copter that was just dropping down behind him. "But officer, what's the matter?"

Alice Hendricks huddled down in the seat, already seeing tomorrow's papers, and her picture, and she wasn't really photogenic, either.... And then, from the other copter, she heard the woman laugh.

"Pete Ganley, you fall for anything, don't you?"

"Susan!"

"You didn't expect me to follow you, did you? Didn't it ever occur to you that detectives could put a bug in your copter? My, what we've been hearing!"

"Yeah," the detective who was driving said. "And those pictures we took last night weren't bad either."

"Susan, I can explain everything...."
"I'm sure you can, Pete. You always try. But as for you--you little--"

Alice ducked down away from her. Pictures. Oh God, what it would make her look like. Still, this hag with the pinched up face who couldn't hold a man with all the cosmetics in the drugstore to camouflage her--she had her nerve, yelling like that.

"Yeah, and I know a lot about you too!" Alice Hendricks cried.
"Why, let me get my hands on you...."
"Riuku!"

Riuku prodded. Calm down, you fool. You're not gaining anything this way. Calm down, so I can get out of here....

Alice Hendricks stopped yelling abruptly.
"That's better," Susan said. "Pete, your taste in women gets worse each time. I don't know why I always take you back."

"I can explain everything."
"Oh, Pete," Alice Hendricks whispered. "Pety, you're not--"

"Sure he is," Susan Ganley said. "He's coming with me. The nice detectives will take you home, dear. But I don't think you'd better try anything with them--they're not your type. They're single."

"Pete...." But he wouldn't meet Alice's eyes. And when Susan took his arm, he followed her.

"How could you do it, Pety...." Numb whispers, numb thoughts, over and over, but no longer frightened, no longer binding on Riuku.

Fools, he thought. Idiotic Earthmen. If it weren't for your ridiculous reproductive habits I'd have found out everything. As it is.... "Nagor, I'm coming! I didn't get anything. This woman--"

"Well, come on then. We're leaving. Right now. There'll be other systems."

Petey, Petey, Petey....

Contact thinned as he reached out away from her, toward Nagor, toward the ship. He fought his way out through the Shielding, away from her and her thoughts and every detestable thing about her. Break free, break free....

"What's the matter, Riuku? Why don't you come? Have the police caught you?"

The others were fleeing, getting farther away even as he listened to Nagor's call. Contact was hard to maintain now; he could feel communication fading.

"Riuku, if you don't come now...."

He fought, but Alice's thoughts were still with him; Alice's tears still kept bringing him back into full awareness of her.

"Riuku!"

"I--I can't!"

The Shielding boost, that had integrated him so completely with Alice Hendricks, would never let him go.

"Oh, Petey, I've lost you...."

And Nagor's sad farewell slipped completely out of phase, leaving him alone, with her.

The plant. The Restricted Area. The useless secret of Earth's now unneeded weapon. Alice Hendricks glancing past it, at the spot welding machine, at Tommy.

"How's the love life?"

"You really interested in finding out, Alice?"

"Well--maybe--"

And Riuku gibbered unheard in her mind.
I was asleep when our danger was discovered, but I knew the instant the attention signal sounded that the situation was serious. Kincaide, my second officer, had a cool head, and he would not have called me except in a tremendous emergency.

"Hanson speaking!" I snapped into the microphone. "What's up, Mr. Kincaide?"

"A field of meteorites sweeping into our path, sir." Kincaide's voice was tense. "I have altered our course as much as I dared and am reducing speed at emergency rate, but this is the largest swarm of meteorites I have ever seen. I am afraid that we must pass through at least a section of it."

"With you in a moment, Mr. Kincaide!" I dropped the microphone and snatched up my robe, knotting its cord about me as I hurried out of my stateroom. In those days, interplanetary ships did not have their auras of repulsion rays to protect them from meteorites, it must be remembered. Two skins of metal were all that lay between the Ertak and all the dangers of space.

I took the companionway to the navigating room two steps at a time and fairly burst into the room.

Kincaide was crouched over the two charts that pictured the space around us, microphone pressed to his lips. Through the plate glass partition I could see the men in the operating room tensed over their wheels and levers and dials. Kincaide glanced up as I entered, and motioned with his free hand towards the charts.

One glance convinced me that he had not overestimated our danger. The space to right and left, and above and below, was fairly peppered with tiny pricks of greenish light that moved slowly across the milky faces of the charts.

From the position of the ship, represented as a glowing red spark, and measuring the distances roughly by means of the fine black lines graved in both directions upon the surface of the chart, it was evident to any understanding observer that disaster of a most terrible kind was imminent.

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Kincaide muttered into his microphone, and out of the tail of my eye I could see his orders obeyed on the instant by the men in the operating room. I could feel the peculiar, sickening surge that told of speed being reduced, and the course being altered, but the cold, brutally accurate charts before me assured me that no action we dared take would save us from the meteorites.

"We're in for it, Mr. Kincaide. Continue to reduce speed as much as possible, and keep bearing away, as at present. I believe we can avoid the thickest portion of the field, but we shall have to take our chances with the fringe."

"Yes, sir!" said Kincaide, without lifting his eyes from the chart. His voice was calm and businesslike, now; with the responsibility on my shoulders, as commander, he was the efficient, level-headed thinking machine that had endeared him to me as both fellow-officer and friend.

Leaving the charts to Kincaide, I sounded the general emergency signal, calling every man and officer of the Ertak's crew to his post, and began giving orders through the microphone.

"Mr. Correy,"--Correy was my first officer--"please report at once to the navigating room. Mr. Hendricks, make the rounds of all duty posts, please, and give special attention to the disintegrator ray operators. The ray generators are to be started at once, full speed." Hendricks, I might say, was a junior officer, and a very good one, although quick-tempered and excitable--failings of youth. He had only recently shipped with us to replace Anderson Croy, who--but that has already been recorded.[2]


These preparations made, I glanced at the twin charts again. The peppering of tiny green lights, each of which represented a meteoritic body, had definitely shifted in relation to the position of the strongly-glowing red spark that was the Ertak, but a quick comparison of the two charts showed that we would be certain to pass through--again I use land terms to make my meaning clear--the upper right fringe of the field.

The great cluster of meteorites was moving in the same direction as ourselves now; Kincaide's change of course had settled that matter nicely. Naturally, this was the logical course, since should we come in contact with any of them, the impact would bear a relation to only the difference in our speeds, instead of the sum, as would be the case if we struck at a wide angle.

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It was difficult to stand without grasping a support of some kind, and walking was almost impossible, for the reduction of our tremendous speed, and even the slightest change of direction, placed terrific strains upon the ship
and everything in it. Space ships, at space speeds, must travel like the old-fashioned bullets if those within are to feel at ease.

"I believe, Mr. Kincaide, it might be well to slightly increase the power in the gravity pads," I suggested. Kincaide nodded and spoke briefly into his microphone; an instant later I felt my weight increase perhaps fifty per cent, and despite the inertia of my body, opposed to both the change in speed and direction of the Ertak, I could now stand without support, and could walk without too much difficulty.

The door of the navigating room was flung open, and Correy entered, his face alight with curiosity and eagerness. An emergency meant danger, and few beings in the universe have loved danger more than Correy.

"We're in for it, Mr. Correy," I said, with a nod towards the charts. "Swarm of meteorites, and we can't avoid them."

"Well, we've dodged through them before, sir," smiled Correy. "We can do it again."

"I hope so, but this is the largest field of them I have ever seen. Look at the charts: they're thicker than flies."

Correy glanced at the charts, slapped Kincaide across his bowed, tense shoulders, and laughed aloud.

"Trust the old Ertak to worm her way through, sir," he said. "The ray crews are on duty, I presume?"

"Yes. But I doubt that the rays will be of much assistance to us. Particularly if these are stony meteorites--and as you know, the odds are about ten to one against their being of ferrous composition. The rays, deducting the losses due to the utter lack of a conducting medium, will be insufficient protection. They will help, of course. The iron meteorites they will take care of effectively, but the conglomerate nature of the stony meteorites does not make them particularly susceptible to the disintegrating rays.

"We shall do what we can, but our success will depend largely upon good luck--or Divine Providence."

"At any rate, sir," replied Correy, and his voice had lost some of its lightness, "we are upon routine patrol and not upon special mission. If we do crack up, there is no emergency call that will remain unanswered."

"No," I said dryly. "There will be just another 'Lost in Space' report in the records of the Service, and the Ertak's name will go up on the tablet of lost ships. In any case, we have done and shall do what we can. In ten minutes we shall know all there is to know. That about right, Mr. Kincaide?"

"Ten minutes?" Kincaide studied the charts with narrowed eyes, mentally balancing distance and speed. "We should be within the danger area in about that length of time, sir," he answered. "And out of it--if we come out--three or four minutes later."

"We'll come out of it," said Correy positively.

I walked heavily across the room and studied the charts again. Space above and below, to the right and the left of us, was powdered with the green points of light.

Correy joined me, his feet thumping with the unaccustomed weight given him by the increase in gravity. As he bent over the charts, I heard him draw in his breath sharply.

Kincaide looked up. Correy looked up. I looked up. The glance of each man swept the faces, read the eyes, of the other two. Then, with one accord, we all three glanced up at the clocks--more properly, at the twelve-figured dial of the Earth clock, for none of us had any great love for the metric Universal system of time-keeping.

Ten minutes..... Less than that, now.

"Mr. Correy," I said, as calmly as I could, "you will relieve Mr. Kincaide as navigating officer. Mr. Kincaide, present my compliments to Mr. Hendricks, and ask him to explain the situation to the crew. You will instruct the disintegrator ray operators in their duties, and take charge of their activities. Start operation at your discretion; you understand the necessity."

"Yes, sir!" Kincaide saluted sharply, and I returned his salute. We did not shake hands, the Earth gesture of strangely enough--both greeting and farewell, but we both realized that this might well be a final parting. The door closed behind him, and Correy and I were left together to watch the creeping hands of the Earth clock, the twin charts with their thick spatter of green lights, and the two fiery red sparks, one on each chart, that represented the Ertak sweeping recklessly towards the swarming danger ahead.

In other accounts of my experiences in the Special Patrol Service I feel that I have written too much about myself. After all, I have run my race; a retired commander of the Service, and an old, old man, with the century mark well behind me, my only use is to record, in this fashion, some of those things the Service accomplished in the old days when the worlds of the Universe were strange to each other, and space travel was still an adventure to many.

The Universe is not interested in old men; it is concerned only with youth and action. It forgets that once we were young men, strong, impetuous, daring. It forgets what we did; but that has always been so. It always will be so.
John Hanson, retired Commander of the Special Patrol Service, is fit only to amuse the present generation with his tales of bygone days.

Well, so be it. I am content. I have lived greatly; certainly I would not exchange my memories of those bold, daring days even for youth and strength again, had I to live that youth and waste that strength in this softened, gilded age.

But no more of this; it is too easy for an old man to rumble on about himself. It is only the young John Hanson, Commander of the Ertak, who can interest those who may pick up and read what I am writing here.

I did not waste the minutes measured by that clock, grouped with our other instruments in the navigating room of the Ertak. I wrote hastily in the ship's log, stating the facts briefly and without feeling. If we came through, the log would read better thus; if not, and by some strange chance it came to human eyes, then the Universe would know at least that the Ertak's officers did not flinch from even such a danger.

* * * * *

As I finished the entry, Correy spoke:
"Kincaide's estimate was not far off, sir," he said, with a swift glance at the clock. "Here we go!" It was less than half a minute short of the ten estimated by Kincaide.

I nodded and bent over the television disc--one of the huge, hooded affairs we used in those days. Widening the field to the greatest angle, and with low power, I inspected the space before us on all sides.

The charts, operated by super-radio reflexes, had not lied about the danger into which we were passing--had passed. We were in the midst of a veritable swarm of meteorites of all sizes.

They were not large; I believe the largest I saw had a mass of not more than three or four times that of the Ertak herself. Some of the smaller bodies were only fifty or sixty feet in diameter.

They were jagged and irregular in shape, and they seemed to spin at varying speeds, like tiny worlds.

As I watched, fixing my view now on the space directly in our path, I saw that our disintegrator ray men were at work. Deep in the bowels of the Ertak, the moan of the ray generators had deepened in note; I could even feel the slight vibration beneath my feet.

One of the meteorites slowly crumbled on top, the dust of disintegration hovering in a compact mass about the body. More and more of it melted away. The spinning motion grew irregular, eccentric, as the center of gravity was changed by the action of the ray.

Another ray, two more, centered on the wobbling mass. It was directly in our path, looming up larger and larger every second.

Faster and faster it melted, the rays eating into it from four sides. But it was perilously near now; I had to reduce power in order to keep all of it within the field of my disc. If--

The thing vanished before the very nose of the ship, not an instant too soon. I glanced up at the surface temperature indicator, and saw the big black hand move slowly for a degree or two, and stop. It was a very sensitive instrument, and registered even the slight friction of our passage through the disintegrated dust of the meteorite.

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Our rays were working desperately, but disintegrator rays are not nearly so effective in space as in an atmosphere of some kind. Half a dozen times it seemed that we must crash head on into one of the flying bodies, but our speed was reduced now to such an extent that we were going but little faster than the meteorites, and this fact was all that saved us. We had more time for utilizing our rays.

We nosed upward through the trailing fringe of the swarm in safety. The great field of meteorites was now below and ahead of us. We had won through! The Ertak was safe, and--

"There seems to be another directly above us, sir," commented Correy quietly, speaking for the first time since we had entered the area of danger. "I believe your disc is not picking it up."

"Thank you, Mr. Correy," I said. While operating on an entirely different principle, his two charts had certain very definite advantages: they showed the entire space around us, instead of but a portion.

I picked up the meteorite he had mentioned without difficulty. It was a large body, about three times the mass of the Ertak, and some distance above us--a laggard in the group we had just eluded.

"Will it coincide with our path at any point, Mr. Correy?" I asked doubtfully. The television disc could not, of course, give me this information.

"I believe so; yes," replied Correy, frowning over his charts. "Are the rays on it, sir?"

"Yes. All of them, I judge, but they are making slow work of it." I fell silent, bending lower over the great hooded disc.

There were a dozen, a score of rays playing upon the surface of the meteorite. A halo of dust hung around the rapidly diminishing body, but still the mass melted all too slowly.

* * * * *
Pressing the attention signal for Kincaide, I spoke sharply into the microphone:
"Mr. Kincaide, is every ray on that large meteorite above us?"
"Yes, sir," he replied instantly.
"Full power?"
"Yes, sir."
"Very well; carry on, Mr. Kincaide." I turned to Correy; he had just glanced from his charts to the clock, with its jerking second hand, and back to his charts.
"They'll have to do it in the next ten seconds, sir," he said. "Otherwise--" Correy shrugged, and his eyes fixed with a peculiar, fascinated stare on the charts. He was looking death squarely in the eyes.
Ten seconds! It was not enough. I had watched the rays working, and I knew their power to disintegrate this death-dealing stone that was hurtling along above us while we rose, helplessly, into its path.
I did not ask Correy if it was possible to alter the course enough, and quickly enough, to avoid that fateful path. Had it been possible without tearing the Ertak to pieces with the strain of it, Correy would have done it seconds ago.
I glanced up swiftly at the relentless, jerking second hand. Seven seconds gone! Three seconds more.
The rays were doing all that could be expected of them. There was only a tiny fragment of the meteorite left, and it was dwindling swiftly. But our time was passing even more rapidly.
The bit of rock loomed up at me from the disc. It seemed to fly up into my face, to meet me.
"Got us, Correy!" I said hoarsely. "Good-by, old-man!"
Then there was a crash that shook the whole ship. I shot into the air. I remember falling ... terribly.
A blinding flash of light that emanated from the very center of my brain, a sickening sense of utter catastrophe, and ... blackness.

* * * * *
I think I was conscious several seconds before I finally opened my eyes. My mind was still wandering; my thoughts kept flying around in huge circles that kept closing in.
We had hit the meteorite. I remembered the crash. I remembered falling. I remembered striking my head.
But I was still alive. There was air to breathe and there was firm material under me. I opened my eyes.
For the first instant, it seemed I was in an utterly strange room. Nothing was familiar. Everything was--was inverted. Then I glanced upward, and I saw what had happened.
I was lying on the ceiling of the navigating room. Over my head were the charts, still glowing, the chronometers in their gimballled beds, and the television disc. Beside me, sprawled out limply, was Correy, a trickle of dried blood on his cheek. A litter of papers, chairs, framed licenses and other movable objects were strewn on and around us.
My first instinctive, foolish thought was that the ship was upside down. Man has a ground-trained mind, no matter how many years he may travel space. Then, of course, I realized that in the open void there is not top nor bottom; the illusion is supplied, in space ships, by the gravity pads. Somehow, the shock of impact had reversed the polarity of the leads to the pads, and they had become repulsion pads. That was why I had dropped from the floor to the ceiling.
All this flashed through my mind in an instant as I dragged myself toward Correy. Dragged myself because my head was throbbing so that I dared not stand up, and one shoulder, my left, was numb.

* * * * *
For an instant I thought that Correy was dead. Then, as I bent over him, I saw a pulse leaping just under the angle of his jaw.
"Correy, old man!" I whispered. "Do you hear me?" All the formality of the Service was forgotten for the time.
"Are you hurt badly?"
His eyelids flickered, and he sighed; then, suddenly, he looked up at me--and smiled!
"We're still here, sir?"
"After a fashion. Look around; see what's happened?"
He glanced about curiously, frowning. His wits were not all with him yet.
"We're in a mess, aren't we?" he grinned. "What's the matter?"
I told him what I thought, and he nodded slowly, feeling his head tenderly.
"How long ago did it happen?" he asked. "The blooming clock's upside down; can you read it?"
I could--with an effort.
"Over twenty minutes," I said. "I wonder how the rest of the men are?"
With an effort, I got to my feet and peered into the operating room. Several of the men were moving about,
dazedly, and as I signalled to them, reassuringly, a voice hailed us from the doorway:

"Any orders, sir?"

It was Kincaide. He was peering over what had been the top of the doorway, and he was probably the most disreputable-looking officer who had ever worn the blue-and-silver uniform of the Service. His nose was bloody and swollen to twice its normal size. Both eyes were blackened, and his hair, matted with blood, was plastered in ragged swirls across his forehead.

"Yes, Mr. Kincaide; plenty of them. Round up enough of the men to locate the trouble with the gravity pads; there's a reversed connection somewhere. But don't let them make the repairs until the signal is given. Otherwise, we'll all fall on our heads again. Mr. Correy and I will take care of the injured."

* * * * *

The next half hour was a trying one. Two men had been killed outright, and another died before we could do anything to save him. Every man in the crew was shaken up and bruised, but by the time the check was completed, we had a good half of our personnel on duty.

Returning at last to the navigating room, I pressed the attention signal for Kincaide, and got his answer immediately.

"Located the trouble yet, Mr. Kincaide?" I asked anxiously.

"Yes, sir! Mr. Hendricks has been working with a group of men and has just made his report. They are ready when you are."

"Good!" I drew a sigh of relief. It had been easier than I thought. Pressing the general attention signal, I broadcasted the warning, giving particular instructions to the men in charge of the injured. Then I issued orders to Hendricks:

"Reverse the current in five seconds, Mr. Hendricks, and stand by for further instructions."

Hastily, then, Correy and I followed the orders we had given the men. Briefly we stood on our heads against the wall, feeling very foolish, and dreading the fall we knew was coming.

It came. We slid down the wall and lit heavily on our feet, while the litter that had been on the ceiling with us fell all around us. Miraculously, the ship seemed to have righted herself. Correy and I picked ourselves up and looked around.

"We're still operating smoothly," I commented with a sweeping glance at the instruments over the operating table. "Everything seems in order."

"Did you notice the speed indicator, sir?" asked Correy grimly. "When he fell, one of the men in the operating room must have pulled the speed lever all the way over. We're at maximum speed, sir, and have been for nearly an hour, with no one at the controls."

* * * * *

We stared at each other dully. Nearly an hour, at maximum speed--a speed seldom used except in case of great emergency. With no one at the controls, and the ship set at maximum deflection from her course.

That meant that for nearly an hour we had been sweeping into infinite space in a great arc, at a speed I disliked to think about.

"I'll work out our position at once," I said, "and in the meantime, reduce speed to normal as quickly as possible. We must get back on our course at the earliest possible moment."

We hurried across to the charts that were our most important aides in proper navigation. By comparing the groups of stars there with our space charts of the universe, the working out of our position was ordinarily, a simple matter.

But now, instead of milky rectangles, ruled with fine black lines, with a fiery red speck in the center and the bodies of the universe grouped around in green points of light, there were only nearly blank rectangles, shot through with vague, flickering lights that revealed nothing except the presence of disaster.

"The meteoric fragment wiped out some of our plates, I imagine," said Correy slowly. "The thing's useless."

I nodded, staring down at the crawling lights on the charts.

"We'll have to set down for repairs, Mr. Correy. If," I added, "we can find a place."

Correy glanced up at the attraction meter.

"I'll take a look in the big disc," he suggested. "There's a sizeable body off to port. Perhaps our luck's changed."

He bent his head under the big hood, adjusting the controls until he located the source of the registered attraction.

"Right!" he said, after a moment's careful scrutiny. "She's as big as Earth, I'd venture, and I believe I can detect clouds, so there should be atmosphere. Shall we try it, sir?"

"Yes. We're helpless until we make repairs. As big as Earth, you said? Is she familiar?"

Correy studied the image under the hood again, long and carefully.
"No, sir," he said, looking up and shaking his head. "She's a new one on me."

Conning the ship first by means of the television disc, and navigating visually as we neared the strange sphere, we were soon close enough to make out the physical characteristics of this unknown world.

Our spectroscopic tests had revealed the presence of atmosphere suitable for breathing, although strongly laden with mineral fumes which, while possibly objectionable, would probably not be dangerous.

So far as we could see, there was but one continent, somewhat north of the equator, roughly triangular in shape, with its northernmost point reaching nearly to the Pole.

"It's an unexplored world, sir. I'm certain of that," said Correy. "I am sure I would have remembered that single, triangular continent had I seen it on any of our charts." In those days, of course, the Universe was by no means so well mapped as it is today.

"If not unknown, it is at least uncharted," I replied. "Rough looking country, isn't it? No sign of life, either, that the disc will reveal."

"That's as well, sir. Better no people than wild natives who might interfere with our work. Any choice in the matter of a spot on which to set her down?"

I inspected the great, triangular continent carefully. Towards the north it was a mass of snow covered mountains, some of them, from their craters, dead volcanoes. Long spurs of these ranges reached southward, with green and apparently fertile valleys between. The southern edge was covered with dense tropical vegetation; a veritable jungle.

"At the base of that central spur there seems to be a sort of plateau," I suggested. "I believe that would be a likely spot."

"Very well, sir," replied Correy, and the old Ertak, reduced to atmospheric speed, swiftly swept toward the indicated position, while Correy kept a wary eye on the surface temperature gauge, and I swept the terrain for any sign of intelligent life.

I found a number of trails, particularly around the base of the foothills, but they were evidently game trails, for there were no dwelling places of any kind; no cities, no villages, not even a single habitation of any kind that the searching eyes of the disc could detect.

Correy set her down as neatly and as softly as a rose petal drifts to the ground. Roses, I may add, are a beautiful and delicate flower, with very soft petals, peculiar to my native Earth.

We opened the main exit immediately. I watched the huge, circular door back slowly out of its threads, and finally swing aside, swiftly and silently, in the grip of its mighty gimbals, with the weird, unearthly feeling I have always had when about to step foot on some strange star where no man has trod before.

The air was sweet, and delightfully fresh after being cooped up for weeks in the Ertak, with her machine-made air. A little thinner, I should judge, than the air to which we were accustomed, but strangely exhilarating, and laden with a faint scent of some unknown constituent--undoubtedly the mineral element our spectroscope had revealed but not identified. Gravity, I found upon passing through the exit, was normal. Altogether an extremely satisfactory repair station.

Correy's guess as to what had happened proved absolutely accurate. Along the top of the Ertak, from amidships to within a few feet of her pointed stem, was a jagged groove that had destroyed hundreds of the bright, coppery discs, set into the outer skin of the ship, that operated our super-radio reflex charts. The groove was so deep, in places, that it must have bent the outer skin of the Ertak down against the inner skin. A foot or more--it was best not to think of what would have happened then.

By the time we completed our inspection dusk was upon us--a long, lingering dusk, due, no doubt, to the afterglow resulting from the mineral content of the air. I'm no white-skinned, stoop-shouldered laboratory man, so I'm not sure that was the real reason. It sounds logical, however.

"Mr. Correy, I think we shall break out our field equipment and give all men not on watch an opportunity to sleep out in the fresh air," I said. "Will you give the orders, please?"

"Yes, sir. Mr. Hendricks will stand the eight to twelve watch as usual?"

I nodded.

"Mr. Kincaide will relieve him at midnight, and you will take over at four."

"Very well, sir." Correy turned to give the orders, and in a few minutes an orderly array of shelter tents made a single street in front of the fat, dully-gleaming side of the Ertak. Our tents were at the head of this short company street, three of them in a little row.

After the evening meal, cooked over open fires, with the smoke of the very resinous wood we had collected
hanging comfortably in the still air, the men gave themselves up to boisterous, noisy games, which, I confess, I should have liked very much to participate in. They raced and tumbled around the two big fires like schoolboys on a lark. Only those who have spent most of their days in the metal belly of a space ship know the sheer joy of utter physical freedom.

Correy, Kincaide and I sat before our tents and watched them, chatting about this and that--I have long since forgotten what. But I shall never forget what occurred just before the watch changed that night. Nor will any man of the Ertak's crew.

* * * * *

It was just a few minutes before midnight. The men had quieted down and were preparing to turn in. I had given orders that this first night they could suit themselves about retiring; a good officer, and I tried to be one, is never afraid to give good men a little rein, now and then.

The fires had died down to great heaps of red coals, filmed with ashes, and, aside from the brilliant galaxy of stars overhead, there was no light from above. Either this world had no moons, not even a single moon, like my native Earth, or it had not yet arisen.

Kincaide rose lazily, stretched himself, and glanced at his watch.

"Seven till twelve, sir," he said. "I believe I'll run along and relieve--"

He never finished that sentence. From somewhere there came a rushing sound, and a damp, stringy net, a living, horrible, something, descended upon us out of the night.

In an instant, what had been an orderly encampment became a bedlam. I tried to fight against the stringy, animated, nearly intangible mass, or masses, that held me, but my arms, my legs, my whole body, was bound as with strings and loops of elastic bands.

Strange whispering sounds filled the air, audible above the shouting of the men. The net about me grew tighter; I felt myself being lifted from the ground. Others were being treated the same way; one of the Ertak's crew shot straight up, not a dozen feet away, writhing and squirming. Then, at an elevation of perhaps twice my height, he was hurried away.

Hendrick's voice called out my name from the Ertak's exit, and I shouted a warning:

"Hendrick! Go back! Close the emergency--" Then a gluey mass cut across my mouth, and, as though carried on huge soft springs, I was hurried away, with the sibilant, whispering sounds louder and closer than ever. With me, as nearly as I could judge, went every man who had not been on duty in the ship.

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I ceased struggling, and immediately the rubbery network about me loosened. It seemed to me that the whisperings about me were suddenly approving. We were in the grip, then, of some sort of intelligent beings, ghost-like and invisible though they were.

After a time, during which we were all, in a ragged group, being borne swiftly towards the mountains, all at a common level from the ground, I managed to turn my head so that I could see, against the star-lit sky, something of the nature of the things that had made us captive.

As is not infrequently the case, in trying to describe things of an utterly different world, I find myself at a loss for words. I think of jellyfish, such as inhabit the seas of most of the inhabited planets, and yet this is not a good description.

These creatures were pale, and almost completely transparent. What their forms might be, I could not even guess. I could make out writhing, tentacle-like arms, and wrinkled, flabby exc rudescences and that was all. That these creatures were huge, was evident from the fact that they, apparently walking, from the irregular, undulating motion, held us easily ten or a dozen feet from the ground.

With the release of the pressure about my body I was able to talk again, and I called out to Correy, who was fighting his way along, muttering, angrily, just ahead of me.

"Correy! No use fighting them. Save your strength, man!"

"Then? What are they, in God's name? What spawn of hell--"

"The Commander is right, Correy," interrupted Kincaide, who was not far from my first officer. "Let's get our breaths and try to figure out what's happened. I'm winded!" His voice gave plentiful evidence of the struggle he had put up.

"I want to know where I'm going, and why!" growled Correy, ceasing his struggling, nevertheless. "What have us? Are they fish or flesh or fowl?"

"I think we shall know before very long, Correy," I replied. "Look ahead!"

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The bearers of the men in the fore part of the group had apparently stopped before a shadowy wall, like the face of a cliff. Rapidly, the rest of us were brought up, until we were in a compact group, some in sitting positions, some
upside down, the majority reclining on back or side. The whispering sound now was intense and excited, as though our strange bearers awaited some momentous happening.

I took advantage of the opportunity to speak very briefly to my companions.

"Men, I'll admit frankly that I don't know what we're up against," I said. "But I do know this: we'll come out on top of the heap. Conserve your strength, keep your eyes open, and be prepared to obey, instantly, any orders that may be issued: I know that last remark is not needed. If any of you should see or learn something of interest or value, report at once to Mr. Correy, Mr. Kincaide or my--"

A simultaneous, involuntary exclamation from the men interrupted me, and it was not surprising that this was so, for the wall before us had suddenly opened, and there was a great burst of yellow light in our faces. A strong odor, like the faint scent we had first noticed in the air, but infinitely more powerful, struck our nostrils, but I was not conscious of the fact for several seconds. My whole attention, my every startled thought, was focused upon the group of strange beings, silhouetted against the glowing light, that stood in the opening.

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Imagine, if you can, a huge globe, perhaps eight feet in diameter, flattened slightly at the bottom, and supported on six short, huge stumps, like the feet of an elephant, and topped by an excrudescence like a rounded coning tower, merging into the globular body. From points slightly below this excrudescence, visualize six long, limp tentacles, so long that they drop from the equators of these animated spheres, and trail on the ground. Now you have some conception of the beings that stood before us.

A sharp, sibilant whispering came from one of these figures, to be answered in an eager chorus from our bearers. There was a reply like a command, and the group in the doorway marched forward. One by one these visible tentacles wrapped themselves around a member of the Ertak's crew, each one of the globular creatures bearing one of us.

I heard a disappointed whisper go up from the outer darkness where, but a moment before, we had been. Then there was a grating sound, and a thud as the stone doorway was rolled back into place.

The entrance was sealed. We were prisoners indeed!

"All right, now what?" gritted Correy. "God! If I ever get a hand loose!"

Swiftly, each of us held above the head-like excrudescence atop the globular body of the thing that held us, we were carried down a widening rocky corridor, towards the source of the yellow light that beat about us.

* * * * *

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The passage led to a great cavern, irregular in shape, and apparently possessed of numerous other outlets which converged here.

I am not certain as to the size of the cavern, save that it was great, and that the roof was so high in most sections that it was lost in shadow.

The great cavern was nearly filled with creatures similar to those which were bearing us, and they fell back in orderly passage to permit our conductors to pass.

I could see, now, that the hump atop each rounded body was a travesty of a head, hairless, and without a neck. Their features were particularly hideous, and I shall pass over a description as rapidly as possible.

The eyes were round, and apparently lidless; a pale drab or bluff in color. Instead of a nose, as, we understand the term, they had a convoluted rosette in the center of the face, not unlike the olfactory organ of a bat. Their ears were placed as are ours, but were of thin, pale parchment, and hugged the side of the head tightly. Instead of a mouth, there was a slightly depressed oval of fluttering skin near the point where the head melted into the rounded body: the rapid fluttering or vibration of this skin produced the whispering sound I have already remarked.

The cavern, as I have said, was flooded with yellow light, which came from a great column of fire near the center of the clear space. I had no opportunity to inspect the exact arrangements but from what I did see, I judged that this flame was fed by some sort of highly inflammable substance, not unlike crude oil, except that it burned clearly and without smoke. This substance was conducted to the font from which the flame leaped by means of a large pipe of hollow reed or wood.

At the far end of the cavern a procession entered from one of the passages--nine figures similar to those which bore us, save that by the greater darkness of their skin, and the wrinkles upon both face and body, I judged these to be older than the rest. From the respect with which they were treated, and the dignity of their movements, I gathered that these were persons of authority, a surmise which quickly verified itself.

* * * * *

These nine elders arranged themselves, standing, in the form of a semicircle, the center creature standing a pace or two in front of the others. At a whispered command, we were all dumped unceremoniously on the floor of the cavern before this august council of nine.

Nine pairs of fish-like, unblinking eyes inspected us, whether with enmity or otherwise; I could not determine.
One of the nine spoke briefly to one of our conductors, and received an even more brief reply.

I felt the gaze of the creature in the center fix on me. I had taken my proper position in front of my men; he apparently recognized me as the leader of the group.

In a sharp whisper, he addressed me; I gathered from the tone that he uttered a command, but I could only shake my head in response. No words could convey thought from his mind to mine—but we did have a means of communication at hand.

"Mr. Correy," I said, "your menore, please!" I released my own from the belt which held it, along with the other expeditionary equipment which we always wore when outside our ship, and placed it in position upon my head, motioning for one of the nine to do likewise with Correy's menore.

They watched me suspiciously, despite my attempt to convey, by gestures, that by means of these instruments we could convey thoughts to each other. The menores of those days were bulky, heavy things, and undoubtedly they looked dangerous to these creatures: thought-transference instruments at that time were complicated affairs.

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However, I must have made myself partially understood, at least, for the chief of the nine uttered a whispered command to one of the beings who had borne us to the large cavern, and motioned with a writhing gesture of one tentacle that I was to place the menore upon this creature's head.

"The old boy's playing it safe, sir," muttered Correy, chuckling. "Wants to try it out on the dog first."

"Right!" I nodded, and, not without difficulty, placed the other menore upon the rounded dome of the individual selected for the trial.

Both instruments were adjusted to full power, and I concentrated my mental energy upon the simple pictures that I thought I could convey to the limited mentality of which I suspected these creatures, watching his fishy eyes the while.

It was several seconds before he realized what was happening; then he began talking excitedly to the waiting nine. The words fairly burned themselves in my consciousness, but of course were utterly unintelligible to me. Before the creature had finished, a lash-like tentacle shot out from the chief of the nine and removed the menore; a moment later it reposed, at a rather rakish slant, on the shining dome of its new possessor.

"Get anything, sir?" asked Correy in a low voice.

"Not yet. I'm trying to make him see how we came here, and that we're friends. Then I'll see what I can get out of him; he'll have to get the idea of coming back at me with pictures instead of words, and it may take a long time to make him understand."

It did take a long time. I could feel the sweat trickling down my face as I strove to make him understand. His eyes revealed wonderment and a little fear, but an almost utter lack of understanding.

I pictured for him the heavens, and our ship sailing along through space. Then I showed him the Ertak coming to rest on the plateau, and he made little impatient noises as though to convey that he knew all about that.

* * * * *

After a long time he got the idea. Crudely, dimly, he pictured the Ertak leaving this strange world, and soaring off into vacant space. Then his scene faded out, and he pictured the same thing again, as one might repeat a question not understood. He wanted to know where we would go if we left this world of his.

I pictured for him other worlds, peopled with men more or less like myself. I showed him the great cities, and the fleets of ships like the Ertak that plied between them. Then, as best I could, I asked him about himself and his people.

It came to me jerkily and poorly pictured, but I managed to piece out the story. Whether I guess correctly on all points, I am not sure, nor will I ever be sure. But this is the story as I got it.

These people at one time lived in the open, and all the people of this world were like those in the cavern, possessed of opaque bodies and great strength. There were none of the ghost-like creatures who had captured us.

But after a long time, a ruling class arose. They tried to dominate the masses, and the masses refused to be dominated. But the ruling classes were wise, and versed in certain sciences; the masses were ignorant. So the ruling classes devised a plan.

These creatures did not eat. There was a tradition that at one time they had had mouths, as I had, but that was not known. Their strength, their vitality, came from the powerful mineral vapor which came forth from the bowels of the earth. The ruling classes decided that if they could control the supply of this vapor, they would have the whip hand, and they set about realizing this condition.

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It was quickly done. All the sources of supply, save one, were sealed. This one source of supply was the cavern in which we stood. These were members of the ruling class, and outside was the rabble, starved and unhappy, living on the faint seepage of the vital fumes, without which they became almost bodiless, and the helpless slaves of those
within the cavern.

These creatures, then, were boneless; as boneless as sponges, and, like sponges, capable of absorbing huge quantities of a foreign substance, which distended them and gave them weight. I could see, now, why the rotund bodies sagged and flattened at the base, and why six short, stubby legs were needed to support that body. There was only tissue, unsupported by bone, to bear the weight!

This chief of the nine went on to show me how ruthlessly, how cruelly those within the cavern ruled those without. The substance that fed the flame had to be gathered and a great reservoir on the side of the mountain kept filled. Great masses of dry, sweet grass, often changed, must be harvested and brought to the entrance of the cavern, for bedding. A score of other tasks kept the outsiders busy always—and the driving force was that, did the slaves become disobedient, the slight supply of mineral vapor available in the outside world would be cut off utterly, and all outside would surely die, slowly and in agony.

Those within the cavern were the rulers. They would always remain the rulers, and those outside would remain the slaves to wait upon them. And we--how strangely he pictured us, as he saw us!--were not to return to our queer worlds, that we might bring many other ships like the Ertak back to interfere. No.

The pupils of his eyes contracted, and the leafy structure of his nose fluttered as though with strong emotion.

No, we would not go back. He would give a signal to those of his creatures who stood behind us--a sort of soldiery, I gathered--and our heads, our legs, our arms, would be torn from our bodies. Then we would not go back to bring--

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That was enough for me.

"Men!" I spoke softly, but with an intensity that gave me their instant attention, "it's going to be a fight for life. When I give the signal, make a rush for the entrance by which we came in. I'll lead the way. Use your pistols, and your bombs if necessary. All right--forward!"

Correy's great shout rang out after mine, and I flung my menore in the face of the nearest guard. It bounced off as though it had struck a rubber ball. Behind me, one of the men called out sharply; I heard a sharp crunch of bone, and with a pang realized that the Ertak's log would have at least one death to record.

A dozen tentacles lashed out at me, and I sprayed their owners with pellets from my atomic pistol. The air was filled with the shouts of my men and the whispers of our enemies. All around me I could hear the screaming of ricochets from our pistols. Twice atomic bombs exploded not far away, and the solid rock shook beneath my feet. Something shot by close to my face; an instant later a limp bundle in the blue and silver uniform of our Service struck the rock wall of the cavern, thirty feet away. The strength in those rubbery tentacles was terrible.

The pistols seemed to have but little effect. They wounded, but they did not kill unless the pellet struck the head. Then the victim rolled over, rocking idiotically on its middle.

"In the head, men!" I shouted. "That downs them! And keep the bombs in action. Throw them against the walls of the cavern. Take a chance!"

A ragged cheer went up, and I heard Correy's voice raised in angry conversation with the enemy:
"You will, eh? There!... Now!... Ah!--right--through--the--eye. That's--the place!"

* * * * *

A score of times I was grasped and held by the writhing arms of the angry horde whispering all around me. Each time I literally shot the tentacle away with my atomic pistol, leaving the severed end to unwrap itself and drop from my struggling body. The things had no blood in them.

Steadily, we fought our way toward the doorway, out of the cavern, down the passageway, pressed into a compact, sweating mass by the pressure of the eager bodies around us. I have never heard any sound even remotely like the babel of angry, sibilant whispers that beat against the walls and roof of that cavern.

I had saved my own bombs for a specific purpose, and now I unslung them and managed to work them up above my shoulders, one in either hand.

"I'm going to try to blow the entrance clear, men," I shouted. "The instant I fling the bombs, drop! The fragments will be stopped by the enemy crowding around us. One ... two ... three ... drop!"

The two bombs exploded almost simultaneously. The ground shook, and all over the cavern masses of stone came crashing to the floor. Bits of rock hummed and shrieked over our heads. And--yes! There was a draft of cooler, purer air on our faces. The bombs had done their work.

"One more effort and we're outside, men," I called. "The passage is open, and there are only a few of the enemy before us. Ready?"

"Ready!" went up the hoarse shout.

"Then, forward!"

It was easy to give the command, but hard to execute it. We were pressed so hard that only the men on the
outside of the group could use their weapons. And our captors were making a terrible, desperate effort to hold us.

Two more of our men were literally torn to pieces before my eyes, but I had the satisfaction of ripping holes in the heads of the creatures whose tentacles had done the beastly work. And in the meantime we were working our way slowly but surely to the entrance.

* * * * *

I glanced up as I dodged out into the open. That soft humming sound was familiar, and properly so. There, at an elevation of less than fifty feet, was the Ertak, with Hendricks standing in the exit, leaning forward at a perilous angle.

"Ahoy the Ertak!" I hailed. "Descend at once!"

"Right, sir!" Hendricks turned to relay the order, and, as the rest of the men burst forth from the cavern, the ship struck the ground before us.

"All hands board ship!" I ordered. "Lively, now." As many years as I have commanded men, I have never seen an order obeyed with more alacrity.

I was the last man to enter, and as I did so, I turned for a last glance at the enemy.

They could not come through the small opening my bombs had driven in the rock, although they were working desperately to enlarge it. Leaping back and forth between me and the entrance I could see the vague, shadowy figures of the outside slaves, eagerly seeping up the life-giving fumes that escaped from the cavern.

"Your orders, sir?" asked Hendricks anxiously; he was a very young officer, and he had been through a very trying experience.

"Ascend five hundred feet, Mr. Hendricks," I said thoughtfully. "Directly over this spot. Then I'll take over.

"It isn't often," I added, "that the Service concerns itself with economic conditions. This, however, is one of the exceptions."

"Yes, sir," said Hendricks, for the very good reason, I suppose, that that was about all a third officer could say to his commander, under the circumstances.

* * * * *

"Five hundred feet, sir," said Hendricks.

"Very well," I nodded, and pressed the attention signal of the non-commissioned officer in charge of the big forward ray projector.

"Ott? Commander Hanson speaking. I have special orders for you."

"Yes, sir!"

"Direct your ray, narrowed to normal beam and at full intensity, on the spot directly below. Keep the ray motionless, and carry on until further orders. Is that clear?"

"Perfectly, sir." The disintegrator ray generators deepened their purr as I turned away.

"I trust, sir, that I did the right thing in following you with the Ertak?" asked Hendricks. "I was absolutely without precedent, and the circumstances were so mysterious--"

"You handled the situation very well indeed," I told him. "Had you not been waiting when we fought our way into the open, the nearly invisible things on the outside might have--but you don't know about them yet."

Picking up the microphone again, I ordered a pair of searchlights to follow the disintegrator ray, and made my way forward, where I could observe activities through a port.

The ray was boring straight down into a shoulder of a rocky hill, and the bright beams of the searchlights glowed redly with the dust of disintegration. Here and there I could see the shadowy, transparent forms of the creatures that the self-constituted rulers of this world had doomed to a demi-existence, and I smiled grimly to myself. The tables would soon be turned.

* * * * *

For perhaps an hour the ray melted its way into the solid rock, while I stood beside Ott and his crew, watching. Then, down below us, things began to happen.

Little fragments of rock flew up from the shaft the ray had drilled. Jets of black mud leaped into the air. There was a sudden blast from below that rocked the Ertak, and the shaft became a miniature volcano, throwing rocky fragments and mud high into the air.

"Very good, Ott," I said triumphantly. "Cease action." As I spoke, the first light of the dawn, unnoticed until now, spread itself over the scene, and we witnessed then one of the strangest scenes that the Universe has ever beheld.

Up to the very edge of that life-giving blast of mineral-laden gas the tenuous creatures came crowding. There were hundreds of them, thousands of them. And they were still coming, crowding closer and closer and closer, a mass of crawling, yellowish shadows against the sombre earth.

Slowly, they began to fill out and darken, as they drew in the fumes that were more than bread and meat and
water to us. Where there had been formless shadows, rotund creatures such as we had met in the cavern stood and lashed their tentacles about in a sort of frenzied gladness, and fell back to make room for their brothers.

* * * * *

"It's a sight to make a man doubt his own eyes, sir," said Correy, who had come to stand beside me. "Look at them! Thousands of them pouring from every direction. How did it happen?"

"It didn't happen. I used our disintegrator ray as a drill; we simply sunk a huge shaft down into the bowels of the earth until we struck the source of the vapor which the self-appointed 'ruling class' has bottled up. We have emancipated a whole people, Mr. Correy."

"I hate to think of what will happen to those in the cavern," replied Correy, smiling grimly. "Or rather, since you've told me of the pleasant little death they had arranged for us. I'm mighty glad of it. They'll receive rough treatment, I'm afraid!"

"They deserve it. It has been a great sight to watch, but I believe we've seen enough. It has been a good night's work, but it's daylight, now, and it will take hours to repair the damage to the Ertak's hull. Take over in the navigating room, if you will, and pick a likely spot where we will not be disturbed. We should be on our course by to-night, Mr. Correy."

"Right, sir," said Correy, with a last wondering look at the strange miracle we had brought to pass on the earth below us. "It will seem good to be off in space again, away from the troubles of these little worlds."

"There are troubles in space, too," I said dryly, thinking of the swarm of meteorites that had come so close to wiping the Ertak off the records of the Service. "You can't escape trouble even in space."

"No, sir," said Correy from the doorway. "But you can get your sleep regularly!"

And sleep is, when one comes to think of it, a very precious thing. Particularly for an old man, whose eyelids are heavy with years.

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Contents

NO MOVING PARTS
By Murray F. Yaco

Hansen was sitting at the control board in the single building on Communications Relay Station 43.4SC, when the emergency light flashed on for the first time in two hundred years.

With textbook-recommended swiftness, he located the position of the ship sending the call, identified the ship and the name of its captain, and made contact.

"This is Hansen on 43.4SC. Put me through to Captain Fromer."

"Fromer here," said an incredible deep voice, "what the devil do you want?"

"What do I want?" asked the astonished Hansen. "It was you, sir, who sent the emergency call."

"I did no such thing," said Fromer with great certainty.

"But the light flashed--"

"How long have you been out of school?" Fromer asked.

"Almost a year, sir, but that doesn't change the fact that--"

"That you're imagining things and that you've been sitting on that asteroid hoping that something would happen to break the monotony. Now leave me the hell alone or I'll put you on report."

"Now look here," Hansen began, practically beside himself with frustration, "I saw that emergency light go on. Maybe it was activated automatically when something went out of order on your ship."

"I don't allow emergencies on the Euclid Queen," said Fromer with growing anger. "Now, if you don't--"

Hansen spared himself the indignity of being cut off. He broke contact himself. He sighed, reached for a book entitled Emergency Procedure Rules, and settled back in his chair.

Fifteen minutes later the emergency light flashed on for the second time in two hundred years. With its red glow illuminating his freckled excited face, Hansen triumphantly placed another call to the Euclid Queen.

"This is Hansen on 43.4SC. Let me speak to Captain Fromer, please."

"Er--the Captain has asked me to contact you. I'm the navigator. I was just about to call you. We have a small problem that--"

"I'll speak to the Captain," Hansen repeated grimly.

"Now see here. I'm perfectly capable of handling this situation. Actually, it's hardly even an emergency. You were, it seems, signaled automatically when--"
"If you'll check your emergency procedures," Hansen said, holding his thumb in the Rule Book, "you'll note that the Relay Station Attendant contacts the Captain personally during all emergencies. Of course, if you want to violate--"

"Look, old man," said the navigator, now sounding on the verge of tears, "try to realize the spot I'm in. Fromer has ordered me to handle this thing without his assistance. He seems to feel that you have a grudge of some kind--"

"If you don't put me in touch with Captain Fromer in five minutes, I'll put through a call to Sector Headquarters." Hansen signaled off contact. If he knew nothing else about the situation, he knew that he had the upper hand.

Five minutes later Captain Fromer called him back. "I am calling in accordance with emergency procedures," Fromer said between clinched teeth. "The situation is this: We are reporting an emergency--"

"What class emergency?" Hansen interrupted.

"Class?" asked Fromer, obviously caught off guard.

"Yes, Captain. There are three classes of emergencies. Major class, which would include death and injury. Mechanical class, including malfunction of Hegler units and such. And General class--"

"Yes, yes, of course, General class by all means," Fromer said hurriedly. "You see, it's hardly even an emergency. We--"

"Just what is the nature of the trouble, Captain?"

"Why, uh, well it seems that we were doing a preliminary landing procedure check, and ..."

"Yes, go on."

"Why, er, it seems that we can't get the door open."

It was Hansen's turn to be taken aback. "You're pulling my leg, sir."

"I most certainly am not," Captain Fromer said emphatically.

"You really mean that you can't open the door?"

"I'm afraid so. Something's wrong with the mechanism. Our technical staff has never encountered a problem like this, and they advise me that any attempt at repair might possibly result in the opposite situation."

"You mean not being able to get the door closed?"

"Precisely. In other words, we can't land."

"I see. Then I'm afraid there's nothing I can do except advise Sector Headquarters to send an emergency repair crew."

Captain Fromer sighed. "I'm afraid so, too. How long will it take for a message to get there with your transmitting equipment?"

"Two days, Captain. At a guess, there'll be a ship alongside within the week. You'll be maintaining your present position, I assume?"

"Oh, we'll be here, all right," Fromer said bitterly. Then he cut contact.

As the single occupant of a large asteroid with nothing but time and boredom on his hands, Hansen was enjoying the whole situation immensely. He allowed himself the luxury of several dozen fantasies in which his name was mentioned prominently in galaxy-wide reports of the episode. He imagined that Captain Fromer was also creating vivid accounts--of quite another sort--that would soon be amusing several hundred billion news-hungry citizens of the Federation.

When the repair ship arrived, it came, to Hansen's astonishment, to the asteroid, and not alongside Fromer's ship. He soon found out that there was someone else who shared the Captain's embarrassment.

"I'm Bullard," said a tall, thin, mournful man. "Mind if I sit?"

"Help yourself," Hansen waved a hand toward the meager accommodations. He had no idea why a Senior Engineer was being so deferential, but he enjoyed the feeling of power.

"You're probably wondering about a lot of things," Bullard began sadly. "Frankly, we don't have any ideas about how we can fix Captain Fromer's door."

He waited to let that sink in. Then he continued: "It took us three days back at the base to find out that when these ships were built, almost five hundred years ago, nobody bothered to include detail drawings of the door mechanism."

"But why? You certainly know how to build--"

"We know how to build Star Class ships, sure. We've built a few in the past century or two. There's never been need for replacement, really. These ships are designed to last forever. The original fleet was conceived to fill the System's needs for a full thousand years."

"But the doors on the few ships that have been built. How--"

"The ship's we've built were exact duplicates of Captain Fromer's ship--except for the door." Bullard's long face
radiated despair. "No one ever questioned why the door mechanism wasn't included in the original plans. We simply
designed another type--a different type--of door."

"Well, you certainly can find out how this particular door works, can't you?"

"I hope so," Bullard said, wringing his hands. "But we have a couple of other problems. Number one, Captain
Fromer has an extremely important passenger aboard. None other than His Exalted Excellency, R'thagna Bar. He is--
or was--on his way home after concluding a treaty of friendship with the President of the Federation."

Hansen managed a whistle.

"Furthermore," Bullard continued, "His Excellency has to be home soon to get there in time for the mating
season. This occurs once in a lifetime, I'm told, and this is his only chance to continue the ancestral rule--"

"Wait a minute," Hansen said. "Are you trying to say that you can't solve a simple problem like getting him
home and getting him out of the ship? You can always cut it in two, can't you?"

"These ships were made to last forever," Bullard explained. "The hull is, of course, pseudo-met, but, not the
kind of pseudo-met used for other applications. In short, about the only way you'll get in that ship is to vaporize it."

"But can't you simply disassemble the door mechanism? My God, how complicated can it be?"

"We're going to try to do just that," Bullard said without a trace of confidence. "As far as the complication goes,
let me say just this: it's full of moving parts."

"What are you getting at?" Hansen asked.

"Just this. These ships are perfect mechanisms. There is hardly anything in them that could be called a moving
part. Now a door has to open and close. Sure, we devised a simple, safe way to do it a few hundred years after the
original fleet was built. The men who designed the original door mechanism felt, perhaps, that it was incongruous to
include it in the first place. Maybe that is why they threw away the plans. God knows, it is incongruous. Look! Here's a
photo we took of one in a ship back at base."

Hansen scanned the photograph. It was a meaningless jumble. He handed it back. "Well, make yourself at
home. I'm afraid that the only thing I can help with will be radio communication to Captain Fromer's ship."

"Good enough," Bullard said. "I'm expecting someone else tomorrow. After you bring him down, feel free to
drop over and see me anytime."

Bullard went back to his ship, and Hansen went to bed. He dreamed of His Exalted Excellency R'thagna Bar,
growing angrier day by day as the time of mating came closer. In his dream he suddenly came upon a magnificent
solution to the problem, a solution involving a telepathic system of fertilization. He woke up before he had
completely worked out the details. Bullard's friend arrived the same morning. He was a small, dark active little man whom Hansen immediately
disliked.

"Meet Dr. Quemos," Bullard said when Hansen dropped in on them. "Dr. Quemos is a specialist in the history
of technology. He thinks he knows how our cute little door mechanism is made."

"Can't say for sure," Quemos said, "but I'd guess that those components are made of metal--real metal."

"I thought that metal was used only in jewelry," Hansen said.

Dr. Quemos grinned slyly. "That's what most people think. Actually, refined metal of various types was used in
large masses, formed masses, for thousands of years. Historically speaking, the pseudo-mets are relatively new."

"It's difficult to imagine metal functioning as machinery," Hansen mused.

"And you say that this door mechanism has moving parts, lots of them?"

"Moving parts are nothing to be afraid of," Quemos said. "Here, look at this." He put something small on the
table, much in the manner of a young boy dropping a garter snake in the midst of school girls. Bullard and Hansen
crowded around. "Now, take turns," said Quemos sharply, "and don't drop it. It's priceless, I assure you." The
ancient wrist watch with its transparent back was passed from hand to hand.

"Frightening little monster, isn't it," Bullard said.

"Those small round wheels are called gears," elucidated Quemos, "one gear turns another, which turns another,
and so on. I rather imagine that your door is operated on some similar principle."

"I seem to be the one who asks all the schoolboy questions," Hansen began, "would somebody tell me why
Captain Fromer doesn't take His Excellency to his home planet, land the ship, and then let his technical staff tear off
the door mechanism?"

"We've gone through that," Bullard said wearily. "Unfortunately we need special tools. And there's no way to
get them into the ship."

"Can I speak to Captain Fromer?" Quemos asked.

"Right away," Hansen said. He pressed his hand in various patterns on his belt. "This is Hansen. Let us talk to
Captain Fromer, please."
"Fromer here. Who is it?"
"Dr. Quemos speaking. How is your passenger?"
"My passenger is fine. But he keeps telling me that he is very anxious to plant his seed. When can you get us out of here?"
"Plant his seed?" said Quemos.
"There's nothing salacious about this, I've been assured. He simply has a biological craving at this time in his life to--to plant his seed."
"I got problems like that, too," Bullard said, "but I don't go around telling everybody."

"Stop clowning," Fromer snapped, "you guys better find a way to fix this damn door or you'll have a galactic war on your hands. Anybody have any ideas yet?"
"We're sure that the door mechanism is made of metal," Quemos said, "and the construction is probably based on the principal of a worm gear."
"A what?"
"A worm gear, Captain," Quemos said patiently. "It's an ancient metal device that was sometimes used for closing large doors. There is also the possibility that the door is closed and opened by dogs. These seem to have been used, at least, to operate doors of undersea crafts. Although we're not quite certain about the function of dogs."
The captain maintained a stony silence.
"Also," Quemos continued, "we have unearthed, so to speak, a reference to a metal component called a babbitt-"

"Now see here!" Captain Fromer roared, "who do you think you're kidding with this talk about worms, dogs and rabbits--"
"Babbitts, Captain, babbitts! Perhaps a type of bearing. Anyway, we're at work on the problem, I assure you." Quemos motioned to Hansen that he was through talking.

During the next three days, Hansen twice visited Bullard and Quemos. On each occasion, he found the two men in trance-like conditions, ostensibly thinking through the problem that they had been assigned to solve, but more probably, Hansen guessed, brooding about the reaction of Sector Headquarters to their daily progress reports which Hansen had been relaying for them. Hansen had only sympathy for the people back at Sector Headquarters, for if these two experts were the Galaxy's two top trouble-shooters, the Federation, was not, as Hansen put it to himself, in very good shape to fight a war with one hundred billion enraged citizens who worshiped His Exalted Excellency R'thagna Bar almost as much as they did his seed.

Hansen went back to his reading, only to be interrupted with increasing frequency by message transmissions from an increasingly alarmed Sector Headquarters. Most messages were addressed to Bullard, and were bravely designed to disguise the senders' hysteria, while at the same time urging Bullard on to more magnificent efforts. A few messages, fairly representative of the state of affairs as time wore on reflected an increasing suspicion on the part of Sector Headquarters that Quemos and Bullard, although certainly tops in their fields, were not tops enough.

SEC HDQ BULLARD, COM. RLY. 43.4SC
PRESIDENT WOULD LIKE ESTIMATE OF WHEN DOOR WILL BE OPENED. YOU SURE YOU CAN HANDLE? EMPHASIZE THAT POLITICAL SITUATION NOW GETTING TOUCHY. REPEAT TOUCHY. R'THAGNA BAR CALLING ON PRESIDENT TODAY TO MAKE DEMAND THAT SEED BE PLANTED ON TIME. SURE YOU DON'T NEED MORE HELP?
CMD GENERAL
CMD GENERAL
NO HELP NEEDED. MAKING PROGRESS, ASSURE PRESIDENT. TODAY FOUND OUT METAL IN MECHANISM IS VERY HARD. IN CONSTANT RADIO TOUCH WITH FROMER. PASSENGER IMPATIENT BUT QUIETER. SLEEPS MORE NOW. THIS SIGNIFICANT? QUEMOS DEVELOPING THEORY OF MECHANISM. SAYS WILL TAKE TIME TO WORK OUT. HOW MUCH TIME WE HAVE? WHEN MUST SEED BE PLANTED?
BULLARD
SEC. HDQ. BULLARD, COM. RLY. 43.4SC
MUST HAVE ESTIMATE WHEN DOOR OPENS. THIS AN ORDER. AMBASSADOR THREATENING WAR. CAN'T GIVE DEADLINE OF SEED PLANTING TIME SINCE SUBJECT VERY TABOO. OUR BIOLOGISTS SAY R'THAGNA BAR SLEEPY SIGNIFICANT. MAY BE PRELUDE TO SEEDING TIME. TELL ABOUT QUEMOS THEORY IN NEXT COMMUNICATION. WILL EVALUATE HERE. NICE TO KNOW METAL IS HARD. KEEP UP GOOD WORK. PRESSURE HERE TO SEND YOU HELP. PRESIDENT
SAYS WHOLE FEDERATION PRAYING FOR DOOR TO BE FIXED. SAYS TO HURRY UP.

CMD GENERAL

CMD GENERAL

NO ESTIMATE POSSIBLE. QUEMOS THEORY ALMOST COMPLETE. STATES THAT MECHANISM BUILT ON PRINCIPLE OF WORM GEAR. REPEAT. WORM GEAR. TODAY INSTRUCTED FROMER'S CREW TO JIGGLE MOVING PARTS OF MECHANISM AT RANDOM. PARTS WOULD NOT JIGGLE. FROMER STATES THAT R'THAGNA BAR SLEEPS ALL TIME AND COLOR CHANGES TO BLUE AND RED ON STOMACH. THIS SIGNIFICANT?

BULLARD
SEC HDQ BULLARD, COM. RLY 43.4SC.

IMPORTANT YOU AMPLIFY LAST MESSAGE. RED AND BLUE ON STOMACH? WHY R'THAGNA BAR UNDRESSED? INVESTIGATE! PRESIDENT ORDERS HELP SENT. HELP ON WAY. REPEAT. WHY R'THAGNA BAR UNDRESSED?

CMD GENERAL

FROMER ADVISES TELL YOU SHIPS PHYSICIAN HAS PUT R'THAGNA BAR IN REFRIGERATOR.

QUEMOS
SEC HDQ QUEMOS. COM. RLY. 43.4SC.

TAKE OUT OF REFRIGERATOR! THIS AN ORDER! WHY UNDRESSED?

CMD GENERAL

BULLARD MAKING MODEL OF MY DRAWINGS. READY SOON. R'THAGNA BAR OUT OF REFRIGERATOR AS REQUESTED BUT SHIPS PHYSICIAN VERY ANGRY AND WANTS TO PUT BACK IN. COLOR ON STOMACH PINK AND YELLOW WITH BLUE SQUARES. THIS SIGNIFICANT?

QUEMOS

It went on like this for several more days. Hansen, at first amused, was now alarmed and completely convinced that both Quemos and Bullard were thoroughly useless. The messages were his only source of information, since both "experts" were too immersed in their work to talk with him. As his alarm grew, he decided that he might at least try to strike up a friendship with someone on board Captain Fromer's sealed ship--someone who might have something comforting to report. He called up the ship's navigator.

"This is Hansen. How're things going up there?"

"Ha!"

"What's that mean? Good or bad?"

"It means," the navigator said, while yawning, "that things are falling apart rapidly. In fact, in a day or two I don't think it'll make much difference whether or not they open that damn door."

"You, er, care to fill me in?"

"Why not?" said the navigator, with the voice of a man who knows that it is too late for anything to matter. "The members of the crew are divided into two factions. It appears that our physician has rallied half the crew to support his medical contention that our exhalted passenger belongs in the refrigerator. The good captain, with some justice, one must admit, thinks that he is in command of the ship, and prefers to believe that R'thagna Bar belongs out of the refrigerator."

"Who seems to be winning the argument?"

"Argument? There's no argument, old man--it's open warfare. No weapons aboard, of course, but the two teams are grappling up and down the corridors and shuttling our exhalted passenger in and out of the ice box about four times each hour. Quite a sight, really. Right now he's in the refrigerator, but the other team--"

"Let me know who's ahead from time to time, will you?" Hansen heard himself say.

"Glad to oblige," the navigator said, yawning again. "Oh, incidentally, have they sent for help yet?"

Hansen said with some surprise, "Why, as a matter of fact, Sector Headquarters is sending some help. How did you know?"

"Bound to happen sooner or later, old man. When the going really gets tough they always get around to sending a Gypsy. Only way to get anything done, you know."

"I don't know," Hansen said reluctantly. "Why is it that everyone knows except me? What, please, is a Gypsy?"

"You're too young to know everything, old man," the navigator said. "You're especially too young to know about one of the Federation's best kept secrets. But you might as well, I suppose. The fact is that a Gypsy is a generally vagrant, dirty, thieving, clever scoundrel who will not work, who has absolutely no respect for order or
authority, who believes that our institutions are effete and--"

"But then why--"

"Patience, patience," cautioned the navigator, haughtily, "if I am to reveal everything I know, I must do it in my own way. The description I just gave you is not necessarily true. It is simply the way that Sector Headquarters feels about Gypsies. Common jealousy, really. It seems that from time to time, our perfect little galactic society spawns men who don't care to be cast in the common mold. In short, there are a few men around with brains who don't think that it means very much to wear pretty uniforms or fancy titles."

"Uniforms like yours?" asked Hansen.

"Precisely," the navigator said sadly. "The truth of the matter is, of course, that I only play at being a navigator. I couldn't get this ship off course, if I tried. The same is true with the four engineering officers who stand around watching the Hegler drive units. They occasionally make a ceremonial adjustment, but beyond that, they simply stand around looking pretty."

"No moving parts." Hansen said.

"No moving brains, if you like. Anyway, a Gypsy has--somewhere along the line--learned how to do things. They'll take an emergency call about once a year--if they happen to feel like it. Then they charge about half a million credits."

"You mean they have an organization, standard rates and--"

"Heavens no!" the navigator said. "They hate anything that smells like organization. They don't even specialize in any certain kind of work. One year they'll be fascinated by sub-nucleonics, the next by horse racing. Very erratic. Can't keep attention on any one thing. Heard of one once who engaged in fishing and alcohol drinking. Brilliant mathematician, too. But he'd only take a call once every three years or so."

"For a half million credits a crack, eh? You could live pretty well for three years on that."

"Strangely enough," the navigator said thoughtfully, "they don't really have any interest in money. If you'd ever met one, you'd know that the high fee is sort of a penalty they mete out to everyone else for being so dumb."

"Well, one thing for sure," Hansen said, "if Bullard and Quemos are the cream of the crop, I'm on the side of the Gypsies."

"Ah, youth!" the navigator said, "I, too, once had such dreams--"

* * * * *

"We'll see about the dreams," Hansen said, almost menacingly, "I didn't spend six years in that damn school just to sit around in a pretty uniform for the rest of my life."

"Oh, you'll get used to it. In fact, you'll like it after a while. The home leaves. The fuss your friends will make over you when you step off the ship. The regular and automatic promotions in grade with the extra gold band added to your sleeve; the move from one outpost to an always larger installation. You'll never do much, of course, but why should you? After all, there aren't any moving parts."

Hansen cut the communicator off. He stood there for a moment, feeling depressed and betrayed. Automatically he reached down and flicked imaginary dust from his blue sleeve with its narrow solitary gold band. Ten minutes later the Gypsy's ship signaled for landing.

The man who walked into Hansen's control room was hardly the ogre he had been prepared for. He looked, Hansen was later to reflect, like Santa Claus with muscles in place of the fat. Wearing an almost unheard of beard and dressed in rough clothes, he walked across the room and made short work of the usual formalities. "Name's Candle," said the man. "Where's those two phonies I'm supposed to replace?"

"You'll have to go suit up and go back through the airlock," Hansen said, motioning to the door. "They're in their ship. It's the one next to yours. Want me to tell them you're on your way over?"

"Hell, no," said Candle, grinning, "I'll surprise 'em. Now, suppose you and me sit down and have a little chat."

They sat and Candle pumped Hansen of everything he knew about the entire situation. An hour later, Hansen felt almost as if he had been had. "Is that all?" he asked, wearily.

"I got the facts," Candle said. "Now let's go throw those experts out." It wasn't quite that simple. Neither Bullard nor Quemos had any intention of simply clearing out. "Who the hell you think you are," Bullard said, "to come over here and order us off? We didn't even ask for help. And, God knows, you couldn't supply it anyway."

Bullard, with evident distaste, ran his eyes up and down Candle's clothing.

Dr. Quemos had some ideas, too. "Letter of authority or no letter of authority," Quemos said, pointing a manicured forefinger at the paper in Candle's hand, "you'll ruin everything! You have no idea what you're up against. We've spent weeks working this thing out--"

Candle grinned. "What've you worked out?"

"Why--why we know that this is a metal double enveloping worm gear."
"Wrong," Candle said. "It's a single enveloping worm gear. It's made of steel with an aluminum alloy wheel gear and the two parts have corroded and stuck. The whole mechanism was originally designed for submarines."

Quemos started to say something, then turned and looked at Bullard for reassurance. "He's crazy," Bullard said, "he's making it up as he goes along. How could he possibly know what he's talking about? Why, there haven't been any submarines for centuries."

"I'm tired of playing games," Candle said, no longer grinning. "The boy and I have work to do. You two are in the way. You'll only take up time if I have to work with you and show you what to do. I want you and your ship out of here in half an hour."

"Who's going to make us?" Bullard asked with great originality.

"I am."

Everybody turned around to see who else had entered the conversation. It was Hansen. "I'm going to give you fifteen minutes, not thirty," Hansen said. "Then I'm going to turn the grid power on at full intensity. You can either use it to take off, or sit around and roast alive inside your ship."

Candle turned and looked at Hansen with new respect. "Okay ... Let's go back to your place. I've still got some things to figure out."

Quemos was on the verge of hysteria. "You're bluffing! You wouldn't dare. I'll report this!"

Fifteen minutes later, the ship headed for space.

* * * * *

Back in Hansen's room, the two men ate a quick lunch, then sat at the table and talked about Candle's plans for opening the reluctant door. "The way I figure it," Candle said, "I think that we can handle the whole thing by radio. Which reminds me, one of these days I'm going to build a telescreen that will transmit and receive through pseudo-met. Not too difficult really if you approach the problem."

"I better get Fromer for you," Hansen said hurriedly.

"Fromer here," said the bass voice.

"This is Candle. Let me talk to one of your so-called engineering officers."

"Who the hell--"

"Shut up and go get 'em," Candle growled back. "And one more yelp out of you and you'll stay in that ship till you rot."

There was a pause, then Fromer again, a meek Fromer. "My chief engineering officer is with me."

"Okay. Now get this. Come to think of it, you'd better record it. Number one: By now you know which component is a worm gear. You will notice, I'm quite certain, that it engages a large notched wheel. The reason that the door will not move is because at the point where the two gears meet, some of the metal has oxidized. For possible use in future emergencies, I offer this explanation. The entire mechanism is subject to periodic vacuum, when the airlock door is operated. In between times, the mechanism is in the ship's atmosphere. A condition of lower oxygen content thus obtains around the sealed off area, and such an area is anodic--in other words, corrosible with respect to the surrounding areas in which oxygen has free access. Now, since this door has opened and closed successfully for about five hundred years, it appears that there's a special reason why it suddenly refuses to function. At a guess, you would experience this condition of intense corrosion only when the aluminum in the wheel gear is exposed to something like sodium hydroxide, and only at the point where it controls the worm gear. Now, has this ship landed recently within such an atmosphere?"

"Three weeks ago on Ghortin IV," said the weak voice of the engineer. "We landed to get some pictures of the cloud formations for souvenirs. We dropped on the edge of a large body of water because the view was better--"

* * * * *

Candle shook his head sadly and said, "You could have avoided trouble by coming in over the land instead of the water. The heat from the ship boiled the water which undoubtedly contained sodium carbonate and calcium hydroxide; presto, and the air was filled with clouds of sodium hydroxide."

"I suggest that you steer away from all such wicked places in the future. Of course, if you'd learn how to mine ore, smelt metal, machine components--"

"First they'd have to discover fire," Hansen said out of the corner of his mouth.

"You're catching on, son," Candle said, out of the corner of his mouth. "Now, gentlemen, to open the door it will be necessary to break the corroded area apart. This is a large heavy mechanism, as such things go. Since you have no tools heavy enough to batter the corroded area apart, you'll have to make some."

"How can we?"

Candle sighed. "I wish I had time to teach you to think, but instead, you'll have to do as I tell you to do. I think you can probably make a battering ram out of water. You just--don't interrupt--find or make a long cylindrical container, fill it with water and quick-freeze it in your refrigerator--"

"But they put R'thagna Bar in the refrigerator again--"
"Then I suggest you get him the hell out," Candle said.

An hour later ten men smashed a half-ton cylinder of ice against the corroded junction of the two gears. Following Candle's instructions, they next applied the ram to the door itself, which smoothly swung open. "You'll find," Candle explained, "that the only damage will be the two missing teeth on the aluminum gear. Since only two teeth are ever in contact at any time, you can simply slide the gear forward and engage it at a point where the teeth are intact. You'll find, I'm quite sure, that your door will function properly. Also, Captain, don't pull out of here until I'm aboard. I think I'd like to bring an assistant along, too."

"An assistant?" Hansen asked.

Candle twirled the ends of his long white moustache. "You, my lad, if you'd like to go along." He pulled a letter from his pocket and fanned the air with it. "I'm in complete command of this expedition--at least until His Exalted Excellency gets home to plant his seed."

Hansen's face glowed. "I can't think of anything I'd rather do. Let's get a couple of messages off to Sector Headquarters and get on board ship."

"It may not be any joy ride," Candle said thoughtfully. "You probably haven't heard about it, but there've been a number of ship emergencies in the past few weeks."

"Door failures?"

"No. At least none that I've heard of. But at least two Hegler drives have stopped working in mid space."

"But, but there's nothing to stop working--"

Candle's eyes twinkled. "No moving parts, eh?"

Hansen reddened. "I hope I've outgrown that silly notion."

Candle peered into Hansen's eyes. "I'm sure you have. I'm sure that you will find out a lot more things for yourself. You're the kind. And we're going to need a lot of your kind, because failures--failures of so-called perfect mechanisms--are becoming more and more commonplace." Candle pointed to the emergency light on the traffic control panel. "That light will be flashing with more and more frequency in the months to come. But not just to signal trouble in space. If I were a superstitious man, I'd think that the age of the perfect machine is about to be superseded by the age of the perfect failure--mechanical failures that can't be explained on any level. I have several friends who've been in touch with me recently about--"

"You think that it's time for a change?"

Candle smiled quickly. "That's the idea. And the truth of the matter is that I am a superstitious man. I really believe, childishly, that the mechanics and motions of the galaxy may turn themselves upsidedown just to snap man out of his apathy and give him some work to do."

Upsidedown turned out to be a good word. They boarded the big ship an hour later and were respectfully ushered into the presence of Captain Fromer and his staff.

"We're underway," Captain Fromer said. "We'll be landing in nine days to deliver R'thagna Bar home."

"How is he?" Hansen asked.

Fromer shrugged. "He's been thawed out, frozen, and thawed out so many times, it's anybody's guess. Take a look for yourself."

Someone pulled back a curtain to expose the recumbent, thawing, steamy form of His Exhalted Excellency R'thagna Bar.

"Why's he undressed?" Hansen asked.

"Funny, now that you mention it," Fromer said, puzzled, "why is he undressed?"

"Fascinating! Damnedest thing I've ever seen," Candle said.

"What's so fascinating?" Fromer asked suspiciously, moving closer.

"His belly. Never saw anything like it. Those black squares keep appearing and disappearing. If I've ever seen a truly random pattern--"

"It started right after they froze him the first time," Fromer said disconsolately.

"Fascinating, by Heaven," said Candle, who was now down on his hands and knees. "Look at that top sequence! Random, yet physiological. I've got a friend on Bridan III who'd trade anything for some photos of this. Get me some photo equipment, will you?"

Captain Fromer ran his hands through what was left of his hair. "Get him some photo equipment," he said to no one in particular, "and somebody make a truce with that idiot doctor long enough to get me a sedative. About this time the ship turned upsidedown."

"But there's no reason for it!" the chief engineer said, running alongside Hansen and Candle. "The ship can't turn upsidedown. Everything is functioning perfectly!"
“Really not interested,” said Candle, running down the corridor's mile-long ceiling. “Figure something out for yourself for a change.”

“But what I can't understand,” said Hansen, dutifully trotting alongside, “is how you knew with such certainty how the door mechanism was made. Even if submarines were built like that, you'd have no way of knowing. There haven't been any submarines in centuries.”

“The hell you say,” said Candle, increasing his pace, “I built one five years ago.”

“Built one! What for?”

“For the hell of it, and it was a damned good outfit, too. I found plans in an old museum, and had the good sense not to improve on 'em. Always remember, boy, that something that really works can't be improved. That's why the submarine mechanism was adopted--not adapted--for space. The so-called 'better way' they're building 'em today is simply a disguise for the fact that most of the gas is gone from our technology.”

“What happened to the submarine?”

“Oh, I traded it to a friend for some falcons. You interested in falconry by any chance?”

“Er, no. Can't say that I am.”

“You will be,” Candle said prophetically, “you'll succumb to every enthusiasm man has ever been deviled with. You're the type. It's a disease, boy, and the big symptom isn't just curiosity, but the kind of intense curiosity that turns you inside out, devours you and ruins you for orthodoxy.”

* * * * *

Hansen had stopped listening. He was absorbed in trying to recall the pattern he had pressed on his radio belt--a pattern never taught to him--when the ship had suddenly turned upsidedown. Hesitantly, he played with the notion that he had been thinking of the ship traveling upsidedown at the time he impressed the novel pattern on the belt. Now, could that have possibly ... ?

The man and the boy disappeared down the ceiling, running at top speed to catch up as the rapidly vanishing form of R'thagna Bar was dragged and pulled relentlessly toward the refrigerator in a tug of war between the ship's wild, divided crew.

“Fascinating!” said Candle. His eyes, glittering with their own peculiar madness, remained riveted on the distant imperial belly. “Never saw anything like it!”

THE END

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Contents

AN EMPTY BOTTLE

By Mari Wolf

Hugh McCann took the last of the photographic plates out of the developer and laid them on the table beside the others. Then he picked up the old star charts--Volume 1, Number 1--maps of space from various planetary systems within a hundred light years of Sol. He looked around the observation room at the others.

“We might as well start checking.”

The men and women around the table nodded. None of them said anything. Even the muffled conversation from the corridor beyond the observation room ceased as the people stopped to listen.

McCann set the charts down and opened them at the first sheet--the composite map of the stars as seen from Earth. "Don't be too disappointed if we're wrong," he said.

Amos Carhill's fists clenched. He leaned across the table. "You still don't believe we're near Sol, do you? You're getting senile, Hugh! You know the mathematics of our position as well as anybody."

"I know the math," Hugh said quietly. "But remember, a lot of our basics have already proved themselves false this trip. We can't be sure of anything. Besides, I think I'd remember this planet we're on if we'd ever been here before. We visited every planetary system within a hundred light years of Sol the first year.”

Carhill laughed. "What's there to remember about this hunk of rock? Tiny, airless, mountainless--the most monotonous piece of matter we've landed on in years."

Hugh shrugged and turned to the next chart. The others clustered around him, checking, comparing the chart with the photographic plates of their position, finding nothing familiar in the star pattern.

"I still think we would have remembered this planet," Hugh said. "Just because it is so monotonous. After all, what have we been looking for, all these years? Life. Other worlds with living forms, other types of evolution, types
adapted to different environments. This particular planet is less capable of supporting life than our own Moon."

Martha Carhill looked up from the charts. Her face was as tense and strained as her husband's, and the lines about her mouth deeply etched. "We've got to be near Earth. We've just got to. We've got to find people again." Her voice broke. "We've been looking for so long--"

Hugh McCann sighed. The worry that had been growing in him ever since they first left the rim of the galaxy and turned homeward deepened into a nagging fear. He didn't know why he was afraid. He too hoped that they were near Earth. He almost believed that they would soon be home. But the others, their reactions--He shook his head.

They no longer merely hoped. With them, especially with the older, ones, it was faith, a blind, unreasoning, fanatic faith that their journey was almost over and they would be on Earth again and pick up the lives they had left behind fifty-three years before.

"Look," Amos Carhill said. "Here are our reference points. Here's Andromeda Galaxy, and the dark nebula, and the arch of our own Milky Way." He pointed to the places he had named on the plates. "Now we can check some of these high magnitude reference stars with the charts."

Hugh let him take the charts and go through them, checking, rejecting. Carhill was probably right. He'd find Sol soon enough.

It had been too long for one shipful of people to follow a quest, especially a hopeless one. For fifty-three years they had scouted the galaxy, looking for other worlds with life forms. A check on diverging evolutions, they had called it--uncounted thousands of suns without planets, bypassed. Thousands of planetary systems, explored, or merely looked at and rejected. Heavy, cold worlds with methane atmospheres and lifeless rocks without atmospheres and even earth-sized, earth-type planets, with oceans and oxygen and warmth. But no life. No life anywhere.

That was one of the basics they had lost, years ago--their belief that life would arise on any planet capable of supporting it.

"We could take a spectrographic analysis of some of those high magnitude stars," Carhill said. Then abruptly he straightened, eyes alight, his hand on the last chart. "We don't need it after all. Look! There's Sirius, and here it is on the plates. That means Alpha Centauri must be--"

He paused. He frowned and ran his hand over the plate to where the first magnitude star was photographed. "It must be. Alpha Centauri. It has to be!"

"Except that it's over five degrees out of position." Hugh looked at the plate, and then at the chart, and then back at the plate again. And then he knew what it was that he had feared subconsciously all along.

"You're right, Amos," he said slowly. "There's Alpha Centauri--about twenty light years away. And there's Sirius, and Arcturus and Betelgeuse and all the others." He pointed them out, one by one, in their unfamiliar locations on the plates. "But they're all out of position, in reference to each other."

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He stopped. The others stared back at him, not saying anything. Little by little the faith began to drain out of their eyes.

"What does it mean?" Martha Carhill's voice was only a whisper.

"It means that we discarded one basic too many," Hugh McCann said. "Relativity. The theory that our subjective time, here on the ship, would differ from objective time outside."

"No," Amos Carhill said slowly. "No, it's a mistake. That's all. We haven't gone into the future. We can't have. It isn't possible that more time has elapsed outside the ship than--"

"Why not?" Hugh said softly. "Why not millions of years? We've exceeded the speed of light, many times."

"Which disproves that space-time theory in itself!" Carhill shouted.

"Does it?" Hugh said. "Or does it just mean we never really understood space-time at all?" He didn't wait for them to answer. He pointed at the small, far from brilliant, star that lay beyond Alpha Centauri on the plates. "That's probably Sol. If it is, we can find out the truth soon enough."

He looked at their faces and wondered what their reactions would be, if the truth was what he feared.

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The ship throbbed softly, pulsating in the typical vibrations of low speed drive. In the forward viewscreens the star grew larger. The people didn't look at it very often. They moved about the corridors of the ship, much as they usually moved, but quietly. They seemed to be trying to ignore the star.

"You can't be sure, Hugh." Nora McCann laid her hand on her husband's arm.

"No, of course I can't be sure."

The door from their quarters into the corridor was open. Several more people came in--young people who had been born on the ship. They were talking and laughing.

"Would it be so hard on the young ones, Hugh? They've never seen the Earth. They're used to finding nothing but lifeless worlds everywhere."
One of the young boys in the hall looked up at the corridor viewscreen and pointed at the star and then shrugged. The others turned away, not saying anything, and after a minute they left and the boy followed them.

"There's your answer," Hugh McCann said dully. "Earth's a symbol to them. It's home. It's the place where there are millions more like us. Sometimes I think it's the only thing that has kept us sane all these years--the knowledge that there is a world full of people, somewhere, that we're not alone."

Her hand found his and he gripped it, almost absently, and then he looked up at their own small viewscreen. The star was much bigger now. It was already a definite circle of yellow light.

A yellow G-type sun, like a thousand others they had approached and orbited around and left behind them. A yellow sun that could have been anywhere in the galaxy.

"Hugh," she said after a moment, "do you really believe that thousands of years have gone by, outside?"

"I don't know what to believe. I only know what the plates show."

"That may not even be Sol, up ahead," she said doubtfully. "We may be in some other part of space altogether, and that's why the charts are different."

"Perhaps. But either way we're lost. Lost in space or in time or in both. What does it matter?"

"If we're just lost in space it's not so--so irrevocable. We could still find our way back to Earth, maybe."

He didn't answer. He looked up at the screen and the circle of light and his lips tightened. Whatever the truth was, they didn't have long to wait. They'd be within gravitational range in less than an hour.

He wondered why he was reacting so differently from the others. He was just as afraid as they were. He knew that. But he wasn't fighting the thought that perhaps they had really traveled out of their own time. He wondered what it was that made him different from the other old ones, the ones like Carhill who refused even to face the possibility, who insisted on clinging to their illusions in the face of the photographic evidence.

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He didn't think that he was a pessimist. And yet, after only three years of their trip, after only fifty Earthlike but lifeless worlds, he had been the first to consider the possibility that life was unique to Earth and that their old theories concerning its spontaneous emergence from a favorable environment might be wrong.

Only Nora had agreed with him then. Only Nora could face this possibility with him now. The two of them were very much alike in their outlooks. They were both pragmatists.

But this time there would be no long years during which the others could slowly shift their opinions, slowly relinquish their old beliefs and turn to new ones. The yellow sun was too large and urgent in the screen.

"Hugh!"

He turned to the door and saw Amos Carhill standing there, bracing himself against the corridor wall. There was no color at all in Carhill's face.

"Come on up to the control room with me, Hugh. We're going to start decelerating any minute now."

Hugh frowned. He would prefer to stay and watch their approach on the screen, with Nora at his side. He had no duties in the control room. He was too old to have any part in the actual handling of the ship. Amos was old, too. But they would be there, all the old ones, looking through the high powered screens for the first clear glimpse of the third planet from the sun.

"All right, Amos. I'll wait here for you, Hugh," Nora said.

He smiled at her and then followed Carhill out into the crowded corridor. No one spoke to them. Most of the people they passed were neither talking, nor paying any attention to anything except the corridor screens, which they could no longer ignore. The few who were talking spoke about Earth and how wonderful it would be to get home again.

"You're wrong, Hugh," Amos said suddenly.

"I hope I am."

The crowd thinned out as they passed into the forward bulkheads. The only men they saw now were the few young ones on duty. Except for their set, anxious faces they might have been handling any routine landing in any routine system.

The ship quivered for just a second as it shifted over into deceleration. There was an instant of vertigo and then it was gone and the ship's gravity felt as normal as ever. Hugh didn't even break stride at the shift.

He followed Carhill to the control room doorway and pushed his way in, taking a place among the others who already clustered about the great forward screen. The pilot ignored them and worked his controls. The screen cleared as the ship's deceleration increased. The pilot didn't look at it. He was a young man. He had never seen the Earth.

"Look!" Amos Carhill cried triumphantly.

The screen focused. The selector swung away from the yellow sun and swept its orbits. The dots that were planets came into focus and out again. Hugh McCann didn't even need to count them, nor to calculate their distance...
from the sun. He knew the system too well to have any trouble recognizing it.

The sun was Sol. The third planet was the double dot of Earth and moon. He realized suddenly that he had more than half expected to see an empty orbit.

"It's the Earth all right," Carhill said. "We're home!"

They were all staring at the double dot, where the selector focused sharply now. Hugh McCann alone looked past it, at the background of stars that were strewn in totally unfamiliar patterns across the sky. He sighed.

"Look beyond the system," he said.

They looked. For a long time they stared, none of them speaking, and then they turned to Hugh, many of them accusingly, as if he himself had rearranged the stars.

"How long have we been gone?" Carhill's voice broke.

Hugh shook his head. The star patterns were too unfamiliar for even a guess. There was no way of knowing, yet, how long their fifty-three years had really been.

* * * * *

Carhill shook his head, slowly. He turned back to the screen and stared at the still featureless dot that was the Earth. "We can't be the only ones left," he said.

No one answered him. They were still stunned. They couldn't even accept, yet, the strange constellations on the screen.

End of the voyage. Fifty-three years of searching for worlds with life. And now Earth, under an unfamiliar sky, and quite possibly no life at all, anywhere, except on the ship.

"We might as well land," McCann said.

The ship curved away from the night side of the Earth and crossed again into the day. They were near enough so that the planetary features stood out sharply now, even through the dense clouds that rose off the oceans. But although the continental land masses and the islands were clearly defined, they were as unrecognizable as the star constellations had been.

"That must be North America," Amos Carhill said dully. "It's smaller than the continent on the night side...."

"It might be anywhere," Hugh McCann said. "We can't tell. The oceans look bigger too. There's less land surface."

He stared down at the topography thousands of miles below them. Mountains rose jaggedly. There were great plains, and crevasses, and a rocky, lifeless look everywhere. No soil. No erosion, except from the wind and the rains.

"There's no chlorophyll in the spectrum," Haines said. "It seems to rule out even plant life."

"I don't understand." Martha Carhill turned away from the screen. "Everything's so different. But the moon looked just exactly like it always did."

"That's because it has no atmosphere," Hugh said. "So there's no erosion. And no oceans to sweep in over the land. But I imagine that if we explored it we'd find changes. New craters. Maybe even new mountains by now."

"How long has it been?" Carhill whispered. "And even if it's been millions of years, what happened? Why aren't there any plants? Won't we find anything?"

"Maybe there was an atomic war," the pilot said.

"Maybe." Carhill had thought of that too. Probably all of them had. "Or maybe the sun novaed."

No one answered him. The concept of a nova and then of its dying down, until now the sun was just as it had been when they left, was too much.

"The sun looks hotter," Carhill added.

The ship dropped lower, its preliminary circle of the planet completed. It settled in for a landing, just as it had done thousands of times before. And the world below could have been any of a thousand others.

They dropped quickly, braking through the atmosphere, riding it down. The topography came up to meet them and the general features blurred, leaving details standing out sharply, increasing in sharpness as if the valleys and mountains below were tiny microscopic crystals under a rapidly increasing magnification.

The pilot picked their landing place without difficulty. It was a typical choice, a spot on the broad shelving plain at the edge of the ocean. The type of base from which all tests on a planet could be run quickly, and a report written up, and the files of another world closed and tagged with a number and entered in one of the great storage encyclopedias.

Even to Hugh there was an air of unreality about the landing, as if this planet wasn't really Earth at all, despite its orbit around the sun, despite its familiar moon. It looked too much like too many others.

The actual landing was over quickly. The ship quivered, jarred slightly, and then was still, resting on the gravelled plain that had obviously once been part of the ocean bed. The ocean itself lay only a few hundred yards away.

Hugh McCann looked out through the viewscreen, turned to direct vision now. He stared at the waves swelling
against the shore and his sense of unreality deepened. Even though this was what he had more than half expected, he
couldn't quite accept it, yet.

"We might as well go out and look around," he said.

"Air pressure, Earth-norm." Haines began checking off the control panel by rote. "Composition: oxygen,
nitrogen, water vapor--"

"There's certainly nothing out there that could hurt us," Martha Carhill snapped. "What could there be?"

"We might check for radioactivity," Hugh said quietly.

She turned and stared at him. Her mouth opened and then snapped shut again.

"No," Haines said. "There's no radioactivity either. Everything's clear. We won't need space suits."

He pressed the button that opened the inner locks.

* * * * *

Carhill glanced over at him and then switched on the communicator, and the noises from the rest of the ship
flooded into the control room. Everywhere people were milling about. Snatches of talk drifted in, caught up in the
background as various duty officers, reported clearance on the landing. Most of the background voices were young,
talking too loudly and with too much forced cheerfulness about what lay outside the ship.

Hugh sighed, as aware of all the people as if he were out in the corridors with them. It was the space-born ones
who were doing most of the talking. The children, the young people, the people no longer young but still born since
the voyage started, still looking upon Earth more as a wonderful legend than as their own place of origin.

The old ones, those who had left the Earth in their own youth, had the least of all to say. They knew what was
missing outside. The younger ones couldn't really know. Even the best of the books and the pictures and the three
dimensional movies can give only a superficial idea of what a living world is like.

"Hugh." Carhill clutched his arm.

"Yes, Amos."

"There must be people, somewhere. There have to be. Our race can't be dead."

Hugh McCann looked past him, out at the sky and the clouds of water vapor that swirled up to obscure the sun.
The stars, of course, were completely hidden in the daylight.

"If there are any others, Amos, we can be pretty certain they're not on Earth."

"They may have left. They may have gone somewhere else."

"No!" Martha Carhill's face twisted and then went rigid. "There's no one anywhere. There can't be. It's been too
long. You saw the stars, Amos--the stars--all wrong, every one of them!"

Her hands came up to her face and she started to cry. Amos crossed over to her and put his arms around her.

Hugh McCann watched them for a moment and then he turned and left them and went out through the locks
after the young people. He didn't know what to think. He wished that they had never turned back to Earth at all, that
they had kept going, circling around the rim of the galaxy forever.

He went through the outer lock and then down the ramp to the ground.

He stood on the Earth again, for the first time since his early youth. And it was not the same. There was bare
rock under his feet and bare rock all around him, gravel and boulders and even fine grained sand. But no dust. No
dirt. No trace of anything organic or even ever touched by anything organic.

He had walked too many worlds like this. Too many bare gray worlds with bare gray oceans and clouds of
vapor swirling up into the warm air. Too many worlds where there was wind and sound and surf; where there should
have been life, but wasn't.

This was just another of those worlds. This wasn't Earth. This was just a lifeless memory of the Earth he had
known and loved. For fifty-three years they had clung to the thought of home, of people waiting for them,
welcoming them back someday. Fifty-three years, and for how many of those ship-years had Earth lain lifeless like
this?

He looked up at the sky and at all the stars that he couldn't see and he cursed them all and cursed time itself and
then, bitterly, his own fatuous stupidity.

The people came out of the ship and walked about on the graveled plain, alone or in small groups. They had
stopped talking. They seemed too numbed by what they had found to even think, for a while.

Shock, Hugh McCann thought grimly. First hysteria and tears and loud unbelief, and now shock. Anything
could come next.

* * * * *

He stood with the warm wind blowing in his face and watched the people. In the bitter mood that gripped him
he was amused by their reactions. Some of them walked around aimlessly, but most, those who were active in the
various departments, soon started about the routine business of running tests on planetary conditions. They seemed
to work without thinking, by force of habit, their faces dazed and uncaring.
Conditioning, Hugh thought. Starting their reports. The reports that they know perfectly well no one will ever read.

He wandered over to where several of the young men were sending up an atmosphere balloon and jotting down the atmospheric constituents as recorded by the instruments.

"How's it going?" he said.
"Earth-norm. Naturally--" The young man flushed.
"Temperature's up though. Ninety-three. And a seventy-seven percent humidity."

He left them and walked down across the rocks to the ocean's edge. Two young girls were down there before him, sampling the water, running both chemical and biological probing tests.

"Hello, Mr. McCann," the taller girl said dully. "Want our report?"
"Found anything?" He knew already that there was nothing to find. If there were life the instruments would have recorded its presence.

"No. Water temperature eighty-six. Sodium chloride four-fifths Earth normal." She looked up, surprised. "Why so low?"

"More water in the ocean, maybe. Or maybe we've had a nova since we were here last."

It was getting late, almost sunset. Soon it would be time for the photographic star-charts to be made. Hugh brought himself up short and smiled bitterly. He too was in the grip of habit. Still, why not? Perhaps they could estimate, somehow, how many millions of years had passed.

Why? What good would it do them to find out?

After a while the sun set and a little later the full moon rose, hazy and indistinct behind the clouds of water vapor. Hugh stared at it, watched it rise higher until it cleared the horizon, a great bloated bulk. Then he sighed and shook his head to clear it and started to work. The clouds were thick. He had to move the screening adjustment almost to its last notch before the vapor patterns blocked out and the stars were bright and unwavering and ready to be photographed. He inserted the first plate and snapped the picture of the stars whose names he knew but whose patterns were wrong, some subtly, some blatantly.

There was something he was overlooking. Some other factor, not taken into account. He developed the first plates and compared them with the star charts of Earth as it had been before they left it, and he shook his head. Whatever the factor was, it eluded him. He went back to work.

"Oh, here you are, Hugh."

He jumped at the sound of Carhill's voice. He had been working almost completely by habit, slowly swinging the telescope across the sky and snapping the plates. And trying to think.

"Why waste time on that?" Carhill added bitterly. "Who's ever going to see our records now?"

Behind Carhill, several of the other old ones nodded. Hugh was surprised that they had managed to come back to the ship without his hearing them. But of course they had come back in at sundown, as usual on a routine check, and now they were gathering to compile their reports. Hugh looked from face to face, wondering if he too was as numb and dazed and haggard appearing as they were. He probably was.

"What do you suggest, Amos?" he said.

"I say there's no use going on," Carhill said flatly. "You've all run your tests. And what have you found? No fossils. Not even a single-celled life form in the ocean. No way even to tell how many millions of years it's been."

"Maybe it hasn't been so long," Haines said. "Maybe something happened here fairly recently, and the people all went to some other system--to one of the Centauri planets, maybe."

Amos Carhill laughed bitterly. "You can say that in the face of the evidence? We know that millions of years have passed. Nothing's the same. Even the tides are three times what they were. It's obvious what happened. The sun novaed. Novaed and cooled. Do you really believe that our race has lasted that long, on some nearby system?"

* * * * *

His voice rose. He glared about at the others. He threw back his head suddenly and laughed, and the laughter echoed and re-echoed off the steel walls.

"I say let's die now!" Carhill cried. "There's no use going on. Hugh was right, as usual. We shouldn't have tried to come back. We've been fools, all these years, thinking we had a world to come home to."

The people muttered, crowded closer. They pushed into the observation room, shoved nearer to it in the outside corridor. They muttered in a rising note of panic as the numbing shock that gripped them gave way.

"Why not die here?" Martha Carhill's voice rose shrill above the sound of her husband's laughter. "We should have died here millions of years ago!"

Hugh McCann looked at her and at Amos and at all the others. He sighed. Why not? Why go on? There was no answer. Even a pragmatist gave up eventually, when the facts were all against him.

He glanced down at the reports on the table. All the routine reports, gathered together into routine form, written
up in routine terminology. Reports on an Earth-type planet that just happened to be the Earth itself.

And then, quite suddenly, the obvious, satisfactory answer came to him. The factors clicked into place, and he wondered why he hadn't thought of them long ago. He looked up from the reports, at the people on the verge of panic, and he knew what to say to quiet them. He had the factors now.

"No!" he cried. "You're wrong. There's no reason at all to assume that our race is dead!"

Amos Carhill stopped laughing and stared at him and the others stared also and none of them believed him at all.

"It's simple!" he cried. "Why has so much time passed outside the ship while to us only fifty-three years have gone by?"

"Because we traveled too fast," Carhill said flatly. "That's why."

"Yes," Hugh said softly. "But there's one thing we've been forgetting. What we did, others could do also. Probably lots of expeditions started out after we left, all trying for the speed of light."

They stared at him. Slowly the dazed look died out of their eyes as they realized what he meant, and what the concept might mean to them. The concept of other ships, following them out into time. The concept of other men, also millions of years from the Earth they had left.

"You mean," Carhill said slowly, "that you believe other people got caught in the same trap we did--that there may be others in this time also?"

Hugh nodded. "Why not? Maybe they colonized some of those Earth-type planets we checked on. Anyway, we can look for them."

"No," Carhill shook his head. "If any of them had started after us we would have crossed their paths already. We never have. We never found a trace of any other expedition. Even if there is another, even if there are colonies somewhere, we could spend another fifty years looking."

"Well," Martha Carhill whispered. "Why not? It would give us something to look for."

Hugh McCann glanced around the circle of faces and saw the new hope that came into them, the new belief that sprang into existence so quickly because they wanted to believe. He smiled, somewhat sadly, and picked up the pile of reports and the photographs he had just developed. Then he slipped out of the room, through the crowd outside, away from them and the rising hum of their voices. He didn't need to say anything more. The ship would go on.

* * * * *

"Hugh, is that you?"

"Yes, Nora."

She was waiting for him in the corridor. She came up to him and smiled and slipped her arm through his. They walked on together, down the hall past the last of the people.

"I heard what you said, Hugh. You convinced them."

He nodded. "I wonder why it took me so long to think of it."

The voices died away behind them. They were all alone. They rounded a corner where a viewscreen picked up the image of the moon, so familiar, now the only thing that was familiar about this Earth. Nora shivered.

"You were very logical, Hugh. But I didn't believe you."

He glanced around and saw that there was no one near them and that the communicators in this part of the ship were turned off. Only then did he answer her.

"I didn't believe myself, Nora."

"Tell me."

"When we're outside."

They went down the winding ramp that led to the interior of the ship. It too was deserted now. They left the carpeted, muffled corridors and their footsteps rang on the steel plates that lay down the middle of the ship, its heart, where the energy converters were, and the disposal units, and the plant rooms, and the great glass spheres of the hydroponics tanks.

"It's ironic, isn't it?" Nora said slowly. "We left here so long ago, looking for worlds with life, and we come back to find our own world dead."

"It's ironic, all right." He walked along the row of tanks until he came to the one he was searching for, and then he picked up a glass cylinder and filled it from the tank.

"I had to tell them something, Nora. They couldn't have gone on, otherwise."

The bottle was full. He stoppered it and then turned away. They crossed to the nearest lock and he pushed the button that opened it. They waited a few minutes until the door came open, and then they went out, down the ramp to the ground, across the slippery rocks. Even through the clouds there was enough light to see by.

"It's warm," she said.

"It always is, now."
They were approaching the ocean. The surf beat loudly in their ears. The spray was warm against their faces, almost as warm as the night wind.

"Tell me," she said. "You know what really happened, don't you?"

"I think so. I can't really be sure."

They paused on the low ledge where he had stood earlier and watched the girls gather their data for the reports. At their feet the waves washed up to the edges of the tide pools, eddying into and out of them softly. The water looked dark and cold, but they knew that it too was warm.

"There've been lots of changes, and they all fit a pattern," he said. "The temperature. The difference in salt content in the water. The higher tides. Those things could happen for several reasons. But there's only one explanation for the other changes, the ones I found on the star charts."

She waited. The water lapped in and out, reaching almost to where they stood.

"The Earth rotates faster now," he said. "And the stars are nearer. Much nearer than they were."

"Isn't that impossible?"

"How do we know? We exceeded the speed of light. Who could say what continuum that might have put us in? I remember an analogy I read once, in a layman's book on different theories of space-time. '--The future and the past, two branches of a hyperbola, each with the speed of light as its limit--'"

"You mean," she whispered, "that we're not in the future at all? We're in the past--the far past--before there was any life on Earth?"

* * * * *

He looked down at the pools of water at their feet, the lifeless water that according to all their old discarded theories should have been teeming with life. He nodded slowly and lifted the glass cylinder he had brought from the ship and stared at it.

"That bottle," she whispered. "You filled it with bacteria, didn't you?"

He nodded again.

"You're mad, Hugh. You can't mean that that bottle is the origin of life on Earth! You can't."

"Maybe this isn't our Earth, Nora. Maybe there are thousands of continuums and thousands of Earths, all waiting for a ship to land someday and give them life."

Slowly he unstoppered the cylinder and knelt down at the water's edge. For a minute he paused, wondering if there were other continuums or only this one, wondering just how deep the paradox lay. Then he tipped the bottle up and poured, and the liquid from the cylinder ran down into the tide pools and eddied there and was lost in the liquid of the ocean. He poured until the bottle was empty and all the single-celled bacteria from the ship's tank mingled with the warm, lifeless waters.

The water temperatures were the same. Everything was the same, and the conditions were very favorable and the bacteria would divide and redivide and keep on dividing for millions of years.

"We'll hold the ship under light speed," he said. "And in a few million years we can drop back here and see how evolution is getting along."

He stood up and she took his hand and moved closer to him. They were both shivering, despite the warmth of the air.

"But how did life originate in the beginning?" she asked suddenly.

Hugh McCann shook his head in the darkness. "I don't know. We've been all over the galaxy and haven't found life anywhere. Perhaps it can't have a natural cause. Perhaps it's always planted. A closed circle from beginning to end."

"But something--someone--must have started the circle. Who?"

He looked down at the empty cylinder that he had dropped at the water's edge and then he looked out at the ocean, lifeless no longer. And once again he shook his head.

"We did, Nora. We're the beginning."

For a long moment their eyes met and held, and then they turned and walked away from the ocean, back toward the ship, and the people. And the moonlight glinted off the empty bottle.
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