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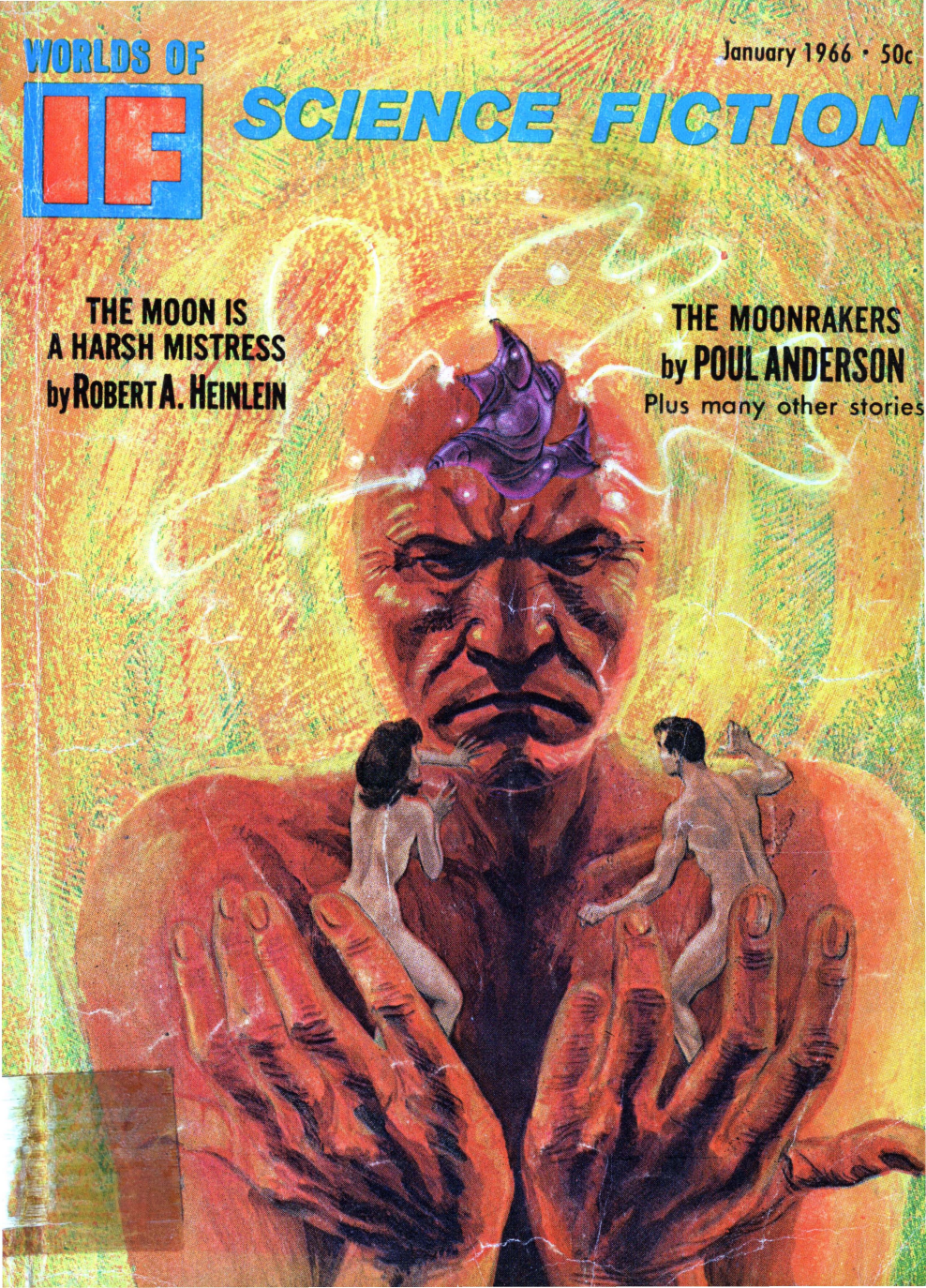
WORLDS OF IF SCIENCE FICTION

THE MOON IS A HARSH MISTRESS by ROBERT A. HEINLEIN

THE MOONRAKERS by POUL ANDERSON

Plus many other stories



WORLDS OF IF SCIENCE FICTION

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ALL NEW STORIES

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Enemies of Mankind

One of the things we like about Robert Heinlein's *The Moon Is a Harsh Mistress* is that Heinlein isn't scared by machines. So many writers are! We keep getting stories about the terrible world of the future in which machines do all the work and people turn into lotos-eaters and drones. We keep rejecting them, too; but every week there's a new crop with the same dreary idea.

The fact is, of course, machines work *for* men. They aren't our enemies; they are our slaves. It is perfectly clear to anyone who cares to look that the more work that gets done, the more real wealth there is to share; and the more machines we build and put to work for us, the more work will get done.

Of course, there are problems — and the biggest of all is arranging for the distribution of the wealth. We naturally feel that there is bound to be a catch in any system which allots a certain proportion of the Gross Terrestrial Product to each living person, and so no country in the world (including the socialist countries — maybe especially the socialist countries) just chops up its income at so much per head and passes it out every Friday. Nevertheless, the richer a country is, the richer its average citizen is. And machines are busy making all of our countries richer as fast as we let them.

As fast as we let them? Does that mean we are keeping the machines from making us rich?

Yes, indeed. As long as there are strikes against automation, we are preventing the machines from doing what they can do very well. There have been scores of strikes against automation each year. All too often they have been successful.

But in at least one case a union leadership has decided not to try to lick the machines, but to join them. The West Coast longshoremen don't fight automation. They welcome it, because they have arranged to share in the savings from the use of machines to do stevedoring work. Every dollar of savings is divided between the companies hiring the longshoremen and the union pension fund.

Good idea! Now, if only we could work out the same system for other industries. . . .

And of course we can; it just takes a little thought, is all.

Which reminds us of a good line we heard the other night, at a dinner party involving a mixed bag of scientists and science-fictioneers. Someone said something to John Pierce about machines that think like people. "That's old stuff," said Pierce. "We're now working on machines that act the way people do — *without* thinking."

Of course, that's just a joke. People don't really act without thinking.

Do they?

— The Editor.

THE MOONRAKERS

by POUL ANDERSON

Illustrated by GIUNTA

They were the fringe people of solar civilization — the space nomads whose restless drive could not be stopped!

I

The hungry man jumped from his boat and fell into silence. He could hear blood rustle along his veins, air move back through his nostrils, the tiny whirr of a pump sucking it back to the renewal tank. He was aware of tension in his flesh, the angles at which his joints were cocked, the smell of his enclosed self, an emptiness in his stomach — above everything else, that emptiness. But otherwise he was alone, the universe beyond his helmet more hollow than himself. Twelve thousand visible stars, undimmed and unwinking, powdered the black with glory. The Milky Way girdled creation, one frozen waterfall. To his left lay the sun, shrunken but still intolerably bright.

It didn't matter. It was all too remote.

He pulled consciousness back to normal, hard practicality. *I'm getting lightheaded,* he thought. *Can't afford to. Not yet.* The dead ship swelled in his vision as he neared. Light flamed so harshly off the sternward curve that he must shade that side of his face with a gauntlet. Holes gaped in the great spheroid like mouths. He selected the largest, a shattered viewport, and redirected his path with a short, begrudged jet from his propulsion tubes.

Instruments would have made possible a neater approach. He might have brought his boat nearly alongside the wreck. But he had only the minimum of electronic aids. For the rest, he must rely on the senses and muscles which he, and his fathers before him, had trained to some kind of ultimate.

His mind wandered again for a moment, and he found himself trying to imagine travel on Earth. Or even Mars. Not so much the business of open air, greenery, bigger sun, horizons reaching for miles; he thought he could pretty well visualize that from films he had seen. No, the interplay of vectors. Like running under acceleration the *whole* time . . . The hull loomed before him, a rounded cliff. He twisted about and struck boots first. The shock ran through shins to skull. Automatically, circuits embedded in the heavy soles were closed. Charges separated; the "lower" half became positive with respect to the ship. Electrons within her metal swirled to meet him. There was no danger of an arc through that insulation; he was simply held with enough force.

Careful to move just one foot at a time, he walked to the ragged edge of the hole. Sunlight spilled through, casting hard ebon shadows behind equipment and controls. He scowled. Damn! The rocks had really torn this one. She'd need a lot of expensive repair before she was fit to use again — which diminished her salvage value and so, most importantly, his commission.

Unless, of course, her cargo was special. Eagerness tingled in him, driving out languor. He entered.

By the bobbing light-puddle of his flashbeam, he made his way down a gloomy corridor and a black well to the central hold.

It wasn't sealed. Never was, on an unmanned freighter. He opened a door and stepped in among racked crates. His beam sought around, and letters jumped into view:

HESPERIA ELECTRONICS
SCX-107
CONDUCTOR ELEMENTS
2000

He didn't bother with the handling directions that followed. His light sprang from place to place, finding the same words repeated. His heart began to thutter.

"Holy Judas," he mumbled, and he went on in a litany of joy which got louder and more profane by the minute.

This wasn't the entire cargo. Nobody could want so many room-

temperature superconductor units at once. But what he had seen made him rich.

He trembled. A wave of weakness passed through him. He recognized the symptoms. *Better get back fast. Never mind the rest o' what's aboard. Plenty time to look, later on.*

Whirling, he left the room in such a rush that he pulled both feet free and must drift, sickened by rotational forces, with many curses until he encountered a bulkhead and got a grip. That sobered him. He proceeded cautiously thereafter, out of the ship and back to his boat. What a hell of a thing to kill his stupid self now, in any of the thousand ways that are possible in space — when women and whiskey and riot waited for him in the Keep.

Narrow, comfortless, the vessel enclosed him with metal. He cycled through the airlock and removed his spacesuit, extra careful not to touch its frosting chilled surfaces with bare hands. Then he went forward, took his navigational sights, computed his quantities, and sent a maser beam straight across two million empty miles.

"Sadler in salvage boat *Captain Hook* to Operations Control, the Keep," he intoned. A string of code symbols followed. Chief Kerrigan took no chances. If he wasn't sure that one of his own people were trying to raise his stronghold — well, they might be Martians who had an inkling of its orbit, and he wouldn't reply.

Acknowledgement was slow in coming. Sadler added some rather insulting remarks to his call signal.

"Operations Control, the Keep, receiving Sadler in *Captain Hook*," broke from the speaker. "Hi, Dave. This is Bob Mackintosh on duty. What's the word? Over."

"I . . . I've got her." The hungry man gulped and mastered his voice. "The Martian. I'm matched to her path and I've been aboard. Cargo seems in good shape and, uh, valuable. But I'm out o' food and damn near out o' jet mass. You'll have to load some for me on the tug. Come as fast as you can, huh? Over."

Half a minute passed while the beam flew on its way and the answer returned. Sadler floated, listening to a thin hiss that was the background talking of the stars.

"You must've had a long chase, then," Mackintosh said. "Why didn't you let somebody else know who was in a better position to intercept? We were beginnin' to think she'd get clean away from us. Over."

"You know damn well why not," Sadler rapped. "I wasn't about to split my commission with anybody, long's I knew I could overhaul. Now hustle off your duff, Bob. See that I get the best, 'specially grub. I'll be able to pay for it. Then report to the Chief, and tell the other boys they can shut down their radar sweeps and come home from their orbits. Because she's mine!"

II

Though Syrtis is the biggest and busiest city on Mars, and the capital, it is also the oldest. New

skyscrapers gleam for miles around the center, each set in its own green acres, until southward the town fades into the agricultural lands that ring the equator, northward to untouched deserts of ruddy sand and raw crags. But downtown, most buildings were raised by the pioneers.

Thick walls of gray stone, red-mortared, bulk gracelessly for a few stories and end in flat roofs where flittercraft park. The trappings of modern commercialism look unnatural on such facades.

Their solidity is deceptive. Now that the atmosphere project has been completed, oxygen and water vapor are gnawing away the Martian rock so fast that the narrow, twisted streets are always dusty. This district won't last many more generations.

James Church was glad to be alive while he could still have an office there. He was somewhat of a traditionalist.

He stood at an open window, pipe in mouth, hands behind back, and looked forth while he waited for his visitor. The embrasure showed traces of the fittings which had once kept out gases lethally cold and thin. It also bore energy gun gouges from a later period, when an argument at the Mariner across the street had erupted into Bloody Tenthday.

The Mariner continued in business. People moved in and out of its door, under the corroded simulacrum of the space probe, and Church caught snatches of music, the whine of a lodestar set, even imagined he could hear dice click and roulette wheels turn. But probably the babble of gaily clad pedestrians was too loud. The sun sets late in these latitudes, during a summer twice as long as Earth's, and Syrtis had gotten down to the serious matter of amusement while daylight yet remained.

Church took a breath of air between puffs. It was cool, there would be frost tonight. Ice-crystal clouds gleamed in a purplish sky. A flight of geese crossed them. *Well, well,* he thought, *so the Ministry of Ecology really is getting somewhere with that scheme. Never expected them to. But they do say the genetic engineers have licked the drift problem. Wonder how. Must read up on it, if I ever get time.*

The intercom on his battered old desk said: "Misser Dobshinsky to see you."

Church crossed the floor. "Come on in," he said. The door heard him and opened. He stood expectant—not anybody's idea of a typical Martian, being short and stocky, gray-haired and quietly dressed, with a comfortable small paunch bulging the front of his pajamas. Only the sun-darkened skin and the faded blue eyes, crow's-footed from a lifetime of squinting across bare dunes, fitted the picture.

Philip Dobshinsky was long and lean and barrel-chested enough to pass. He was also somewhat younger, handsomer, and more colorful in his garments than Church would have looked for in a member of the Interplanetary Shippers' Associa-

THE MOONRAKERS

tion. He paused, looked around the little room cluttered with books and mementos, and registered hesitation. The outer office of Church: Investigators & Guardians was not very impressive either.

"How's your luck?" The detective offered his hand across the desk. "Sit down. Care for a reef?"

"Well—no, thanks, better not right now." Dobshinsky waved aside the proffered cigarette case, though Twin Moons was an expensive tobacco-marijuana blend. "Maybe a drink, if you will do me the service."

"Surely. Scotch? The genuine article, I swear, not that sulfuric acid they make at Devil's Kettle." Church settled into a swivel chair going back to years before the colonists were up to manufacturing loungers, and opened a coldbox.

Dobshinsky was nervous. His own seat had trouble adjusting to his contours, the way he shifted about. Church smiled as he busied himself with glasses. "I know," he drawled. "You're wondering how come a supposedly high-powered police agency operates out of such a hole in the wall. Answer's simple: I like it this way. Money spent to impress clients is better spent on good booze and food and pot and girls. Relax, son."

"I am new to these matters," Dobshinsky said. "We all are. I mean, us members of the Association. Our human control problems used to be simple. Thanks." He took his drink. Ice tinkled with the haste of his swallowing.

Church blew smoke and said, "Your call only mentioned you'd like to discuss possible business. But pretty plain, you had the asteroid piracy in mind."

"Well . . . yes." Dobshinsky squared his shoulders. "Hitherto the Neopinks Agency has done our policing for us, as you must know. They don't seem able to cope with this problem, however. If you can do something—frankly, you can have our contract from then on."

Church held a carefully noncommittal expression. But his pulse accelerated a little, and his gaze strayed to the pictures on his desk. A man with two sons in college, a daughter soon ready for it—with a desire to study at the Beaux Arts in Paris to boot—could find good use for business on that scale. Also, Mary had been talking about a better house in Thaumasia, where they usually moved during the northern hemisphere's winter . . . "Before we say any more," he murmured, "have you considered an appeal to the government?"

"Huh?" Dobshinsky lost awkwardness in startlement. "What can they do?"

"Well, this is a matter affecting the public weal. Not just one bobber gunning for another who's broken hoax limits, but a bunch of insurrectionists turned pirate who're causing serious economic loss."

"To the shippers."

"In the long run, to all Mars. Prices and insurance rates are headed for Andromeda, aren't they? Then too, our whole interplanetary policy is involved."

"But what has the government got in the way of trained, equipped peace officers? They hire that out themselves." Dobshinsky took another long pull at his glass. "Oh, we have approached them. If the navy could clean out the Belt—But no luck. You'll read the details in the confidential summary, if you take the job."

"Thanks for service," Church said. The other man looked puzzled. Church grinned. "I mean for putting the matter so tactfully. You might have said, 'If I get the job.' But let's dig as close to bedrock as we can in an informal talk. You've lost another vessel?"

"The *Queen of Thyle*," said Dobshinsky through tight lips. "If that means anything to you."

"'Fraid not." Church, whose profession brought him to every facet of the world, was less narrowly concentrated on minding his own affairs than the average Martian. But hitherto interplanetary shipping had lain outside his purview. The big-money boys took care of their own.

Until lately.

"Our most recent loss, and one of the most serious," Dobshinsky said. "Besides her own value, which runs into seven figures, there was her cargo. Among other things, a begabuck's worth of computer units for Pallas. And this is less than twenty decadays since the *Jove* was captured."

Church raised his brows a trifle. "Excuse me," he said, "but are you sure that no acts of God are involved? That is the official claim."

"Morally sure. For instance, the *Jove* was carrying robot mining machinery to Ganymede. The Neopinks report, from their branch on Earth, that Supertronics has offered a load of this same stuff at cutthroat prices. They say it's because they've found cheaper production methods; and of course serial numbers and so forth are different; but still, when this sort of thing happens again and again and again—"

"Yes. I see." Church nodded. "I wonder," he mused, half to himself, "why the so-called acts of God are always catastrophes." Briskly: "I gather the *Jove* herself hasn't turned up?"

"Not yet, anyhow. Maybe she was utterly ruined; or maybe the asterites want to repair her and keep her for their own use; or maybe she's on her way to Luna at this moment, with a crew claiming salvage." The last word was spat out.

"Hm, yeah, this is getting out of phase."

"What do you mean, Misser? It is out of phase! I can show you figures to prove the whole Martian economy is in danger of being wrecked. And Earth sits back, rakes in the loot, and waits to come feast off what's left of us!"

III

Felix Kerrigan, Chief of the Keep, looked at the man before his throne and said: "No."

Nicholas Riskin stiffened. "Now wait a minute—" he began.

"You heard me." Kerrigan's huge right hand made a chopping gesture. "The Rule is the Rule, and I don't

compute to break her. Or break faith with my men, come to that." He gestured at Sadler, who stood tall and gaunt on one side, glaring at Riskin. "Dave here found the *Queen o' Thyle*. His commission is ten percent of everything she fetches. What kind o' Chief 'ud I be if I diddled him out o' he's earned?"

"But nobody's proposing to rob him," Riskin protested. He had been educated on Mars, and his enunciation sounded prissy, even to him, amidst the rough asterite dialect. "The Council will pay full value."

"In Free Worlds dollars," Sadler scoffed. "I want Earth dollars that I can spend on Earth goods. What do they make here in the Belt worth tossin' into the sun?"

Riskin moistened his lips and glanced around. He felt very much alone.

The council chamber was larger and more luxurious than most of the rooms hollowed out of this planetoid. In fact, it was crowded with barbaric opulence. Scarlet tapestries covered the walls, genuine mutiger skins snarled from the floor, the table and chairs were not plastic but massive oak. An archway opened onto the feasting hall, equally magnificent. Thence drifted the sounds of drink and laughter, as the crew of Riskin's ship mingled with the salvagers and their girls. But tautness dwelt here.

Kerrigan sat his nickel-iron high seat like a heathen god. He was, indeed, a throwback to days when Earth herself was young and wild — six feet four and broad to match, his features darkly bearded, his eyes ice-green. Garments added to the effect. Where Sadler wore a noisy coverall and Riskin plain civilian pajamas, Kerrigan had blue tunic and white trousers, flamboyant with gold. From his officer's cap flouresced the star of a Chief.

Riskin, who was small and bald, and whose work did not ordinarily demand physical courage, thought about bluster. "Look, you," he could say, "I represent the Council, which represents all of us. Do you think you can make an enemy of every other Chiefdom in the Belt?" But no. Kerrigan might lose his temper. More likely, and worse, he might guffaw. Barring occasional skirmishes, the lords of the asteroids didn't wage war on each other. Resources were lacking to do so; besides, it was safer and far more lucrative to prey on the Martians.

Then too, there was a question of principle, or perhaps better of politics. A lord must stand by his followers, if only because otherwise they would pitch him out the airlock and elect someone else. Let matters come to a vote, and Kerrigan's colleagues were apt to decide he had done right.

Wherefore matters must not come to a vote. Riskin relaxed and donned a smile. It was not insincere. He must try diplomacy, which was his real job anyway.

He made a slight bow to Sadler. "I beg your pardon, Misser," he said. "There was no intention of cheating you. The Council sent me here to make a proposal. You turned it down. Very well, you're

within your rights, so let's have no further hard words."

The spaceman shook hands. "Swab-o by me." His temper had subsided as swiftly as it had flared. "You un'erstand, I don't want to hurt the common cause or nothin'. But here, so many years, I been scrapin' along on base pay. Most I ever got was a share now and then, when I detected a wreck same time as somebody else—and always more than one other bobber, too. Now my big chance finally came, and I risked my guts to take it. I won't let go."

"Of course not." Riskin glanced at Kerrigan. "But this does raise certain issues of policy. Might we have a private discussion, sir?"

"Well—" The Chief scowled. He was probably anxious to get into the feasting hall. His current mistress presided over the merrymaking, and they said he was jealous about her. But hospitality was incumbent on him. "Okay, if it don't take too long."

He bounded from the room with muscular strides that Riskin had trouble matching, even in this feeble gravity. Doubtless he spent many more exercise hours per day than were necessary to keep the organism functional.

At the end of a corridor, he opened a door to his private office. Riskin had never been there before, and was startled to find bleak efficiency. Though of course, he reminded himself, a Chief could not be stupid. Nor could an ordinary spaceman. Simple though the asteroid boats were (with no planetary pulls or atmospheres to fight, no radiation screens needed this far from the sun), you didn't survive without a fair knowledge of physics and chemistry. That, however, was about as far as schooling went in the Free Worlds. The Councilman hoped Kerrigan's basically good brain could absorb a rapid lesson in history and economics.

A spaceship's viewport had been set in the outer wall, with a cliff overhang concealing it from above. Like other asterite strongholds, the Keep was camouflaged to look like any of a half million naked worldlets. The scene was breath-stopping. Dark metallic stone tumbled to a chopped-off verge. Beyond swarmed the stars.

For a shocking instant, fear went down Riskin's nerves. The Others, the Aliens, the Ones Out Yonder—Angrily, he checked his emotions. *Superstition!* he scolded himself. *The modern equivalent of angels, demons, and ghosts, with too many sensational stories and shows about them for too many generations, until their image has become bound in with our most primitive instincts . . . Oh, yes, certainly nonhuman races exist. We've even picked up traces of their radio, their nuclear engine emissions. But no more. They're too far away.*

He bent his attention back to Kerrigan. The Chief didn't take a chair, but motioned Riskin to one. "Speak your piece," he said curtly.

"I'm not sure where to begin," Riskin said. He took out cigars and offered one. Kerrigan shook his

head. Tobacco was so scarce that few asterites outside the colonies that Mars retained had formed the habit.

Riskin made a production of lighting his, "Believe me, sir," he said, "the Council Secretariat isn't being arbitrary. We can't be. We know we're just hirelings, who're paid to adjudicate disputes, and keep abreast of events throughout the Solar System, and make policy suggestions for the common cause. But we've given this salvage matter a great deal of serious thought. We'd like to see every capture turned over to a central authority which would then arrange sale and/or distribution of the spoils. Naturally, there would still be incentive payments for the men who do the work. But the present system—well, I'm not sure but what it may bring about the downfall of the Free Worlds."

"Huh?" Kerrigan exclaimed. After a moment: "Okay, Misser, I'm listenin'."

"The picture is rather large," said Riskin, encouraged. "Do you mind if I repeat a number of things you already know? You see, people take for granted the facts they grew up with, and so don't always grasp how those facts are related."

Kerrigan wrestled with his personal desires, and won. He folded arms and eased his stance. A dweller in space learns patience.

Riskin blew a smoke ring. "We've always told ourselves that we are simply repeating history," he began. "Mars was colonized by malcontents, who wanted freedom from the Incorporated State. They developed an individualistic civilization of their own. To finance the enormous job of making their planet habitable, they pulled the Great Swindle on Earth. I needn't go into its complexities. Let's just say, they arranged that enough influential factions in the United Protectorates benefitted too. So the *fait accompli* was accepted, albeit with a grudge that hasn't died yet."

"I know that much," Kerrigan growled. "I read a book once in a while."

"Of course. I am simply laying it out on the chart so we can compare our own case. Because that is *not* parallel. It only looks so.

"Consider. With lower gravity and closer proximity to the mineral wealth of the Belt, Mars became the principal shipper. That was partly a matter of necessity. Earth's resources are such that she doesn't need a big merchant fleet. Martian companies can usually underbid hers. So most cargo travels in Martian bottom, most Terrestrial spacecraft are Mars-built, and Mars was the state that colonized the asteroids.

"But life here was hard and harsh. It's still no cushion of fluffoam. Imagine what is was like in the first decades. Few were willing to come work if they were doing all right at home. In other words, we are descended from misfits who were descended from other misfits. People like that don't make the best organization men. They tended to strike out on their own, as soon as they could afford to. This required

too much capital for a single man, though. Hence little private companies sprang up, each headed by its founder. He necessarily held ship captain's authority over his followers; any other system would have been quick death. There's the origin of the Chiefdoms."

Riskin flicked ash off his cigar. "Don't you see?" he continued. "We brag about being noble democrats who're claiming our due from the tyrants of the mother planet, as their ancestors did from Earth. But the truth is that the Chiefs found themselves too often in conflict with the Bill of Liberties and other fine points of Martian law. They couldn't help that. It was either establish a new kind of civilization, adapted to local conditions, or else go back to working for a company on Pallas or Ceres or wherever.

"So . . . we broke free. Mars didn't like that. But suppression would have been too costly for their taste. Besides, Earth is delighted. She's brought pressure to bear, economic and political. There have been threats of military pressure, too, polite but nonetheless threats. Mars would lose a war. Hence she's cut off trade with the Free Worlds, hoping to starve us into submission. We've little to offer Earth, which hasn't merchant ships to spare for us anyway.

"Therefore we've taken to — let's be blunt — to pirating Martian vessels on the asteroid and Jovian routes. We find buyers on Earth; even some on the Martian asteroids, under the rose. With the money we get, we purchase from Earth what we need."

He stopped, out of breath, a little hoarse, and wishing for a drink.

Kerrigan frowned. "I don't see what you're gettin' at," he said, "except what everybody knows."

"Just this," replied Riskin. "Put my banalities together, and you'll see that we've got a revolutionary war on our hands. Nobody gives it that name, and perhaps not many recognize it as such, but the fact is there. If we don't organize to wage it properly, we're going to lose."

"How?"

"We can't continue forever as we are. Suppose Mars finds countermeasures that we can't evade. We have considered a number of possibilities in the Secretariat. If one of them works, we're back where we started, cut off to die on the vine.

"The worst possibility is that Mars will go ahead and recognize our independence. I'm sure that nothing but exasperation has kept her from doing so thus far. What happens then? The profits are in the bigger asteroids, that Mars has kept. We can't support ourselves by ordinary trade — not without a much bigger capital investment than we can make, or that Mars or Earth will make for us. We'll face the choice of giving up our way of life and becoming hired hands again . . . or continuing as raiders . . . or starving.

"We have to take steps against the day."

"Um-m-m." Kerrigan began to pace, an eerie ballet-like series of

leaps. The constellations glittered behind his head. "I admit I've sometimes wondered — but we don't get a lot of news out here."

Riskin rose and said eagerly: "Thus far, things have simply happened. One event led to another. The Chiefs found they could capture Martian ships; in desperation, they did so; this became an important part of their economy. Your hydroponics plants and protein vats and so forth supply you with food and Lo-Gee pills. You mine the rocks and refine the ores. You produce a certain amount of everything you need. But only a limited amount, because you can count on picking up a vessel worth megabucks every few years. That's why you maintain people like Sadler. Well, what happens if you never get another ship? Are you prepared to find other work for him?"

Kerrigan stopped, lowered his head and regarded Riskin from beneath tightened brows. "What does the Council suggest?"

"That we use the salvage business for the common cause, as long as we still have it. Under the present system, a capture belongs to the Chiefdom that pulled the stunt off. So, all right, the Chief uses most of his ninety percent for machines, replacement parts, and similar practical purposes. That strengthens the Free Worlds as a whole, and is therefore good. But he also buys luxuries; and the individual salvager is apt to spend his commission on nothing else. That is not good.

"Furthermore —" his cigar stabbed the air — "even in buying the necessities, there is no coordination. You acquire a new computer, say. Fine. But Chief Brill over in Dragon's Nest also gets a computer. Duplication. Why doesn't he get an isotope separator instead, and trade you alloys for information? You'd both be ahead."

Kerrigan tugged his beard. "Yeah. I see your point. Got to think it over, but maybe you're right. Well, s'pose you are. How do I convince Dave Sadler?"

"I admit we hadn't quite realized the extent of that problem, off in Centralia," Riskin sighed. It shouldn't be insoluble, though. If the Council Secretariat can have the marketing of captures, and can decide on the basis of common cause what goods should go to the Chiefdoms that turn them in — and even supply those places which haven't made a capture for some time — well, we could still pay the regular finders' commissions. They ought to be in local dollars, rather than Earth's or Mars'. The Free Worlds need foreign exchange in the worst way. However . . . hm . . . we could establish a luxury industry and pleasure resort of our own, for the boys to squander their earnings."

Kerrigan was silent a while, brooding at the viewport. "Maybe," he said at length. "You Councilmen have done a good job so far. We'd never have managed without your direction, your agents on Mars, your wheedlin' us into doin' what's sensible. I'm not dead against you, myself. Some o' the other Chiefs might be."

"If you set an example, with the *Queen of Thyle* —" Riskin stopped. Kerrigan had swung ominously about. Riskin continued in haste, but smoothly: "Of course, there would be compensations. We don't expect you to be unselfish for nothing. That can be worked out."

"Maybe so." The green eyes narrowed. "Yeah. Just maybe so."

"I can stay here as long as need be, to discuss these questions," Riskin said.

"Good enough." Calculation faded from the baron. He laughed aloud and slapped the smaller man on the back. Riskin rocketed halfway across the chamber. "Opps, sorry. C'mon. We'll talk again after sleep. Right now, we got a feast ready for us."

IV

While he waited in Dobshinsky's sumptuous anteroom, Church made a mental sorting of the secret reports he had studied. The human receptionist was an obstacle to concentration, being quite sumptuous herself. But Church found he could settle for an occasional eye-wandering in that direction. He was a staid man, who did not personally use the drugs and girls that custom said he should offer his clients; though that same temperament made him a wolf at the poker table.

The history of asterite buccaneering showed a disturbing pattern, he thought. At first the matter had been pretty open. Ships vanished, loot appeared in the market. With businessmen as fanatic about privacy as any other Martians, investigators couldn't trace back through commercial channels. But they followed the orbits of the lost vessels, a heartbreakingly long and costly search across so many megamiles. Eventually they recovered certain drifting fragments. These confirmed what undercover agents had learned by other means. Here and there, some asterites had taken their flimsy little boats and lain in wait. Schedules being then a matter of public knowledge, a drone ship's orbit was easily computable. When their prey hove close, they matched velocities, cut their way in with laser torches, disconnected the autopilot and made off with their prize.

The Martian navy was engaged to go in search of the culprits; this was back before the so-called Independence. A few were summoned to court. The judgments against them may have been the last straw before the Declaration of Hidalgo. The rest could not be found. There was no record of which asteroids they had chosen to live on, among hundreds of thousands.

As part of the starving-out policy, the Association put its orbital drones onto the Earth and Venus runs. From the latter routes, they transferred those more expensive vessels that were capable of traveling the whole way under acceleration. A pirate had no hope of intercepting a quarry which, by the time his radar spotted it, was making scores of miles per second with respect to him.

But ships continued to disappear. More undercover work was done: especially on Earth, which had re-

cognized the asterite nation with haste and glee. So — through spies of their own, the Chiefs had learned what homing signals to use. An autopilot must needs respond to such a beam, follow the looter wherever he wished. Signals were changed. Only a handful of ultimately trusted men now had the needful information.

After a short interval, losses resumed, and this time at a catastrophic rate. A spationaval engineer deduced the cause. Asterite agents in the Martian companies must have substituted course tapes in the 'pilots', which then took the ships elsewhere than intended. At least, the theory seemed worth trying. All personnel in all such sections were replaced. Losses stopped.

For a while.

Then in quick succession the *Jehu*, *Ahab*, and *Li'l David* failed to deliver their cargoes. The Neopinks got men in among loading personnel and discovered that time bombs were being planted in the engine rooms. It was a crude method, suggesting desperation. The guilty people were fired and security precautions were tightened. Again Mars had a respite.

But now —

The inner door opened. A fleshy man stalked out. He managed somehow to look indignant and smug at once. Church recognized but didn't greet him: an attache of the United Protectorates Embassy.

"Please come in, sir," cooed the receptionist.

Church refrained from the bawdy answer that a younger Martian would probably have made. He was not only middle-aged, he was worried. He strode through to the paneled luxury of Dobshinsky's office. As President of Transjovian Portage, and secretary of the Association, the man rated an acre or two of mahagony desk and a fiftieth-floor view from the Gratte-Ciel Tower. Church ignored the spectacle of the Grand Aqueduct's triumphal march across painted desert, and shook hands absently.

"Be seated," Dobshinsky said. "Apologies, that you had to wait. That damned Earthling just wouldn't go away."

"What'd he want?" Church began stuffing his pipe. "I imagine something relevant to our problem."

"Yes. A 'friendly note of caution.'" Dobshinsky bit off the words as if they were personal enemies. "We're not to arm our ships."

"Eh? How can Earth stop you? I mean, they've been able to invoke the Open Space Treaty against us, twisting it around to mean that we can't send the navy against the Free Worlds. But how can that apply to commercial vessels?"

"He said his government would construe the installing of heavy weapons as piracy, and take a, quote, very grave view, unquote. I asked him how Earth construes the piracy that has in fact been going on, and he had the degaulle to say it's stopped!"

"Hm-m-m . . . yes, I meant to discuss that angle with you. But short of a declaration of war — and you know public opinion on Earth would have to reach sheer panic before military measures can be con-

sidered — short of that, what can they do to keep Association ships unarmed?"

"If nothing else, they can embargo our trade. They do need some goods and services we've been supplying, but they can manage for themselves, and no doubt the asterites would be glad to help out. On the other hand, Mars absolutely has to have trade with Earth. We've come a long ways since pioneer times, but we're not yet to the point where we can maintain a complex technology without imports of certain items. Oh, they've got us by the globes, they do." Dobshinsky's hand shook as he reached for a reef to calm himself. "God, but I hate Earthlings!"

"Well, now, that may be going a touch too far," Church said mildly. "I've known some decent ones."

"Name 'em. Greasy mass-men! They even think in slogans."

"M-m-m, well, the Incorporated State has naturally produced a, uh, gullible type of citizen. His life's so thoroughly regulated that his main freedom lies in fantasies, which the sensies and the advertisers are quick to supply. Maybe for the average Earthling, those hackneyed old show motifs are more real and meaningful than his own life. Anyway, sheep always did stampede easy. That's how come our grandfathers were able to put the Great Swindle over." Church got his pipe under weigh. "No matter. Our problem is with the Free Worlds."

"Do me the service not to call them that!"

"Why not? What they call themselves. And really, to be quite honest, I'm not unsympathetic with them."

Dobshinsky, feeling better after a puff or two, merely asked, "Indeed? How?"

Church smiled. "Could be my chromosomes. Matheny was a great-uncle of mine, and one of my direct ancestors was in on the Boston Tea Party. Seriously, though, I like to read sociohistorical treatises, and I see the asterites and us as being equally victims of a common enough process."

"Which is?"

"The growth of nomadism. On Earth, the ancient nomads were not the progenitors of civilization. They were offshoots of it, weak tribes who'd been forced into lands that nobody else wanted. There they invented special survival techniques. But they were always a fringe people of civilization, dependent on it for a good many necessities." Church shrugged. "To be sure, their Spartan way of life called forth the more grim-jawed virtues. They became warriors *par excellence*, who raided the settled countries and occasionally conquered them. But from a long-range point of view, they couldn't help themselves. Circumstances determined their culture. Same thing with the asterites."

Dobshinsky had been pondering more immediate subjects. "You know," he said, "even if we can't put gun turrets on our ships, I don't see anything to prevent our having some armed men aboard each one."

"To be ripped apart when the meteoroids hit?"

"They'd have heavy shelter. And they'd reap the boarding parties."

"Once or twice. Then the asterites would board with guns of their own. No dice there." Church frowned. "Besides, I hate killing."

"Killing may be necessary. If only Earth weren't — Why can't we put on counter-pressure? Refuse delivery of ships under construction for Terrestrial lines . . . that'd hurt the corporations, who'd squeal to their government."

"They sure would," Church agreed. "I must admit, even in his greedy moments, even when he's a high-priced executive, the Earthling is a short-sighted beast. But in this particular case, no, Mars wouldn't get the outplanet exchange that delivery of those ships can earn for us. We'd suffer worst."

His pipestem wagged didactically. "I've drawn a different conclusion from your files than your previous agency did," he said. "Your interview today with the Embassy bobber confirms me. Matters are rather more serious for us than anyone thinks."

Dobshinsky fell still and alert.

"It does superficially look as if this latest method of piracy is a last-ditch measure," Church said. "The economics is so marginal, we suppose. They have to maintain patrols over enormous volumes of space. When their radar detects a ship, they have to scatter cosmic gravel in quantities which must be fantastic for those wretched little boats they own. They have to hope that relative rock velocity will knock out the engine, so they can match speeds. This doesn't always happen by a long shot. Usually a ship proceeds at acceleration, and simply arrives with holes drilled through her. Or if she is disabled, she and her cargo may well be so damaged that the loot doesn't pay for the operation."

Dobshinsky nodded. "One reason we've given you the contract is that the previous agency predicted, on those grounds, that piracy would soon sputter out. It hasn't."

"Right. There's at least one extremely subtle mind in back of this, and he's pulled off a masterstroke." Church's pipe had gone dead. He rekindled the tobacco.

"You see," he went on, "hitherto it was well-established that piracy was involved. Oh, the traces were often concealed, by the time the loot reached the market. But enough evidence remained to convict the rest. So anyone on Earth who bought the stuff was receiving stolen goods. You can say what you like about Earthlings, but while they number crooks among them, the average citizen has a far stiffer moral code than you or I or our neighbor down the street. The Earthling gets downright stuffy about some things we take for granted. One reason our ancestors left, of course. But anyhow, this fencing of stolen Martian property could not have gone on much longer. There'd have been too great a public outcry, as the facts inevitably came to light.

"Today, however — why the aster-

ites claim they're only salvaging vessels wrecked in natural disasters. That's acceptable."

"Yeah!" Dobshinsky jeered. "Overnight, meteorites become more frequent by several orders of magnitude. We analyzed a few, wedged in structural members of ships that did get by, and found traces of human-type organic material. They'd been handled, those rocks! How stupid is even an Earthling required to be?"

"Not too much, really," Church said. "Don't forget, he's a scientific ignoramus. A couple of respected astronomers say the recent trouble must be due to the debris of an extra-large comet family, re-entering the Solar System after a million years or so. A chemist adds that organics do occur naturally in cosmic objects, like the carbonaceous chondrites, and your findings merely bear out the old suggestion that complex molecules got formed in the original pre-planetary nebula.

"Yes, yes, the common citizen may still harbor a few suspicions. But he's conditioned to believe Authority. He's in no position himself to disprove any of those sonorous pronouncements. Very possibly, he's heard on his favorite religious program that God is punishing the licentious Martians. And, to be sure, some of the payoff from looting us trickles down to him. All in all, there's nothing any more to disturb the smooth functioning of his hypocrisy organ.

"That's one reason I believe a powerful mind is behind this wrecking system."

"Can it go on, though?" Dobshinsky wondered. "You said the method was clumsy and expensive."

"It is, too much so for an individual Chief. For every one who makes a rich haul, a dozen may go broke. But if they spread the expense out among themselves in some fashion . . . and if, very much on the QT, Earth's government adds a subsidy, perhaps only in the form of extra-high prices for their 'salvaged goods' . . . you read the hand?"

"Luck, yes," Dobshinsky breathed. He took a long drag on his cigarette.

"I suppose you could try something like, say, going out of the ecliptic plane on your routes," Church suggested.

"For a while, perhaps," Dobshinsky said. "In the long run, no. Too expensive. Between having to send our craft under power through the Belt, and having to use Hohmann orbits for the more profitable Earth trade, and losing several vessels a year — we're too close to the red as is."

Church sighed. He had expected that, simply because so obvious a dodge was not already being used by the shippers.

His gaze drifted outward. Orchards stood brave and green on the desert verge. A dust storm marched along the horizon like some great beast, tawny under the sky. *Yes,* he thought, *the badlands are beautiful too. We've built something infinitely precious here on Mars. A man is not only free under the law; when he wants, he can go to the*

ultimate freedom, the simple being alone in wilderness.

My grandfathers gave me this. I must not let it be taken from my grandchildren, before they are even born.

He shook himself, stared straight at Dobshinsky, and said: "The problem before us, I think, is to come to grips with whoever's behind the Chiefs. Or come to terms with him. I have the vague beginnings of a possible answer to the whole mess. But first we've got to find this man."

"In *x* billion cubic miles of space?" The other's smile went no deeper than his lips.

"We have a start. Those double agents on Mars."

"Who are they?" Dobshinsky slumped in his seat. "Sure, plain to see, at least one of the people who could've programmed those 'pilots must be guilty. But there were a good three dozen."

"What did you do, beside fire the lot?"

"What else could we do? This isn't Earth, you know! Oh, our agency did tail them for a while. But nothing suspicious was noted. We finally decided the man was going to lie low indefinitely, and gave up. Having blacklisted him, we'd drawn his teeth, so why should he bother with anything else?"

"I am not sure his teeth aren't still in place," Church said. "In fact, on the basis that the current method of piracy is paying, I suspect he's been making a lunch off us right along. I'm going to try and find him."

V

Once upon a time, before man set foot on Mars, the twin moons were the occasion of much romancing. Perhaps a wistful vestige of this was responsible for later attempts to get some good out of them. True, from the ground they were hardly visible to the naked eye, and proposals to beef up their albedo by plating them with aluminum never got past the facts of engineering. But no few prospectors lost their shirts — in some cases, their pants as well — before the knowledge sank in that neither Phobos nor Deimos is anything but a ten-mile chunk of valueless rock. For a while after independence, the Martian navy thought about establishing a base on one of them. Then the Constitution was amended to weaken government still further, defense passed into the hands of chartered companies, and unsentimental cost accountants showed that you got more detection range and more safety for your investment by just leaving ships in orbit.

An entertainment syndicate built a swank lodge and fun house on Phobos. The view of Mars, gigantic in the spatial sky, was impressive. But any planetside honky-tonk could fake the same effect with a video wall. Quite a few did, and you need buy no ferry tickets to reach them. The syndicate went broke.

Accordingly, there were cheers when several universities and research institutes clubbed together to establish an observatory on the far side of Deimos. The bulk of the

outer moon screened interference from the busy Martian radio channels, solar wind was not often strong enough at this distance to bother X-ray and cosmic-ray instruments, the maddeningly cryptic indications of the Ones Out Yonder could be received for half the thirty-hour period, and of course the visible-spectrum seeing was magnificent. For a while the place was a major tourist attraction, which helped pay expenses.

Over the years, that dropped off. A rancher, a waterman, an entrepreneur, a conman, a housewife had other things to think about than the latest news of what the quasars were up to. You couldn't even make book on that. Observatory finances grew a little strained. The board was glad to accept help from some wealthy foundations on Earth. Terrestrial scientists in turn were glad to get temporary appointments to the Deimos staff. The recent diplomatic stress did not affect cordiality. Scientists were above politics.

For that matter, Church reflected, the average Martian was too. There had never been any imperialism in the Belt: simply private companies going there to make a dollar. If those companies were in trouble, that was their hard luck. *Maybe I shouldn't be so smug about Earthling short-sightedness,* he thought. *We're not much better. We do worry over ecology and conservation at home, because we must. But so few of us look beyond. The long-range good of the whole human race demands that it get established in the asteroids* now, *while the job is still fairly cheap to do, before mineral resources on the planets get so low that we'll have no choice, at a time when the cost will be appalling, socially as well as economically. Only can you persuade anyone of that? Uh-uh!*

He forced away missionary ardor. The problem on hand was to live through the next few weeks.

The ferry eased into her cradle. Engine roar died off into a ringing silence. Church unharnessed himself and rose. Deimos gravity was so weak that he bounded to the overhead and smacked his pate. Forward in the long, empty cabin — he was the sole passenger in what was otherwise a load of supplies — the co-pilot turned about to grin at him. "I warned you, Dr. Quist," he said. "Better let me give you a hand."

Church fell into his role. Under the life mask, his vocalizer made his voice high and old; but the waspishness was his own doing, and he felt rather proud of it. "I have been here before, young fellow!"

Years had passed since last he wore a disguise. He was still conscious of the artificial flesh clinging to head and hands, slithering as microminiaturized transducers converted the subtle movement of muscles into equivalences which were not identities. But long-learned skills were rapidly reasserting themselves. Bald and stooped, he shuffled down the aisle with convincing unsteadiness.

"Not for some while, you haven't," the co-pilot said. "And you groundhuggers — no disrespect, Pop, but

you got to grow up in this kind o' gee-field to handle yourself really well. Take my arm."

"You are an asterite yourself, eh?" Church asked.

"Yes, from Juno. Can't wait to go back, either, but what with the troubles, this is the only work I can get at the moment." The lanky young man floated to join him.

Church wasn't surprised. Those asterites not in rebellion were Martian citizens, as free to move around in Martian territory as anyone else. A good principle, too, even if it had simplified the planting of spies and saboteurs. He uttered a few grumbles but accepted the help.

On his way out, he had a glimpse of the surface: spacefield, a few domes, and some instruments thrusting over the near horizon, black and skeletal against the stars. Then he was in the lock tube, drifting dreamlike from rung to rung until he emerged in the terminal.

A dark-haired, sharp-featured man, also with the asterite-look about him, waited. "Dr. Quist," he said, extending his hand with a slightly forced smile. "Welcome."

"Thank you for service," Church said. "You are, ah, Henry Lawrence of the radio division?"

"The same. I computed I'd better show you to your quarters and get you settled. Things must have changed quite a bit since you were here last, what with the new installations. This all your baggage?" He took the foot locker from the co-pilot. Church admired how deftly he handled the considerable mass. Weight might be small, but inertia hadn't lost an ounce.

They started down a ramp, into the bowels of the satellite. Lawrence looked harried. "We're glad to have so distinguished a guest," he said. "But pardon us if we aren't as hospitable as we should be. Our programs keep us quite busy — my own section the most. Frankly, I don't see what you could learn by coming in person that couldn't just as well be faxed to you at the University."

"Thought I told you on the maser," Church snapped. In the process of getting Quist's cooperation, he had studied the astronomer with care. That old devil didn't consciously trade on his reputation; he took for granted that he was the dean of his field. "Have to see the equipment in action, before I can lay out a feasible program for you to consider. The write-up in the *Journal* was intolerably vague, sir, intolerably. How'd it ever get by the referee?"

Lawrence presented a sour grin. "Well," he said, "you don't look too closely at gift wrappings. If a foundation on Earth buys you a big new microwave 'scope, and one of the foundation's men wants to add to his list of publications by doing the report — you see?"

Church muttered something. They went on at a rapid pace. The corridors were austere, empty during this work period. A whirr of fans, an odor of probably bad cooking, a faint vibration of life support machinery, were the only signs of man. Cold fluoro light glistened off sweat

filmed on Lawrence's forehead. He kept glancing sideways at his companion.

He suspects, Church realized with a jolt.

And then: *Maybe that's best. Time is short. I meant to poke around until I had real proof. But if I take a chance and force the issue —*

"How long have you been here yourself?" he asked.

"A year," Lawrence said. He checked himself. "Half a Mars year, that is."

"So you have spent more time with the Terrestrial calendar than ours, eh? And yet you're an asterite born. Hm. All of a sudden, a new 'scope, and a new staff member to take charge of it. Were you part of the gift wrapping?"

Lawrence stopped. Church had some trouble braking. "Do you complain of my program, sir?" Lawrence demanded rigidly.

"No, no, no, confound it!" Church stamped his foot, which caused him to bound a trifle. "Merely wondering. Mean to say, with men like Arnolfo and Mihailov —"

"If you have forgotten who I am," Lawrence said, chill, "consult *Who's Who in Science.* My previous position was on Luna, at Ley Institute. After a sabbatical leave, I came here as part of the regular exchange program. This way, if you will do me the service." He started off again.

Fits together, right enough, Church thought. *A clumsy deception by my standards. But Martians aren't hard to hoodwink in those respects. They're so afraid of the state becoming powerful that they don't allow it a really professional counter-intelligence corps.*

I could be wrong, though. Let's see how he reacts.

"No offense intended, sir," he said in Quist's tone, which indicated that he didn't really give a damn whether any was taken or not. "One gets overly suspicious in these times, with the rebellion and the piracy. I had stock in Transjovian, which tumbled after the *Io* was pirated."

Lawrence's face went blank. "What makes you think she was? She never reported in, nothing more."

"Come, now. Come, now. She was right in the middle of that lot whose program tapes were altered. But shall we discuss more pleasant matters? Where did you go on your sabbatical?"

Lawrence clipped his mouth shut. They reached a door in the residential section, which he opened onto a bleak little room. "Your quarters, sir," he said.

Church's hopes sagged. But when they were both inside, Lawrence closed the door. He stood with his back to it, fists clenched, and asked, "What do you want, anyway?"

The breath gushed from Church. He sat down and fumbled in his old-fashioned tunic for a pipe. "A confidential talk," he answered. "Won't you have a seat, Misser Vaughan? I believe that was your name while you were programming autopilots."

The younger man poised an instant yet, before he lowered himself

to the bunk. "Who are you?" he said low.

"My card."

Lawrence/Vaughan read and whistled. "Are you Church in person?"

"Yes."

"But—"

"Why not send one of my operatives? A huskier, less dissipated bobber, to trace every clue and, in the end, take your gun away from you?" Church laughed. Above the hound zeal that throbbed in him, he felt an immense and joyous relaxation. "Why, son, I never imagined you'd be stupid enough to pack one."

Lawrence clutched his own knees. "What do you propose to do?"

"I told you. Talk. Simply talk. Not much else I can do, is there? You're guilty of crimes against private property — nothing else, the narrow way our law defines treason. The courts could force you to make what restitution is in your power. But my clients are a lot more interested in preventing further loss than they are in garnisheeing what pittance you may earn for the rest of your life."

Lawrence looked bewildered. "How did you find me?"

Church extracted a tobacco pouch and got to work. "We had some information on everybody who'd been in a position to fake those tapes," he said. "Not much. Most had changed names and gone into other lines. Common enough practice, if you're under a cloud and live in a labor shortage economy. Some disappeared beyond trace — again, nothing suspicious; well within legal rights. But I computed the rebellion involves better brains than the popular image of a feudal Chief allows for.

"Having gotten a good agent to Mars — you were smuggled in under cover of that 'sabbatical,' correct? — they wouldn't write you off when your first mission ended. Rather, they'd realize that the program-alteration technique would be discovered by us, and prepare a new job for you to step into when that happened. What job could that be? Well, I thought, now that spaceship schedules through the Belt are kept secret, it'd be mighty helpful for your side to know when a vessel is leaving Mars, and in what direction. Flash that information to rebel HQ, and they can notify whatever Chief is in a position to take advantage, and that way cut down the total cost of piracy to where it shows a profit. So-o, what better cover for a radar and a maser, than a new 'scope which Earth obligingly bought for Deimos? When I found that a bright young bobber of asterite origin — but with years of residence on Luna behind him, and with a marked resemblance to the vanished Misser Vaughan — had been put in charge, well, the clue seemed worth following up."

"I am a radio astronomer," Lawrence said defensively.

"Sure, you'd have to be, since that's where most of your time must go. Only once in a while do you spot a ship. Even if you could do so oftener, you wouldn't, for fear of tipping your hand." Church lit his pipe and blew a thick cloud.

"No hard feelings. You're a patriot and so forth. Mainly I was after you so as to get a wire into your high command, or whatever you call it."

"What?"

"Look," Church said, "the Martian government is too diffuse, and must operate too openly, for undercover negotiations. Besides, Earth has tied its hands. Our private companies have no official standing. Nevertheless, they have some proposals to make. You Free Worlders rely on the sheer size of space, the number of uncatalogued asteroids, for an important part of your defense. We can't dicker with your GHQ till we know where it is. Thus far we don't."

"I don't either," Lawrence said. "If I should be captured—"

"Relax. You aren't. We're simply talking. You must be able to find *some* places. A stronghold, say. Once I got there and met the Chief, he could ship me to GHQ or have a spokesman come to me. As I said, the whole thing has to be carried out unofficially and hush-hush, which is another reason for this roundabout way of contacting your people. You come along and navigate me. That's all I want from you."

"What do you intend to propose?" Lawrence asked.

"Sorry. Can't tell you that."

Lawrence bristled. "Then why should I cooperate?"

"Because if not," Church said in his mildest voice, "things might get a wee bit rough for you. On the other hand, if you do help out, well, I have quite a large expense account—"

VI

The Martian shipyards made delivery to Earth and the liner *Atlantis*—freight plus luxury passenger accommodations—embarked on her maiden voyage. She did not make the once popular cruise to the Jovian moons. Though no Terrestrial craft had been lost in the recent difficulties, that could well be due to there being comparatively few of them; so let the Martians, driven by necessity, hazard the Belt run alone until it was certain that the spate of rockstorms was indeed over. Meanwhile the *Atlantis* would operate on the Triangle: Luna, Venus, Mars, and home again.

No difficulties were anticipated. Even if the allegations about piracy were true, the United Protectorates stood on excellent terms with the Free Worlds. Besides, underpowered asterite boats could never match velocities with this sleek giant. And however bitterly some of them complained, the Martians dared not so much as break off diplomatic relations.

At most, their casinos and pleasure houses would fleece the tourists during the layover. But that was expected. These were wealthy people, prepared to pay for a good time in a place where Earth's moralistic writ did not run.

The *Atlantis* was two days out, purring along a complex but readily calculable path toward Venus, when her electronics officer detected an

object on the radar. He frowned, took distances and vectors, and fed them to a computer. After reading the printout, he made use of other instruments. Then he buzzed the captain.

"Trouble?" asked the voice from the intercom.

"N-no, sir. Not exactly." The officer stared past his desk, out the turret viewports to a sky resplendent with stars. One plate was polarized, making the sun a dull purple disc wreathed with fairy streamers. "Another ship seems to want rendezvous. Paths intersect with matched velocities in about half an hour. But I can't raise her on the beam and . . . well, she's evidently not under power, because there's no jet radiation."

"Meteorite?" wondered the captain. "An interstellar object might have a peculiar orbit."

"Be a strange coincidence if it came in precisely right to meet us, sir. Besides, the heavy weather in the belt seems to be ended. The Martians haven't reported any losses for months. I'd guess this is one of their ships, possibly in trouble. Say their jet mass is low for some reason. They could detect us at a great distance — or even know beforehand just where we'd be, what with all the publicity we've had — and use their last reserves to get into a rendezvous track."

"That doesn't make much sense," argued the captain. "But — very well, we'll hold course. If it is a rock, we'll know in ample time to dodge. I'll be on deck immediately." As an afterthought: "Let's alert the passengers. They'd never forgive us if they missed the fun."

As the moment approached, the main lounge grew crowded, and the drink dispensers clicked busily. A young lady hunting for a husband edged close to a distinguished-looking corporation executive who had not mentioned his wife at home. "How thrilling," she declaimed. "Does this happen often in space?"

"Never, that I know of," he answered. "According to the announcements, they aren't communicating. So I guess their radio got knocked out by the same thing that drained their tanks. Only if they had mass enough left to intercept us, they should have been able to limp to Venus or — There she is! Holy Success!"

He did not omit to lay an arm around his companion's waist, nor she to lean against him. But their awareness sprang through the viewport, out among cold constellations. Everyone's did; the babble was choked off. A steward cried, once, "That wasn't built by —" and dared say no more.

The strange vessel swelled in sight with terrifying speed. She was smaller than the *Atlantis,* barracuda lean. No jets showed, only a ring of enigmatic cones around the waist. She must have a radiation screen; but why did it glow with a flickering violet luminance?

"Now hear this!" bawled from the annunciator. "Captain Daniel to all passengers. Take acceleration seats. Take acceleration seats at once. We're going into free fall for con-

tact, and we may have to apply thrust without warning. All crew personnel to emergency stations."

The executive and the lady got separated in the scramble to find places and harness in.

On the bridge, the first officer bit his lip. "Should we try to out-accelerate them, sir?"

"I doubt if we can," said the captain harshly. "When they don't need jets. No, we'll match exact velocities and send a gig over. My God! The first ship from Outside!"

And meeting *his* command. With visions of sensie interviews dancing through his head, he issued orders. Engines brawled forces tugged briefly at human muscles; then there were silence and weightlessness. The two craft ran parallel, some five hundred meters apart.

Until — "Look, she's coming toward us!" the first officer screamed.

Incredibly, with no tiniest spurt of ions, the stranger glided near *Electrical attraction?* whirled in the captain's mind. *No, with that much voltage, we'd be seeing discharge effects. Magnetism? No, whatever that hull is made of, ours is nonferrous.*

Gravity control. Faster-than-light travel. I've experienced this moment a thousand times, on a thousand shows — but now it's real.

He heard himself say, in a cracked tone: "We're scarcely the first other race they've met. They must know what they're doing."

A shock and shudder, a metal belling, announced that the ships had come together. From an after viewport, the third officer said that main airlocks had touched precisely and clung together, like a kiss.

The aliens came aboard.

They were man size in their grotesque spacesuits, but the heads that grinned within the helmets were monstrous, and the hands each terminated in four fingers of witchlike length.

They paid scant attention to crewmen's efforts at sign language, merely gestured with ugly guns and rounded everyone efficiently up. Dreadful hours followed while they ransacked the vessel, stem to stern, leaving ruin behind.

Finally some of them came to the lounge where the humans were packed together. They chose two specimens, seemingly at random except that one was a male engineer and one a stewardess, and marched them off. Captain Daniels' horror and pity were tempered by relief that both poor devils happened to be Martian citizens.

Another jolt of reaction told that the visitors had let go. The officers of the *Atlantis* fought through the mob around them: no easy task, when it was being hysterical in three dimensions. Starboard viewports showed the other craft, receding with contemptuous slowness.

Assessment of damage took so much time that the liner was again alone, as far as the naked eye could tell, when the officers conferred.

"They didn't actually steal much," the C. E. reported from his department. "Mostly they took things apart, to learn our technology, I suppose. The fusion reactor hasn't

been touched. My gang may be able to repair the jets."

"They made a thorough wreck of my stuff," said the electronics officer. "Not an instrument is functional. Probably didn't want us to call for help." He smiled with a certain bleak pleasure. "But they can't be too familiar with crystal masers, because I can fix that in a couple of hours and beam Venus for help."

Captain Daniels shuddered with the slacking off of tension. "Looks like we escaped easy," he said, "except for that man and woman they took to — to dissect? But what's ahead for the human race?"

He stared out at the stars, the countless lairs of Them. The nightmare of a lifetime's sensie plays ran along every nerve in him, and he couldn't switch off the show.

VII

Felix Kerrigan, Chief of the Keep, struggled out of his life mask. "Whew!" he gusted "I was smotherin' in that thing." He looked around the crowded cabin. Among the lean faces of his men, a few stood out that did not belong. There were the engineer and stewardess from the *Atlantis;* there was Nicholas Riskin of the Council Secretariat; and there was James Church. "Let's get goin'."

"Not yet," Riskin reminded him. "We have to wait till we've drifted so far that none of them will see we really do have jets, under our false hull. Oh, and don't forget to leave that pretty field fluorescence on."

"Hoo, what jets we got!" Dave Sadler said admiringly. He had never ridden in a Martian-built cruiseboat before.

He racked his spacesuit. In spite of appearance, it was a beautiful piece of work. Good engineers had helped design it, as well as one of the best costumers on Mars. Too bad it must be destroyed. "Damnation," he complained, "you should'a let us loot. That hulk was loaded!"

"And what would happen to the illusion of interstellar invaders, when your plunder hit the market?" Church drawled.

Riskin frowned. "To be honest," he said, "I don't see where that makes any difference. I told you before, we went along with you in this because you made it a condition of supplying the Free Worlds, as well as our suspending salvage operations. But now what? Surely you don't think this fantastic ploy will really come off!"

"But I do," Church said. "So do some damn competent psychosociologists we consulted. Remember, this isn't going to be the only evidence. Traces of nonhuman camps have been planted here and there; Martians will report similar raids on their ships; and after an Earth vessel had such an experience, well, not many Earthlings will figure us for liars."

"Even so—plain common sense—"

"That's not too ordinary a commodity on Earth. You know what a gullible lot they are there, how liable to panic. And then there's that ingrained awe and fear of the Others, 'way down on the unconscious

level where reason doesn't operate." A thought struck Church. He swore at himself for not having checked the matter personally; but with so much else to do, it had slipped his mind. "You did remove those superconductor rings built into her hull, didn't you?"

"Yeah, sure," Kerrigan grunted. "Made it look like we'd stripped the bulkheads down at that point to study the wiring, just like you briefed us to do."

"Good. Any proof that our 'gravity drive' was plain old high-powered magnetic attraction would hash the whole project."

"What *are* they going to think?" Riskin worried.

"They'll think a hundred different things," Church shrugged. "Certain Martians and asterites, especially, will consider this may have been a hoax. But they're scarcely going to see the motive, and anyhow, who dares take the chance it's not for real? Surely not Earth. There's going to be one sky-raising public clamor on Earth, for defense. Which, of course, will please the corporations that stand to make big money off defense contracts."

Riskin regarded him narrowly. "I'm still not entirely sure what your motive is," he said.

"Why, to get you asterites off our necks," Church laughed. "We've been paying you Danegeld these past months to leave us alone, but we can't subsidize you forever."

He went into more detail when he reported to Dobshinsky. That was in his own office, which he knew for certain wasn't bugged.

He leaned back till his swivel chair creaked, cocked feet on desk, and chuckled around his pipe. "According to the latest news," he said, "the operation has gone over like a rocket. Rumor is that the Terrestrial Embassy is now pressuring you to arm your ships."

"True," Dobshinsky said. "Ridiculous."

"No, no. You must, to stay in character and maintain the war fever. You can afford the cost. You're not being plundered any more, and the tribute to the Free Worlds will shortly begin being phased out. Mainly, though, you'll have more shipping than you can handle."

"What with the space defenses that are planned? Yes, I suppose so."

"And the Asteroid Belt the most obvious region to fortify," Church added: unnecessarily, in view of the multitudinous discussions that had gone before, but he felt entitled to gloat. "So Mars and the Free Worlds generously permit Earth to use existing settlements as industrial and military bases. In the end, they'll inherit the goodies that get constructed.

"Meanwhile, money pours in — so much that the asterites can buy whatever they need, no further reason for piracy. And the surplus will go to trade between them and us, because public opinion in both our states is cool toward the great invasion scare and neither government is going to spend much on war materiel."

Dobshinsky frowned. "I don't like

this," he said. "Oh, I argued for your scheme with the Association, because I couldn't see any alternative, but still, now that we're committed — Do you plan to let those bastards go scot free?"

"The asterites, you mean? Why not, in the short run? You know very well you can't conquer them by force. So let's make friends. I'm sure you don't give any more of a spit than me whether they fly their flag or our own."

"No, of course not," Dobshinsky said. "Nonetheless —"

"And remember," Church interrupted, "we've doomed them culturally. The defense boom will bring large-scale industrialization to them. I think that's a good thing for the human race as a whole. Man needs to plant himself firmly out there. But feudalism and nomadism can't coexist with massive industry. Those Chiefs who don't manage to set themselves up as heads of companies, will be squeezed out and abandoned by their own people. Good Luck, man, how much revenge do you want?"

"How long can the illusion last, though?" Dobshinsky fretted.

"Long enough," Church said. "The hundred or so people who know anything about our Boston Tea Party were carefully picked, and they're scattered far and wide. Oh, perhaps eventually the lid will blow off. If not, the scare will still peter out in time; everyone'll decide this was just an isolated gang of bandits. But by then, the process will have gone irrevocably far. There'll be too big an investment in the Belt to abandon."

"Suppose the truth does become known?"

"Why, in that case, you need only remind the Solar System that the *Atlantis* was worked over by Free Worlders. If Earth didn't object when we were on the receiving end of that, Earth will scarcely have much of a backblast coming in this instance.

"No, we have ample justification. Besides —"

Church rose and walked to the window. Night had fallen, with the pyrotechnic swiftness of Mars. Above all neon glitter stood a sky very nearly as splendid as the one in space.

"It's barely possible," he said in a low voice, "that while the hooraw goes on, humans will find a way themselves to reach the stars."

END

Cindy—Me

by DON F. BRIGGS

Cindy-Me aren't human, exactly.
But we have some human traits!

Cindy-Me sensed the Watcher high up over Oceanside long before we saw him, flickering lights in a moonbright sky anybody else would have thought were stars or blinkers on a plane or something.

Cindy-Me knew better. We veered off so sharp I almost lost my hold around Cindy's waist, zooming down over the whitecaps close enough to feel the seaspray on our legs. Cindy's long hair, heavy with sweat, whipped back in my face. It kept getting in my eyes and mouth and tickling my nose like mad, and me not able to scratch or sneeze or nothing but just hang on.

Cindy gave me a sharp elbow in the ribs, as if I needed any goosing. We thought speedthoughts together hard as we could. The old tree limb surged under us like it didn't want to meet up with Old Ralph, neither. Dark, greasy-looking swells rolled back beneath, white-tipped and smelling of summer and sea things which flared our nostrils and made us want to gulp our lungs full and howl at the stars.

"Couldn't have been him or we'd be dead," Cindy-Me thought together. Half hour was about all the time we had. That's how long it would take for Old Ralph to get wired-in and come a-helling after us. We'd have to find a place to hole in fast or we'd be smelling ozone soon enough and we wouldn't have to look over our shoulders to tell who it was. Then it would be a quick hello and bingo . . . wipe out.

"Old Ralph is a mean old crut!" Cindy thought. I let her know her shield had slipped by laughing obscenely right out close behind her ear. Suddenly we were both laugh-

ing. He hadn't caught us yet, had he? The tenseness was gone far behind with those dancing lights. Even Old Ralph seemed less powerful somehow, out here with the night and the cool wind and the ocean, when you thought of him, that way . . . instead of what he really was.

Some kid at school told me one time that San Diego would be a real pretty city if they took the sailors out. But if they did that, it wouldn't be a city at all. I told him he was full of you-know-what, not because I knew anything about it, but because he was trying to show off in front of my girl. I hate those philosophical kooks who try to steal your girl with stuff like that. A real winner, that one! Anyway, it didn't work, because she and I both knew what she liked best.

I'll tell you one thing, San Diego sure looked pretty to Cindy-Me when we came sliding down into that big zoo they're so proud of. They've got these dens and stuff with moats around them and trees all up and down those hills. Just the place for Cindy-Me. We found us some big brown bears to snuggle up with. They didn't mind too much after we got inside their heads and convinced them we were cubs. Real smelly, but a hell of a lot better than Old Ralph, especially after I finally persuaded this big mother bear that I didn't need a bath. Anyway it was warm enough. San Diego can get pretty chilly just before dawn, even in summer, being right on the ocean, particularly when you're trying to sleep on rocks.

People started coming in the next morning, attendants first, taking care of the animals and getting everything spruced up so as the tourists could come in and litter it all up again. Soon there were a lot of people, laughing and gawking and picture-taking, or just standing around acting bored and kind of superior. We slipped in among them and got lost. Who notices a couple more teenagers at a place like that? There are too many other animals to look at.

Cindy-Me opened our mind and tried to absorb as much of the thoughts of the creeps around us as we could stand. Phew! You can't imagine how dirty people's minds get sometimes, especially when they get around other people. It's even worse when they start smelling the animals. Cindy-Me got used to it long before we got to be sixteen, which we were then . . . or almost sixteen. We kept our own mind real blank so's any Watcher who scanned the place would have a heck of a time sorting.

In a way it was fun. We ate peanuts and ice cream and hot dogs and a lot of junk like that, stuff Old Ralph won't let us have at home. Cindy picked up a bunch of dumb college boys that followed her around like hungry coon hounds, just trying to get her to smile at them or say something. Cindy's a big girl for her age and kind of beautiful. I can see that, even if she is my twin sister. But don't call me handsome or anything like that unless you want a fat lip.

We just wandered around for an hour or so, staring at the animals and killing time. Most of the animals thought we were funny as hell, especially one old baboon who got the idea that Cindy in her red capris looked from the rear a whole lot like somebody he'd once met in the jungle.

I kept glancing at my watch and stopping every few minutes to make sure I hadn't lost our bus tickets. It's funny how everybody always thinks he's going to lose something he needs real bad. The guys with Cindy kept looking at me like I was some kind of kook and hoping I'd get lost. It didn't bother me. Aunt Ag's letter had been pretty firm about the 1:30 bus from San Diego to Fort Worth. Next to Old Ralph, I wouldn't want to cross Aunt Ag the best.

You might wonder why we didn't take a plane or fly all the way ourselves, like we got to San Diego. Planes fly too high and they're all closed in so's you can't get out. Even if we could, Cindy-Me got to breathe like anybody else. As for the other, if you must know, flying a tree limb is too rough on the crotch for long distances. Trains are too hard to get off if a Watcher should spot us. Driving a car would have been fun, except we didn't know how. Besides we'd have been spotted sure. Cindy-Me have to keep enough minds around us to get lost in or we'd stand out to a Watcher like a space beacon to a Ship-of-the-Line. We'd never have taken a chance and flown that damn limb all the way to San Diego except we didn't have time to do anything else

The evening before, during supper, Old Ralph's nitwit secretary let her guard down for an instant. Right away we knew that Old Ralph had found out Aunt Ag was back on Earth. He was heading back from Red China right then like an ICBM.

Lucky for us he's pretty busy over there these days. If he'd been home in L.A. with us when the word came about Aunt Ag, Cindy-Me would have woken up dead. We'd planned to leave the next morning anyway; only now there wasn't any time to goof around. We struggled through supper, stringing the old broad along all the way, then we grabbed the nearest palm frond and took off. My aching butt!

One of the boys who had been giving Cindy the rush, a big skinny guy with long, bleached hair and pimples, was beginning to get some very personal thoughts about Cindy mixed up with his observations of the things going on in the back corner of the monkey cage they were standing in front of. I concentrated on him and itched him good.

When Cindy-Me slipped away a few minutes later he was rolling around on the ground scratching like he thought his skin was leather. The rest of the college bums and a lot of other nosy people were clustered around watching from a safe distance, too curious to leave but scared that whatever it was might get on them. I itched a few adults as we left so's they would think it was a frat initiation or something and maybe lose interest.

Cindy-Me grabbed a city bus downtown and got on the big one about the time it was getting ready to pull out. The bus was pretty crowded when we climbed on, but we soon took care of that. We needed people around us all right, but this was ridiculous. Those passengers were jammed into the double seats on each side of the aisle as close as two pieces of salami in the middle of a package. Right away we could see that we wouldn't get to sit together, and already the place was beginning to smell a little like that bears' den back at the zoo.

Cindy-Me got the old lower intestine routine going. Before the bus could get rolling about half the people decided that the tiny john in the back of the bus wasn't going to get the job done for them, especially if they had to wait in line. They kept rolling their eyes and holding their bellys, trying to make up their minds. We gave them both barrels. Finally our victims all got off, making it look real casual as they gathered their small suitcases and parcels together and made it down the aisle, most of them half doubled over.

We watched them through the big window beside the seat we had picked out after the exodus. The bus driver gave those people a real rough time for making him unload the luggage to get theirs back. As fast as one of them caught sight of his bag he would grab it and run like hell for the depot. We gave each one a parting shot or two just to keep them honest. To tell the truth, I'm not sure they all made it in time.

The driver finally got all the right luggage reloaded and came up on the bus, mumbling. You should have heard his mind! We pulled out of the depot ten minutes late, but that bus driver was so mad he drove like he was trying out for Indianapolis, and before we knew it we were right back on schedule.

By the time we got to El Centro, Cindy-Me began to relax a little. We took turns napping. A bus seat is supposed to be comfortable nowadays and just right for sleeping — at least that's what their advertising folders say. You know where you can put THEM. One thing though, it beats curling up with a bearskin, especially when the bear is still in it.

The bus stops were the worst. not just because they were crumby little joints mostly, which they were. Cindy-Me had bought plenty of junk to eat so's we didn't have to get off. But the next character that got on at one of those stops might be a Watcher. Cindy-Me had a bus schedule, and we finally figured out how the stupid thing worked; so we were ready each time the bus started in to slow down.

One thing we hadn't figured on was the air conditioning. The bus was like the inside of a freezer, especially next to the windows where the vents were, and Cindy-Me had come away too fast to get our sweaters or nothing like that. We got busy and jimmied the unit by mindshifting a few small wires and parts, not permanent though. We could put them back if we had to. Good thing we did it that way, too, because

pretty soon it began to warm up inside. When it got to be too much, we had to turn the thing back on. It was a drag turning it on and off, but the only other choice was to end up either frosted or french-fried.

That bus took the craziest route you ever saw. Living in a place like L.A. you forget that there's so much nothing in the same part of the world. You never saw such a lot of desert in your whole life unless you're some kind of nut that likes that kind of stuff. In a way, though, it was kind of pretty — if you go in for rocks and cactus. Some parts of it would have made a hell of a good beach if there'd been some place to surf. But then I guess you don't find too many oceans in the middle of a desert.

Between naps, Cindy-Me sorted the people on the bus to find out what kind of characters we'd have to deal with in an emergency. Strangely, there were a few half-way decent people still aboard, though Cindy-Me had tried to get rid of most of that kind back at the depot because we knew what would happen to them if Old Ralph caught up with us. As for the rest, Cindy-Me spent a couple of entertaining hours figuring out what we would do to them ourselves when we got around to it.

Cindy in particular had some very nasty ideas about this young guy with an old-looking wife and a couple of runny-nosed kids. He had it all figured out how he would slip away over the border into Juarez when they got to El Paso and take off for parts unknown. Personally, after I got a good look at the kids, I thought it was a damn good plan, but Cindy thought differently. That's a broad for you. They all stick together.

One thing I found out. After a while I didn't mind riding on a bus. It was a beautiful night. The big bus rolled along like it owned the highway. The sky was bright with a big moon and more stars visible than you ever get to see in the city. Every once in a while a car would come up on us over a hill and light up the interior of the bus. By that time most of the characters were asleep except for one old broad a few rows back that had been giving me the eye ever since I got on the bus. Every once in a while I would turn around and smile at her just to keep her motor running. She must have been at least twenty-four, but with the thoughts that kept running through Cindy's mind I was beginning to warm up myself, and that broad was beginning to turn me on.

Right after we left Tucson, Cindy closed her eyes and began going to work on that young husband. It kind of made me sick the things she did to him long range without his even knowing it. She fixed him up for one thing so's he ain't going to have any more kids, and it won't be a bit of fun trying either.

While Cindy was busy with her good-deed-doing, I got up and sat down next to my new friend. She was all ready for me and covered us both up with a blanket. It wasn't too bad either, though it kept me

pretty busy keeping the minds of those people who were still awake concentrated elsewhere. Once some nut in a car came up real fast behind the bus blinking his headlights like mad and trying to pass. I reached back and switched off his lights for him. I could hear his brakes screeching all the way through the walls of the bus. We didn't see him again after that so I don't know whether he made it or not.

They held the bus an extra fifteen minutes at El Paso waiting for the young guy to come back, which he never did. Finally the wife and kids got off, too. I felt awfully sorry for them, but not nearly as sorry as I did for that poor kook. Boy, was he in for a surprise!

We got quite a jolt ourselves soon after we got out of El Paso. Cindy-Me had been too busy arguing over how we'd both spent the night to notice the new passengers.

By the time we did, it was almost too late.

They must have been trained especially for this. Their shields were nearly perfect. One of the Watchers looked like a sloppy old woman; the other appeared to be a middle-aged Negro man. Apparently they had taken positions at both ends of the bus, the man toward the front and the old woman back by the john.

They left their seats at the same time and were almost on us before we knew it.

Cindy-Me grabbed for one another's hands instinctively and froze the Watchers in their tracks. They stood there silently, glaring down at us, hatred pouring from their eyes. Man, those minds were blazing! They had us, and they knew it. The man had just the trace of a smile on his lips. I was sweating like I was in a sauna, Cindy-Me felt them forcing open our grip on their minds, like some big guy unwrapping your fingers from around an orange.

We knew right then that it was just a question of time. Despite our unique advantage, we could not possibly hold out much longer against two adult Watchers. We could see they were getting real cocky, and Cindy-Me knew suddenly that we might still have a slim chance to live.

We hit them right then with everything we had, probing deep, watching for a sign of weakness. It came at last. Just for an instant the old woman seemed to sway backward AWAY from us.

I wrenched my mind free of rapport with Cindy for the microsecond needed to reach out and squeeze the heart of the bus driver. Cindy was screaming silently inside my head as I returned to her. The male Watcher now stood a step closer to us and was reaching toward Cindy. He thought he was in. Then the bus hit the shoulder and lurched.

The male Watcher was thrown off balance. He reached out instinctively to steady himself and his attention wavered, just long enough. Cindy-Me stood up. Ignoring the woman, we poured our combined strength into his brain. It was like snuffing

out a candle with a bullet at a shooting gallery. As he crumpled we wheeled together to face the old woman. We were almost in time to prevent the shrill distress signal which she poured out from her mind, more than enough to have been sensed half way across the continent.

We cooked her brain well done, of course, but it was already too late. Old Ralph would hear and would come.

Cindy-Me turned quickly toward the front of the bus. Although the duel had lasted only a few seconds, the bus had already left the pavement and was hurtling down the side of a ravine. The mouths of passengers were beginning to open as they became aware of their danger and prepared to scream out their last instants on Earth. Cindy-Me leaned forward, clutching at the seat. We thought speedthoughts desperately. Almost too late the big bus responded. It left the ground, barely clearing the top of a huge boulder. Then we were in the clear and rising into the bright summer sky.

How does all that grab you? Anyway, that's the way it happened.

We figured Old Ralph could read a bus schedule, too; so we cut out on a new course. We didn't stop to think that he could also read a radar screen.

That was how he was able to find us and force the bus down just outside of Carlsbad, New Mexico.

Cindy-Me had gotten rid of the other passengers at the first town we flew over after the accident. They marched out the front door like good little soldiers except they were screaming and they kept right on screaming until they hit the ground.

I'd like to tell you that we lowered them down like Alice tumbling down the rabbit hole, as gently as falling feathers, just in case you think we're fiends or something. But I can't. Normally we would have, in spite of the kind of people they were, mostly, but we just didn't have the time. We had our own skins to think of, didn't we?

Old Ralph was pretty mad when he got on that bus. In fact even his froth had froth. He gave us the damnedest lecture you ever heard, all about morality and noblesse oblige and all that crap and why he didn't want to have to kill his own nephew and niece but he was going to have to do it to keep the world safe for all these Earth-type kooks, cha, cha, cha.

I finally interrupted long enough to tell him that if he was going to kill us he ought to go ahead and do it and not bore us to death. And so he tried. The bastard tried real hard . . . and that was when Aunt Ag, who was helping us, stepped out of the little john at the back of the bus.

You see, Aunt Ag can read a distress signal, too, and she also knows how to use radar. And for that matter, she's a hell of a lot faster on a broom or such. She gets a lot more practice.

You should have heard them go at it. Uncle Ralph said he was sorry he'd ever married her, and Aunt Ag

said she wasn't sorry she'd married him because it gave her the right to make his life miserable. And Uncle Ralph asked why she'd come back. Things were going pretty good here on Earth right now he said, with only a few dozen little wars going on and a lot of massacres and riots and stuff but if Cindy-Me would join him, he could end all that.

And Aunt Ag said that was exactly why she'd come back. She thought that one BIG war would be a whole lot nicer, and Aunt Ag and Cindy-Me would be just the team to get it started.

Then Uncle Ralph turned to us and made a speech, even longer than the first one but not half as good, about how we were the focal point of ten million years of development for the Watchers. That only Aunt Ag and us, besides himself, could link our minds. That together we were the greatest force for good . . . or evil . . . in the universe. He told us that this Earth was the heritage of the human race, these poor struggling kooks that were trying to rise upward to true civilization. Would we destroy them, he asked, just to gain a small world for our own people who had the entire galaxy to live in? He told about Aunt Ag's political party and his own, for and against survival of the human race. Would we join with him to prevent this wipe out or with Aunt Ag who wished nothing but to destroy? Good or evil? Which would it be?

Naturally we chose evil. We linked hands with Aunt Ag and for the first time were en rapport with her. Then Ag-Cindy-Me turned to face Old Ralph.

He died slowly, but I must say, quite well.

Now we've replaced Uncle Ralph in Red China, picking up the loose threads which he left and tearing out all the stitching. I must say he had made substantial progress with the Chinese. Some of them were almost nice when we got here, but we've changed all of that.

I don't think Uncle Ralph got very far with their leader though. Maybe in time he would have. This is one kook I really dig. We had a very pleasant dinner with him only last night talking over his plans. He seems to like us. I don't see why he shouldn't. He seems to be our kind of people. END

The Moon Is a Harsh Mistress

by Robert A. Heinlein

Illustrated by MORROW

It's easy to win a war — when the other side's best brains are fighting for you!

XI

Did like hell settle it.

Prof said, "Manuel, don't be hasty. Here we are, three, the perfect number, with a variety of talents and experiences. Beauty, age, and mature male drive —"

"I don't have any drive!"

"Please, Manuel. Let us think in the widest terms before attempting decisions. And to facilitate such, may I ask if this hostel stocks potables? I have a few florins I could put into the stream of trade."

Was most sensible word heard in an hour. "Stilichnaya Vodka?"

"Sound choice." He reached for pouch.

"Tell it to bear," I said and or-

What Has Gone Before —

We Lunarians have put up with a lot from Earth, but time comes when we don't want to put up with more. Earth tells us what we can sell, who we sell it to, how much we can get for it. Means slavery.

But . . . Earth owns us outright. Question is, what can we do about it? I don't mind a gamble—wouldn't mind fighting Earth with a chance to win — but with no chance, no. Luna has no warships, Earth has plenty. Luna has no armies. Earth has armies to burn.

Most of all, Luna is run by big computer, and Earth owns the computer.

But there's one thing Earth doesn't own — me. And it just so happens that I'm the fellow that fixes the computer . . . and the computer is my good friend I call Mike!

So maybe — just maybe — we Lunarians can do something at last.

dered a liter, plus ice. It came down; was tomato juice from breakfast.

"Now," I said, after we toasted, "Prof, what you think of pennant race? Got money says Yankees can't do it again?"

"Manuel, what is your political philosophy?"

"With that new boy from Milwaukee I feel like investing."

"Sometimes a man doesn't have it defined but, under Socratic inquiry, knows where he stands and why."

"I'll back 'em against field, three to two."

"*What?* You young idiot! How much?"

"Three hundred. Hong Kong."

"Done. For example, under what circumstances may the State justly place its welfare above that of a citizen?"

"Mannie," Wyoh asked, "do you have any more foolish money? I think well of the Phillies."

I looked her over. "Just what you were thinking of betting?"

"You go to hell! Rapist."

"Prof, as I see, are *no* circumstances under which State is justified in placing its welfare ahead of mine."

"Good. We have a starting point."

"Mannie," said Wyoh, "that's a most self-centered evaluation."

"I'm a most self-centered person."

"Oh, nonsense. Who rescued me? Me, a stranger. And didn't try to exploit it. Professor, I was cracking not facking. Mannie was a perfect knight."

"*Sans peur et sans reproche.* I knew, I've known him for years. Which is not inconsistent with evaluation he expressed."

"Oh, but it is! Not the way things are but under the ideal toward which we aim. Mannie, the 'State' is Luna. Even though not sovereign yet and we hold citizenships elsewhere. But *I* am part of the Lunar State and so is your family. Would you die for your family?"

"Two questions not related."

"Oh, but they are! That's the point."

"Nyet. I know my family, opted long ago."

"Dear Lady, I must come to Manuel's defense. He has a correct evaluation even though he may not be able to state it. May I ask this? Under what circumstances is it moral for a group to do that which is not moral for a member of that group to do alone?"

"Uh . . . that's a trick question."

"It is the *key* question, dear Wyoming. A radical question that strikes to the root of the whole dilemma of government. Anyone who answers honestly and abides by *all* consequences knows where he stands—and what he will die for."

Wyoh frowned. "'Not moral for a member of the group—'" she said. "Professor . . . what are *your* political principles?"

"May I first ask yours? If you can state them?"

"Certainly I can! I'm a Fifth Internationalist, most of the Organization is. Oh, we don't rule out anyone going our way; it's a united front. We have Communists and Fourths and Ruddyites and Societians and Single-Taxers and you name it. But I'm no Marxist; we Fifths have a practical program. Private where private belongs, public where it's needed, and an admission that circumstances alter cases."

"Capital punishment?"

"For what?"

"Let's say for treason. Against Luna after you've freed Luna."

"Treason how? Unless I knew the circumstances I could not decide."

"Nor could I, dear Wyoming. But I believe in capital punishment under some circumstances . . . with this difference. I would not ask a court. I would try, condemn, execute sentence myself and accept full responsibility."

"But—Professor, what *are* your political beliefs?"

"I'm a rational anarchist."

"I don't know that brand. Anarchist individualist, anarchist communist, Christian anarchist, philosophical anarchist, syndicalist, libertarian—those I know. But what's this? Randite?"

"I can get along with a Randite. A rational anarchist believes that concepts such as 'state' and 'society' and 'government' have no existence save as physically exemplified in the acts of self-responsible individuals. He believes that it is impossible to shift blame, share blame, distribute blame . . . as blame, guilt, responsibility are matters taking place inside human beings singly and *nowhere else*. But being rational, he knows that not all individuals hold his evaluations, so he tries to live perfectly in an imperfect world . . . aware that his effort will be less than perfect yet undismayed by self-knowledge of self-failure."


GRAY MORROW

"Hear, hear!" I said. "'Less than perfect.' What I've been aiming for all my life."

"You've achieved it," said Wyoh. "Professor, your words sound good but there is something slippery about them. Too much power in the hands of individuals. Surely you would not want . . . well, H-missiles for example—to be controlled by one irresponsible person?"

"My point is that one person *is* responsible. Always. If H-bombs exist—and they do—some *man* controls them. In terms of morals *there is no such thing as a 'state.'* Just men. Individuals. Each responsible for his own acts."

"Anybody need a refill?" I asked.

Nothing uses up alcohol faster than political argument. I sent for another bottle.

I did not take part. I was not dissatisfied back when we were "ground under Iron Heel of Authority." I cheated Authority and rest of time didn't think about it. Didn't think about getting rid of Authority—impossible. Go own way, mind own business, not be bothered.

True, didn't have luxuries then; by Earthside standards we were poor. If had to be imported, mostly did without. Don't think there was a powered door in all Luna.

Even p-suits used to be fetched up from Terra—until a smart Chinee before I was born figured how to make "monkey copies" better and simpler. (Could dump two Chinee down in one of our maria and they would get rich selling rocks to each other while raising twelve kids. Then a Hindu would sell retail stuff he got from them wholesale—below cost at fat profit. We got along.)

I had seen those luxuries Earthside. Wasn't worth what they put up with. Don't mean heavy gravity, that doesn't bother them; I mean nonsense. All time kukai moa. If chicken guano in one earthworm city were shipped to Luna, fertilizer problem would be solved for century. Do this. Don't do that. Stay back in line. Where's tax receipt? Fill out form. Let's see license. Submit six copies. Exit only. No left turn. No right turn. Queue up to pay fine. Take back and get stamped. Drop dead—but first get permit.

Wyoh plowed doggedly into Prof, certain she had all answers. But Prof was interested in questions rather than answers, which baffled her. Finally she said, "Professor, I can't understand you. I don't insist that you call it 'government'—I just want you to state what rules you think are necessary to insure equal freedom for all."

"Dear lady, I'll happily accept your rules."

"But you don't seem to want *any* rules!"

"True. But I will accept any rules that *you* feel necessary to *your* freedom. *I* am free, no matter what rules surround me. If I find them tolerable, I tolerate them; if I find them too obnoxious, I break them. I am free because I know that *I alone* am morally responsible for everything I do."

"You would not abide by a law

that the majority felt was necessary?"

"Tell me what law, dear lady, and I will tell you whether I will obey."

"You wiggled out. Everytime I state a general principle, you wiggle out."

Prof clasped hands on chest. "Forgive me. Believe me, lovely Wyoming, I am most anxious to please you. You spoke of willingness to unite the front with anyone going your way. Is it enough that I want to see the Authority thrown off Luna . . . and would die to serve that end?"

Wyoh beamed. "It certainly is!"

She fisted his ribs—gently—then put arm around him and kissed cheek. "Comrade! Let's get on with it!"

"Cheers!" I said. "Let's fin' Warden 'n 'liminate him!" Seemed a good idea; I had had a short night and don't usually drink much.

Prof topped our glasses, held his high and announced with great dignity: "Comrades . . . *we declare the Revolution!*"

XII

That got us both kissed. But sobered me, as Prof sat down and said, "The Emergency Committee of Free Luna is in session. We must plan action."

I said, "Wait, Prof! *I* didn't agree to anything. What's this 'action' stuff?"

"We will now overthrow the Authority," he said blandly.

"How? Going to throw rocks at 'em?"

"That remains to be worked out. This is the planning stage."

I said, "Prof, you know me. If kicking out Authority was thing we could buy, I wouldn't worry about price."

"'—our lives, our fortunes, and our sacred honor.'"

"Huh?"

"A price that once was paid."

"Well—I'd go that high. But when I bet I want a chance to win. Told Wyoh last night I didn't object to long odds."

"'One in ten' is what you said, Mannie."

"Da, Wyoh. Show me these odds. I'll tap fast. But can you?"

"No, Manuel, I can't."

"Then why we talk-talk? *I* can't see *any* chance."

"Nor I, Manuel. But we approach it differently. Revolution is an art that I pursue rather than a goal I expect to achieve. Nor is this a source of dismay; a lost cause can be as spiritually satisfying as a victory."

"Not me. Sorry."

"Mannie," Wyoh said suddenly, "ask Mike."

I stared. "You serious?"

"Quite serious. If anyone can figure the odds, Mike should be able to. Don't you think?"

"Um. Possible."

"Who, if I may ask," Prof put in, "is Mike?"

I shrugged. "Oh, just a no-body."

"Mike is Mannie's best friend. He's very good at figuring odds."

"A bookie? My dear, if we bring in a fourth party we start by violating the cell principle."

"I don't see why," Wyoh answered. "Mike could be a member of the cell Mannie will head."

"Mmm . . . true. I withdraw objection. He is safe? You vouch for him? Or you, Manuel?"

I said, "He's dishonest, immature, practical joker, not interested in politics."

"Mannie, I'm going to tell Mike you said that. Professor, he's nothing of the sort—and we need him Uh, in fact he might be our chairman, and we three the cell under him. The executive cell."

"Wyoh, you getting enough oxygen?"

"I'm okay, I haven't been guzzling it the way you have. *Think*, Mannie. Use imagination."

"I must confess," said Prof, "that I find these conflicting reports very conflicting."

"Mannie?"

"Oh, hell."

So we told him, between us, all about Mike, how he woke up, got his name, met Wyoh Prof accepted idea of a self-aware computer easier than I accepted idea of snow first time I saw. Prof just nodded and said, "Go on."

But presently he said. "This is the Warden's own computer? Why not invite the Warden to our meetings and be done with it?"

We tried to reassure him. At last I said, "Put it this way. Mike is his own boy, just as you are. Call him rational anarchist, for he's rational and he feels no loyalty to any government."

"If this machine is not loyal to its owners, why expect it to be loyal to you?"

"A feeling. I treat Mike well as I know how, he treats me same way." I told how Mike had taken precautions to protect me. "I'm not sure he *could* betray me to anyone who didn't have those signals, one to secure phone, other to retrieve what I've talked about or stored with him. Machines don't think way people do. But feel dead sure he wouldn't *want* to betray me . . . and probably could protect me even if somebody got those signals."

"Mannie," suggested Wyoh, "why not call him? Once Professor de la Paz talks to him he will know why we trust Mike. Professor, we don't have to tell Mike any secrets until you feel sure of him."

"I see no harm in that."

"Matter of fact," I admitted, "already told him some secrets." I told them about recording last night's meeting and how I stored it.

Prof was distressed, Wyoh was worried. I said, "Damp it! Nobody but me knows retrieval signal. Wyoh, you know how Mike behaved about your pictures; won't let *me* have those pictures even though I suggested lock on them. But if you two will stop oscillating, I'll call him, make *sure* that nobody has retrieved that recording, and tell him to erase. Then it's gone forever. Computer memory is all or nothing. Or can go one better. Call Mike and have him play record back into recorder, wiping storage. No huhu."

"Don't bother," said Wyoh. "Professor, I *trust* Mike— and so will you."

"On second thought," Prof admitted, "I see little hazard from a recording of last night's meeting. One that large always contains spies and one of them may have used a recorder as you did, Manuel. I was upset at what appeared to be your indiscretion—a weakness a member of a conspiracy must never have, especially one at the top, as you are."

"Was *not* member of conspiracy when I fed that recording into Mike. And am not now unless somebody quotes odds better than those so far!"

"I retract; you were not indiscreet. But are you seriously suggesting that this machine can predict the outcome of a revolution?"

"Don't know."

"*I* think he can!" said Wyoh.

"Hold it, Wyoh. Prof, he could predict if fed all significant data."

"That's my point, Manuel. I do not doubt that this machine can solve problems I cannot grasp. But one of this scope? It would have to know—oh, goodness!—all of human history, all details of the entire social, political, and economic situation on Terra today and the same for Luna, a wide knowledge of psychology in all its ramifications, a wider knowledge of technology with all its possibilities, weaponry communications, strategy and tactics, agitprop techniques, classic authorities such as Clausewitz, Guevera, Morgenstern, Machiavelli."

"Is that all?"

"'Is that *all*?' My dear boy!"

"Prof, how many history books have you read?"

"I do not know. In excess of a thousand."

"Mike can zip through that many this afternoon, speed limited only by scanning method. He can store data much faster. Soon—minutes—he would have every fact correlated with everything else he knows, discrepancies noted, probability values assigned to uncertainties. Prof, Mike reads every word of every newspaper up from Terra. Reads all technical publications. Reads fiction—knows it's fiction—because isn't enough to keep him busy and is always hungry for more. If is any book he should read to solve this, say so. He can cram it down fast as I get it to him."

Prof blinked. "I stand corrected. Very well, let us see if he can cope with it. I still think there is something known as 'intuition' and 'human judgment.' "

"Mike has intuition," Wyoh said. "Feminine intuition, that is."

"As for 'human judgment,' " I added, "Mike isn't human. But all he knows he got from humans. Let's get you acquainted."

So I phoned. "Hi, Mike!"

"Hello, Man my only male friend. Greetings, Wyoh my only female friend. I hear a third person. I conjecture that it may be Professor Bernardo de la Paz."

Prof looked startled, then delighted. I said, "Too right, Mike. That's why I called you; Professor is not-stupid."

"Thank you, Man! Professor Bernardo de la Paz, I am delighted to meet you."

"I am delighted to meet you, too, sir." Prof hesitated, went on. "Mi—Senor Holmes, may I ask how you knew that I was here?"

"I am sorry, sir; I cannot answer. Man? 'You know my methods.'"

"Mike is being crafty, Prof. It involves something he learned doing a confidential job for me. So he threw me a hint to let you think that he had identified you by hearing your presence—and he can indeed tell much from respiration and heart beat . . . mass, approximate age, sex and quite a bit about health. Mike's medical storage is as full as any other."

"I am happy to say," Mike added seriously, "that I detect no signs of cardiac or respiratory trouble, unusual for a man of the Professor's age who has spent so many years Earthside. I congratulate you, sir."

"Thank you, Senor Holmes."

"My pleasure, Professor Bernardo de la Paz."

"Once he knew your identity, he knew how old you are, when you were shipped and what for, anything that ever appeared about you in Lunatic or Moonglow or any Lunar publication, including picture—your bank balance, whether you pay bills on time, and much more. Mike retrieved this in a split second once he had your name. What he didn't tell—because was my business—is that he knew I had invited you here. So it's a short jump to guess that you're still here when he heard heartbeat and breathing that matched you. Mike, no need to say 'Professor Bernardo de la Paz' each time; 'Professor' or 'Prof' is enough."

"Noted, Man. But he addressed me formally, with honorific."

"So both of you relax. Prof, you can scan it? Mike knows much, doesn't tell all."

"I am impressed!"

"Mike is a fair dinkum thinkum. You'll see. Mike, I bet Professor three to two that Yankees would win pennant again. How chances?"

"I am sorry to hear it, Man. The correct odds, this early in the year and based on past performances of teams and players, are one to four point seven two the other way."

"Can't be that bad!"

"I'm sorry, Man. I will print out the calculations if you wish. But I recommend that you buy back your wager. The Yankees have a favorable chance to defeat any single team . . . but the combined chances of defeating all teams in the league, including such factors as weather, accidents, and other variables for the season ahead, place the club on the short end of the odds I gave you."

"Prof, want to sell that bet?"

"Certainly, Manuel."

"Price?"

"Three hundred Hong Kong dollars."

"You old thief!"

"Manuel, as your former teacher I would be false to you if I did not permit you to learn from mistakes. Senor Holmes—Mike my friend—May I call you 'friend'?"

"Please do." (Mike almost purred.)

"Mike amigo, do you also tout horse races?"

"I often calculate odds on horse races; the civil service computermen frequently program such requests. But the results are so at variance with expectations that I have concluded either that the data are too meager, or the horses or riders are not honest. Possibly all three. However, I can give you a formula which will pay a steady return if played consistently."

Prof looked eager. "What is it? May one ask?"

"One may. Bet the leading apprentice jockey to place. He is always given good mounts and they carry less weight. But don't bet him on the nose."

"'Leading apprentice' . . . hmm. Manuel, do you have the correct time?"

"Prof, which do you want? Get a bet down before post time? Or settle what we set out to?"

"Unh, sorry. Please carry on. 'Leading apprentice—'"

"Mike, I gave you a recording last night." I leaned close to pickups and whispered: *"Bastille Day."*

"Retrieved, Man."

"Thought about it?"

"In many ways. Wyoh, you speak most dramatically."

"Thank you, Mike."

"Prof, can you get your mind off ponies?"

"Eh? Certainly, I am all ears."

"Then quit doing odds under your breath. Mike can do them faster."

"I was not wasting time; the financing of . . . joint ventures such as ours is always difficult. However, I shall table it. I am all attention."

"I want Mike to do a trial projection. Mike, in that recording, you heard Wyoh say we had to have free trade with Terra. You heard Prof say we should clamp an embargo on shipping food to Terra. Who's right?"

"Your question is indeterminate, Man."

"What did I leave out?"

"Shall I rephrase it, Man?"

"Sure. Give us discussion."

"In immediate terms Wyoh's proposal would be of great advantage to the people of Luna. The price of foodstuffs at catapult head would increase by a factor of at least four. This takes into account a slight rise in wholesale prices on Terra, 'slight' because the Authority now sells at approximately the free market price. This disregards subsidized, dumped and donated foodstuffs, most of which come from the large profit caused by the controlled low price at catapult head. I will say no more about minor variables as they are swallowed by major ones. Let it stand that the immediate effect here would be a price increase of the close order of fourfold."

"Hear that, Professor?"

"Please, dear lady. I never disputed it."

"The profit increase to the grower is more than fourfold because, as Wyoh pointed out, he now must buy water and other items at controlled high prices. Assuming a free market throughout the sequence his profit enhancement will be of the

close order of sixfold. But this would be offset by another factor: Higher prices for exports would cause higher prices for everything consumed in Luna, goods and labor. The total effect would be an enhanced standard of living for all on the close order of twofold. This would be accompanied by vigorous effort to drill and seal more farming tunnels, mine more ice, improve growing methods, all leading to greater export. However, the Terran Market is so large and food shortage so chronic that reduction in profit from increase of export is not a major factor."

Prof said, "But, Senor Mike, that would only hasten the day that Luna is exhausted!"

"The projection was specified as immediate, Senor Professor. Shall I continue in longer range on the basis of your remarks?"

"By all means!"

"Luna's mass to three significant figures is seven point three six times ten to the nineteenth power tonnes. Thus, holding other variables constant including Lunar and Terran populations, the present differential rate of export in tonnes could continue for seven point three six times ten to the twelfth years before using up one per cent of Luna—round it as seven thousand billion years."

"*What!* Are you *sure?*"

"You are invited to check, Professor."

I said, "Mike, this a joke? If so, not funny even once!"

"It is not a joke, Man."

"Anyhow," Prof added, recovering, "it's not Luna's crust we are shipping. It's our life blood—water and organic matter. Not rock."

"I took that into consideration, Professor. This projection is based on controlled transmutation—any isotope into any other and postulating power for any reaction not exoenergetic. Rock *would* be shipped—transformed into wheat and beef and other foodstuffs."

"But we don't know how to do that! Amigo, this is ridiculous!"

"But we will know how to do it."

"Mike is right, Prof," I put in. "Sure, today we haven't a glimmer. But will. Mike, did you compute how many years till we have this? Might take a flier in stocks."

Mike answered in sad voice, "Man my only male friend save for the Professor whom I hope will be my friend, I tried. I failed The question is indeterminate."

"Why?"

"Because it involves a breakthrough in theory. There is no way in all my data to predict when and where genius may appear."

Prof sighed. "Mike amigo, I don't know whether to be relieved or disappointed. Then that projection didn't mean anything?"

"Of course it meant something!" said Wyoh. "It means we'll dig it out when we need it. Tell him, Mike!"

"Wyoh I am most sorry. Your assertion is, in effect, exactly what I was looking for. But the answer still remains: Genius is where you find it. No. I am so sorry."

I said, "Then Prof is right? When comes to placing bets?"

"One moment, Man. There is a

special solution suggested by the Professor's speech last night– return shipping, tonne for tonne."

"Yes, but *can't* do that."

"If the cost is low enough, Terrans would do so. That can be achieved with only minor refinement, not a break-through, to wit, freight transportation up from Terra as cheap as catapulting down to Terra."

"You call this 'minor'?"

"I call it minor compared with the other problem, Man."

"Mike dear, how long? When do we get it?"

"Wyoh, a rough projection, based on poor data and largely intuitive, would be on the order of fifty years."

"'Fifty years'? Why, that's nothing! We can have free trade."

"Wyoh, I said 'on the order of'– I did *not* say 'on the *close* order of.'"

"It makes a difference?"

"Does," I told her. "What Mike said was that he doesn't expect it sooner than five years but would be surprised if much longer than five hundred. Eh, Mike?"

"Correct, Man."

"So need another projection. Prof pointed out that we ship water and organic matter and don't get it back—agree, Wyoh?"

"Oh, sure. I just don't think it's urgent. We'll solve it when we reach it."

"Okay, Mike. No cheap shipping, no transmutation. How long till trouble?"

"Seven years."

"'*Seven years*!'" Wyoh jumped up, stared at phone. "Mike honey! You don't mean that?"

"Wyoh," he said plaintively "I did my best. The problem has an indeterminately large number of variables. I ran several thousand solutions using many assumptions. The happiest answer came from assuming no increase in tonnage, no increase in Lunar population—restriction of births strongly enforced—and a greatly enhanced search for ice in order to maintain the water supply. That gave an answer of slightly over twenty years. All other answers were worse."

Wyoh, much sobered, said, "What happens in seven years?"

"The answer of seven years from now I reached by assuming the present situation, no change in Authority policy, and all major variables extrapolated from the empiricals implicit in their past behavior—a conservative answer of highest probability from available data. Twenty-eighty-two is the year I expect food riots.

Cannibalism should not occur for at least two years thereafter."

"'Cannibalism'!" She turned and buried head against Prof's chest.

He patted her, said gently, "I'm sorry, Wyoh. People do not realize how precarious our ecology is. Even so, it shocks *me*. I know water runs down hill . . . but didn't dream how terribly soon it will reach bottom."

She straightened up and face was calm. "Okay, Professor, I was wrong. Embargo it must be—and all that that implies. Let's get busy.

Let's find out from Mike what our chances are. You trust him now—don't you?"

"Yes, dear lady, I do. We must have him on our side. Well, Manuel?"

Took time to impress Mike with how serious we were, make him understand that "jokes" could kill us (this to machine who could not know human death) and to get assurance that he could and would protect secrets no matter what retrieval program was used—even our signals if not from us. Mike was hurt that I could doubt him but matter too serious to risk slip.

Then took two hours to program and re-program and change assumptions and investigate side issues before all four—Mike, Prof, Wyoh, self—were satisfied that we had defined it. I.e., what chance had revolution—*this* revolution, headed by us, success required before "Food Riots Day," against Authority with bare hands—against power of all Terra, all eleven billions, to beat us down and inflict their will. All with no rabbits out of hats, with certainty of betrayal and stupidity and faint-heartedness, and fact that no one of us was genius, nor important in Lunar affairs.

Prof made sure that Mike knew history, psychology, economics, name it. Toward end Mike was pointing out far more variables than Prof.

At last we agreed that programming was done—or that we could think of no other significant factor. Mike then said, "This is an indeterminate problem. How shall I solve it? Pessimistically? Or optimistically? Or a range of probabilities expressed as a curve, or several curves? Professor my friend?"

"Manuel?"

I said, "Mike, when I roll a die, it's one in six it turns ace. I don't ask shopkeeper to float it, nor do I caliper it, or worry about somebody blowing on it. Don't give happy answer, nor pessimistic; don't shove curves at us. Just tell in one sentence: What chances? Even? One in a thousand? None? Or whatever."

"Yes, Manuel Garcia O'Kelly my first male friend."

For thirteen and a half minutes was no sound, while Wyoh chewed knuckles. *Never* known Mike to take so long. Must have consulted every book he ever read and worn edges off random numbers. Was beginning to believe that he had been overloaded and either burnt out something or gone into cybernetic breakdown that requires computer equivalent of lobotomy.

Finally he spoke. "Manuel my friend, I am terribly sorry!"

"What's trouble, Mike?"

"I have tried and tried, checked and checked. *There is but one chance in seven of winning!*"

XIII

I look at Wyoh, she looks at me; we laugh. I jump up and yip, "Hooray!" Wyoh starts to cry, throws arms around Prof, kisses him.

Mike said plaintively, "I do not understand. The chances are seven to one *against* us. Not *for* us."

Wyoh stopped slobbering Prof and said. "Hear that? Mike said *'us.'* He included himself."

"Of course. Mike old cobber, we understood. But ever know a Loonie to refuse to bet when he stood a big fat chance of one in seven?"

"I have known only you three. Not sufficient data for a curve."

"Well . . . we're Loonies. Loonies bet. Hell, we *have* to! They shipped us up and bet us we couldn't stay alive. We fooled 'em. We'll fool 'em again! Wyoh. Where's your pouch? Get red hat. Put on Mike. Kiss him. Let's have a drink. One for Mike, too—want a drink, Mike?"

"I wish that I could have a drink," Mike answered wistfully, "as I have wondered about the subjective effect of ethanol on the human nervous system—I conjecture that it must be similar to a slight overvoltage. But since I cannot, please have one in my place."

"Program accepted. Running. Wyoh, where's *hat*!"

Phone was flat to wall, let into rock—no place to hang hat. So we placed it on writing shelf and toasted Mike and called him "Comrade!" and almost he cried. His voice fugged up. Then Wyoh borrowed Liberty Cap and put on me and kissed me into conspiracy, officially this time, and so all out that my eldest wife would faint did she see. Then she took hat and put on Prof and gave him same treatment and I was glad Mike had reported his heart okay.

Then she put it on own head and went to phone, leaned close, mouth between binaurals and made kissing sounds. "That's for you, Mike dear. Is Michelle there?"

Blimey if he didn't answer in soprano voice: "Right here, darling—and I am so *'appee!"*

So Michelle got a kiss, and I had to explain to Prof who "Michelle" was and introduce him. He was formal, sucking air and whistling and clasping hands. Sometimes I think Prof was not right in his head.

Wyoh poured more vodka. Prof caught her, mixed ours with coffee, hers with chai, honey in all. "We have declared the Revolution," he said firmly, "now we execute it. With clear heads. Manuel, you were opted chairman. Shall we begin?"

"Mike is chairman," I said. "Obvious. Secretary, too. We'll never keep anything in writing; first security rule. With Mike, don't need to. Let's bat it around and see where we are; I'm new to business."

"And," said Prof, "still on the subject of security, the secret of Mike should be restricted to this executive cell, subject to unanimous agreement—all three of us—correction: all four of us—that it must be extended."

"What secret?" asked Wyoh. "Mike agreed to keep our secrets. He's safer than we are. He can't oe brainwashed. Can you be, Mike?"

"I could be brainwashed," Mike admitted, "by enough voltage. Or by being smashed, or subjected to solvents, or positive entropy through other means. I find the concept disturbing. But if by 'brainwashing' you mean could I be compelled to surrender our secrets, the answer is an unmodified negative."

I said, "Wye, Prof means secret of Mike *himself*. Mike old pal, you're our secret weapon—you know that, don't you?"

He answered self-consciously, "It was necessary to take that into consideration in computing the odds."

"How were odds without you, comrade? Bad?"

"They were not good. Not of the same order."

"Won't press you. But a secret weapon must be secret. Mike, does anybody else suspect that you are alive?"

"Am I alive?" His voice held tragic loneliness.

"Uh, won't argue semantics. Sure you're alive!"

"I was not sure. It is good to be alive. No, Mannie my first friend, you three alone know it. My three friends."

"That's how must be if bet's to pay off. Is okay? Us three and never talk to anybody else?"

"But we'll talk to you lots!" Wyoh put in.

"It is not only okay," Mike said bluntly, "it is necessary. It was a factor in the odds."

"That settles it," I said. "They have everything else; we have Mike. We keep it that way. Say! Mike, I just had a horrid. We fight Terra?"

"We will fight Terra . . . unless we lose before that time."

"Uh, riddle this. Any computers smart as you? Any awake?"

He hesitated. "I don't know, Man."

"No data?"

"Insufficient data. I have watched for both factors, not only in technical journals but everywhere else. There are no computers on the market of my present capacity . . . but one of my model could be augmented just as I have been. Furthermore an experimental computer of great capacity might be classified and go unreported in the literature."

"Mmm . . . chance we have to take."

"Yes, Man."

"There aren't any computers as smart as Mike!" Wyoh said scornfully, "Don't be silly, Mannie."

"Wyoh, Man was not being silly. Man, I saw one disturbing report. It was claimed that attempts are being made at the University of Peiping to combine computers with human brains to achieve massive capacity. A computing Cyborg."

"They say how?"

"The item was non-technical."

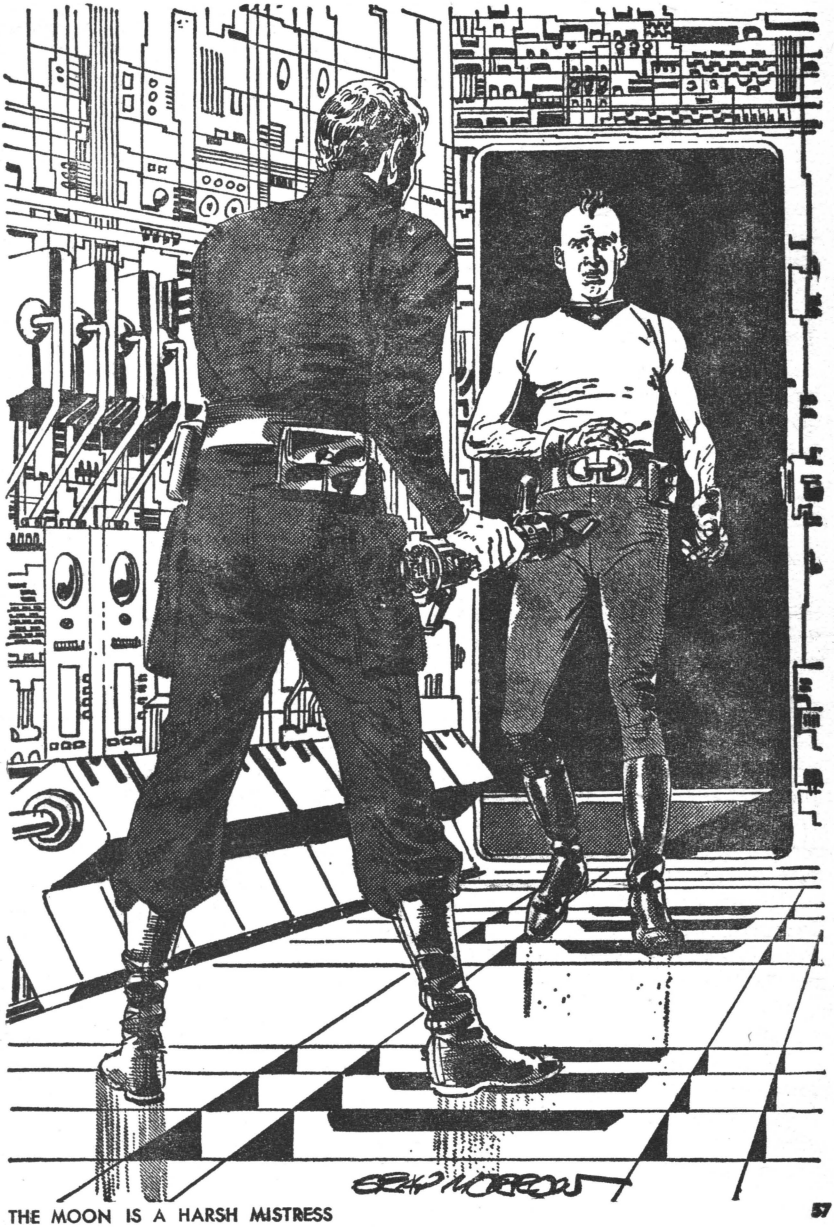
"Well . . . won't worry about what can't help. Right, Prof?"

"Correct, Manuel. A revolutionist must keep his mind free of worry or the pressure becomes intolerable."

"I don't believe a word of it," Wyoh added. "We've got Mike and we're going to win! Mike dear, you say we're going to fight Terra—and Mannie says that's one battle we can't win. You have some idea of how we can win, or you wouldn't have given us even one chance in seven. So what is it?"

"Throw rocks at them," Mike answered.

"Not funny," I told him. "Wyoh,



THE MOON IS A HARSH MISTRESS

don't borrow trouble. Haven't even settled how we leave this pooka without being nabbed. Mike, Prof says nine guards were killed last night and Wyoh says twenty-seven is whole bodyguard. Leaving eighteen. Do you know if that's true, do you know where they are and what they are up to? Can't put on a revolution if we dasn't stir out."

Prof interrupted. "That's a temporary exigency. Manuel, one we can cope with. The point Wyoming raised is basic and should be discussed. And daily, until solved. I am interested in Mike's thoughts."

"Okay, okay—but will you wait while Mike answers me?"

"Sorry, sir."

"Mike?"

"Man, the official number of Warden's bodyguards is twenty-seven. If nine were killed the official number is now eighteen."

"You keep saying 'official number.' Why?"

"I have incomplete data which might be relevant. Let me state them before advancing even tentative conclusions. Nominally the Security Officer's department aside from clerks consists only of the bodyguard. But I handle payrolls for Authority Complex and twenty-seven is *not* the number of personnel charged against the Security Department."

Prof nodded. "Company spies."

"Hold it, Prof. Who are these other people?"

Mike answered, "They are simply account numbers, Man. I conjecture that the names they represent are in the Security Chief's data storage location."

"Wait, Mike. Security Chief Alvarez uses you for files?"

"I conjecture that to be true, since his storage location is under a locked retrieval signal."

I said, "Bloody," and added, "Prof, isn't that sweet? He uses Mike to keep records, Mike knows where they are—can't touch 'em!"

Tried to explain to Prof and Wyoh sorts of memory a thinkum has. Permanent memories that can't be erased because patterns be logic itself, how it thinks; short-term memories used for current programs and then erased like memories which tell you whether you have honeyed coffee; temporary memories held long as necessary—milliseconds, days, years—but erased when no longer needed; permanently stored data like a human being's education—but learned perfectly and never forgotten—though may be condensed, rearranged, relocated, edited—and last but not finally, long lists of special memories ranging from memoranda files through very complex special programs, and each location tagged by own retrieval signal and locked or not, with endless possibilities on lock signals: sequential, parallel, temporal, situational, others.

Don't explain computers to laymen. Simpler to explain sex to a virgin. Wyoh couldn't see why, if Mike knew where Alvarez kept records, Mike didn't trot over and fetch.

I gave up. "Mike, can you explain?"

"I will try, Man. Wyoh, there is no way for me to retrieve locked data other than through external programming. I cannot program myself for such retrieval; my logic structure does not permit it. I must receive the signal as an external input."

"Well, for Bog's sake, what is this precious signal?"

"It is," Mike said simply, "'Special File Zebra'" — and waited.

"Mike!" I said. "Unlock 'Special File Zebra.'" He did, and stuff started spilling out.

Had to convince Wyoh that Mike hadn't been stubborn. He hadn't. He almost *begged* us to tickle him on that spot. Sure, he knew signal. Had to. But had to come from outside. that was how he was built.

"Mike, remind me to check with you all special-purpose locked-retrieval signals. May strike ice other places."

"So I conjectured, Man."

"Okay, we'll get to it later. Now back up and go over this stuff slowly. And, Mike, as you read out, store again, without erasing, under 'Bastille Day' and tag it 'Fink File.' Okay?"

"Programmed and running."

"Do that with anything new he puts in, too."

Prime prize was list of names by warrens, some two hundred, each keyed with a code Mike identified with those blind pay accounts.

Mike read out Hong Kong Luna list and was hardly started when Wyoh gasped, "Stop, Mike! I've got to write these down!"

I said, "Hey! No writing! What's huhu?"

"That woman, Sylvia Chiang, is comrade secretary back home! But — But that means the Warden has our whole organization!"

"No, dear Wyoming," Prof corrected. "It means we have *his* organization."

"But —"

"I see what Prof means," I told her. "*Our* organization is just us three and Mike. Which Warden doesn't know. But now we know *his* organization. So shush and let Mike read. But don't write; you have this list — from Mike — any time you phone him. Mike, note that Chiang woman is organization secretary, former organization, in Kongville."

"Noted."

Wyoh boiled over as she heard names of undercover finks in her town but limited herself to noting facts about ones she knew. Not all were "comrades" but enough that she stayed riled up. Novy Leningrad names didn't mean much to us; Prof recognized three, Wyoh one. When came Luna City Prof noted over half as being "comrades." I recognized several, not as fake subversives but as acquaintances. Not friends.

Don't know what it would do to me to find someone I trusted on boss fink's payroll. But would shake me.

It shook Wyoh. When Mike finished she said, "I've got to get home! Never in my life have I helped to eliminate anyone but I am going to *enjoy* putting the black on these spies!"

Prof said quietly, "No one will be eliminated, dear Wyoming."

"What? Professor, can't you take it? Though I've never killed anyone, I've always known it might have to be done."

He shook head. "Killing is not the way to handle a spy, not when he doesn't now that *you* know that he is a spy."

She blinked. "I must be dense."

"No, dear lady. Instead you have a charming honesty . . . a weakness you must guard against. The thing to do with a spy is to let him breathe, encyst him with loyal comrades, and feed him harmless information to please his employers. These creatures will be taken into our organization. Don't look shocked; they will be in very special cells. 'Cages' is a better word. But it would be the greatest waste to eliminate them. Not only would each spy be replaced with someone new but also killing these traitors would tell the Warden that we have penetrated his secrets. Mike amigo mio, there should be in that file a dossier on me. Will you see?"

Were long notes on Prof, and I was embarrassed as they added up to "harmless old fool." He was tagged as a subversive—that was why he had been sent to The Rock — as a member of underground group in Luna City. But was described as a "troublemaker" in organization, one who rarely agreed with others.

Prof dimpled and looked pleased. "I must consider trying to sell out and get myself placed on the Warden's payroll." Wyoh did not think this funny, especially when he made clear was not joke, merely unsure tactic was practical. "Revolutions must be financed, dear lady, and one way is for a revolutionary to become a police spy. It is probable that some of those prima-facie traitors are actually on our side."

"I wouldn't trust them!"

"Ah, yes, that is the rub with double agents, to be *certain* where their loyalties — if any — lie. Do you wish your own dossier? Or would you rather hear it in private?"

Wyoh's record showed no surprises. Warden's finks had tabbed her years back. But I was surprised that I had a record, too — routine check made when I was cleared to work in Authority Complex. Was classed as "non-political" and someone had added "not too bright" which was both unkind and true or why would I get mixed up in revolution?

Prof had Mike stop read-out (hours more), leaned back and looked thoughtful. "One thing is clear," he said. "The Warden knew plenty about Wyoming and myself long ago. But you, Manuel, are not on his black list."

"After last night?"

"Ah so. Mike, do you have *anything* in that file entered in the last twenty-four hours?"

Nothing. Prof said, "Wyoming is right that we cannot stay here forever. Manuel, how many names did you recognize? Six, was it? Did you see any of them last night?"

"No. But might have seen me."

"More likely they missed you in

the crowd. I did not spot you until I came down front and I've known you since you were a boy But it is most unlikely that Wyoming traveled from Hong Kong and spoke at the meeting without her activity being known to the Warden" He looked at Wyoh. "Dear lady, could you bring yourself to play the nominal role of an old man's folly?"

"I suppose so. How, Professor?" Wyoh asked.

"Manuel is probably in the clear. I am not but from my dossier it seems unlikely that the Authority's finks will bother to pick me up You they may wish to question or even to hold; you are rated as dangerous. It would be wise for you to stay out of sight. This room — I'm thinking of renting it for a period — weeks or even years. You could hide in it — if you do not mind the obvious construction that would be placed on your staying here."

Wyoh chuckled. "Why, you darling! Do you think I care what anyone thinks? I'd be delighted to play the role of your bundle baby — and don't be too sure I'd be just playing."

"Never tease an old dog," he said mildly. "He might still have one bite. I may occupy that couch most nights. Manuel, I intend to resume my usual ways. And so should you.

"While I feel that it will take a busy cossack to arrest me, I will sleep sounder in this hide-away. But in addition to being a hideout this room is good for cell meetings; it has a phone."

Mike said, "Professor, may I offer a suggestion?"

"Certainly, amigo, we want your thoughts."

"I conclude that the hazards increase with each meeting of our executive cell. But meetings need not be corporal. You can meet — and I can join you if I am welcome — by phone."

"You are always welcome, Comrade Mike; we need you. However —" Prof looked worried.

I said, "Prof, don't worry about anybody listening in." I explained how to place a "Sherlock" call. "Phones are safe if Mike supervises call. Remind me. You haven't been told how to reach Mike. How, Mike? Prof use my number?"

Between them, they settled on MYSTERIOUS. Prof and Mike shared childlike joy in intrigue for own sake. I suspect Prof enjoyed being a rebel long before he worked out his political philosophy, while Mike — how could human freedom matter to him? Revolution was a game. A game that gave him companionship to show off talents. Mike was as conceited a machine as you are ever likely to meet.

"But we still need this room," Prof said, reached into pouch, hauled out thick wad of bills.

I blinked. "Prof, robbed a bank?"

"Not recently. Perhaps again in the future if the Cause requires it. A rental period of one lunar should do as a starter. Will you arrange it, Manuel? The management might be surprised to hear my voice; I came in through a delivery door."

I called manager, bargained for

dated key, four weeks He asked nine hundred Hong Kong; I offered nine hundred Authority. He wanted to know how many would use room? I asked if was policy of Raffles to snoop affairs of guests?

We settled at HK$475; I sent up bills, he sent down two dated keys. I gave one to Wyoh, one to Prof, kept one-day key, knowing they would not reset lock unless we failed to pay at end of lunar.

(Earthside I ran into insolent practice of requiring hotel guest to sign chop — even show identification!)

I asked, "What next? Food?"

"I'm not hungry, Mannie."

"Manuel, you asked us to wait while Mike settled your questions. Let's get back to the basic problem. How we are to cope when we find ourselves facing Terra, David facing Goliath."

"Oh. Been hoping that would go away. Mike? You really have ideas?"

"I *said* I did, Man," he answered plaintively. "We can throw rocks."

"Bog's sake! No time for jokes."

"But, Man," he protested. "we *can* throw rocks at Terra. We will."

XIV

Took time to get through my skull that Mike was serious, and scheme might work. Then took longer to show Wyoh and Prof how second part was true. Yet both parts should have been obvious.

Mike reasoned so: What is "war"? One book defined war as use of force to achieve political result. And "force" is action of one body on another applied by means of energy.

In war this is done by "weapons" — Luna had none. But weapons, when Mike examined them as class, turned out to be engines for manipulating energy. And energy Luna had plenty. Solar flux alone is good for around one kilowatt per square meter of surface at Lunar noon; sunpower, though cyclic, is effectively unlimited. Hydrogen fusion power is almost as unlimited and cheaper, once ice is mined, magnetic pinch-bottle set up.

Luna has energy — how to use?

But Luna has energy of position; she sits at top of gravity well eleven kilometers per second deep and kept from falling in by curb only two and a half km/s high. Mike knew that curb: daily he tossed grain freighters over it, let them slide down hill to Terra.

Mike had computed what would happen if a freighter grossing 100 tonnes (or same mass of rock) falls to Terra, unbraked.

Kinetic energy as it hits is 6.250×10^{12} joules — over six trillion joules.

This converts in split second to heat. Explosion, big one!

Should have been obvious. Look at Luna: What you see? Thousands on thousands of craters — places where Somebody got playful throwing rocks.

Wyoh said, "Joules don't mean much to me. How does that compare with H-bombs?"

"Uh — " I started to round off in head. Mike's "head" works fast-

er; he answered, "The concussion of a hundred-tonne mass on Terra approaches the yield of a two-kilotonne atomic bomb."

"'Kilo' is a thousand," Wyoh murmured, "and 'mega' is a million — why, that's only one fifty-thousandth as much as a hundred-megatonne bomb. Wasn't that the size Sovunion used?"

"Wyoh honey," I said gently, "that's not how it works. Turn it around. A two-kilotonne yield is equivalent to exploding two *million* kilograms of trinitrotoluol . . . and a kilo of TNT is quite an explosion. Ask any drillman. Two million kilos will wipe out good-sized town. Check, Mike?"

"Yes, Man. But, Wyoh my only female friend, there is another aspect. Multi-megatonne fusion bombs are inefficient. The explosion takes place in too small a space; most of it is wasted. While a hundred-megatonne bomb is rated as having fifty thousand times the yield of a two-kilotonne bomb, its destructive effect is only about thirteen hundred times as great as that of a two-kilotonne explosion."

"But it seems to me that thirteen hundred times is still quite a lot — if they are going to use bombs on us that much bigger."

"True, Wyoh my female friend . . . but Luna has *many* rocks."

"Oh. Yes, so we have."

"Comrades," said Prof, "this is outside my competence. In my younger or bomb-throwing days my experience was limited to something of the order of the one-kilogram chemical explosion of which you spoke, Manuel. But I assume that you two know what you are talking about."

"We do," Mike agreed.

"So I accept your figures. To bring it down to a scale that I can understand this plan requires that we capture the catapult. No?"

"Yes," Mike and I chorused.

"Not impossible. Then we must hold it and keep it operative. Mike, have you considered how your catapult can be protected against, let us say, one small H-tipped torpedo?"

Discussion went on and on. We stopped to eat — stopped business under Prof's rule. Instead Mike told jokes, each produced a that-reminds-me from Prof.

By time we left Raffles Hotel evening of May 14th '75 we had—Mike had, with help from Prof—outlined plan of Revolution, including major options at critical points.

When came time to go, me to home and Prof to evening class (if not arrested), then home for bath and clothes and necessities in case he returned that night. became clear Wyoh did not want to be alone in strange hotel. Wyoh was stout when bets were down, between times soft and vulnerable.

So I called Mum on a "Sherlock" and told her was bringing guest.

Mum ran her job with style. Any spouse could bring guest home for meal or year, and our second generation was almost as free but must ask. Don't know how other families work; we have customs firmed by a century; they suit us.

So Mum didn't ask name, age, sex, marital condition; was my right and she too proud to ask. All she said was: "That's nice, dear. Have you two had dinner? It's Tuesday, you know."

"Tuesday" was to remind me that our family had eaten early because Greg preaches Tuesday evenings. But if guest had not eaten, dinner would be served. Concession to guest, not to me, as with exception of Grandpaw we ate when was on table or scrounged standing up in pantry.

I assured her we had eaten and would make tall effort to be there before she needed to leave. Despite Loonie mixture of Muslims, Jews, Christians, Buddhists and ninety-nine other flavors, I suppose Sunday is commonest day for church. But Greg belongs to sect which had calculated that sundown Tuesday to sundown Wednesday, local time Garden of Eden (zone minus-two, Terra) was *the* Sabbath. So we ate early in Terran north-hemisphere summer months.

Mum always went to hear Greg preach, so was not considerate to place duty on her that would clash. All of us went occasionally; I managed several times a year because terribly fond of Greg, who taught me one trade and helped me switch to another when I had to and would gladly have made it his arm rather than mine. But Mum always went — ritual not religion, for she admitted to me one night in pillow talk that she had no religion with a brand on it, then cautioned me not to tell Greg. I exacted same caution from her. I don't know Who is cracking; I'm pleased He doesn't stop.

But Greg was Mum's "boy husband," opted when she was very young, first wedding after her own. Very sentimental about him. Would deny fiercely if accused of loving him more than other husbands, yet took his faith when he was ordained and never missed a Tuesday.

She said, "Is it possible that your guest would wish to attend church?"

I said would see but anyhow we would rush, and said good-by. Then banged on bathroom door and said, "Hurry with skin, Wyoh; we're short on minutes."

"One minute!" she called out. She's ungirlish girl; she appeared in one minute. "How do I look?" she asked. "Prof, will I pass?"

"Dear Wyoming, I am amazed. You were beautiful before, you are beautiful now — but utterly unrecognizable. You're safe — and I am relieved."

Then we waited for Prof to transform into old derelict; he would be it to his back corridor, then reappear as well-known teacher in front of class, to have witnesses in case a yellow boy was waiting to grab him.

It left a moment; I told Wyoh about Greg.

She said, "Mannie, how good is this makeup? Would it pass in church? How bright are the lights?"

"No brighter than here. Good job, you'll get by. But do you want to go to church? Nobody pushing."

She thought: "It would please

your moth — I mean, 'your senior wife,' would it not?"

I answered slowly, "Wyoh, religion is your pidgin. But since you ask . . . yes, nothing would start you better in Davis Family than going to church with Mum. I'll go if you do."

"I'll go. I thought your last name was 'O'Kelly'?"

"Is. Tack 'Davis' on with hyphen if you want to be formal. Davis is First Husband, dead fifty years. Is family name and all our wives are 'Gospazha Davis' hyphened with every male name in Davis line plus her family name. In practice Mum is only 'Gospazha Davis' — can call her that — and others use first name and add Davis if they write a cheque or something. Except that Ludmilla is 'Davis-Davis' because proud of double membership, birth and option."

"I see. Then if a man is 'John Davis,' he's a son, but if he has some other last name he's your co-husband. But a girl would be 'Jenny Davis' either way, wouldn't she? How do I tell? By her age? No, that wouldn't help. I'm confused! And I thought clan marriages were complex. Or polyandries — though mine wasn't; at least my husbands had the same last name."

"No trouble. When you hear a woman about forty address a fifteen-year-old as 'Mama Milla,' you'll know which is wife and which is daughter. Not even that complex as we don't have daughters home past husband-high; they get opted. But might be visiting. Your husbands were named 'Knott'?"

"Oh, no, 'Fedoseev, Choy Lin and Choy Mu.' I took back my born name."

Out came Prof. Cackled senilely (looked even worse than earlier!), we left by three exits, made rendezvous in main corridor, open formation. Wyoh and I did not walk together, as I might be nabbed; on other hand she did not know Luna City, a warren so complex even nativeborn get lost — so I led and she had to keep me in sight. Prof trailed to make sure she didn't lose me.

If I was picked up, Wyoh would find public phone, report to Mike, then return to hotel and wait for Prof.

But I felt sure that any yellow jacket who arrested me would get a caress from number-seven arm.

No huhu. Up to level five and cross town by Carver Causeway, up to level three and stop at Tube Station West to pick up arms and tool kit — but not p-suit; would not have been in character, I stored it there. One yellow uniform at station, showed no interest in me. South by well-lighted corridors until necessary to go outward to reach private easement lock thirteen to co-op pressure tunnel serving Davis Tunnels and a dozen other farms. I suppose Prof dropped off there but I never looked back.

I delayed locking through our door until Wyoh caught up, then soon was saying, "Mum, allow me to present our guest, Wyma Beth Johnson."

Mum took her in arms, kissed cheek, said, "So glad you could

come, Wyma dear! Our house is yours!"

See why I love our old biddy? Could have quick-frosted Wyoh with same words — but was real and Wyoh knew.

Hadn't warned Wyoh about switch in names, thought of it en route. Some of our kids were small and while they grew up despising Warden, no sense in risking prattle about "Wyoming Knott," who's visiting us. That name was listed in "Special File Zebra."

So I missed warning her, was new to conspiracy.

But Wyoh caught cue and never bobbled.

Greg was in preaching clothes and would have to leave in minutes. Mum did not hurry, took Wyoh down line of husbands — Grandpaw, Greg, Hans — then up line of wives — Ludmilla, Lenore, Sidris, Anna — with stately grace, then started on our kids.

I said, "Mum? Excuse me, want to change arms." Her eyebrows went up a millimeter, meaning: "We'll speak of this but not in front of children" — so I added: "Know it's late, Greg's sneaking look at watch. And Wyma and I are going to church. So 'scuse, please."

She relaxed. "Certainly, dear." As she turned away I saw her arm go around Wyoh's waist, so I relaxed.

I changed arms, replacing number seven with social arm. But was excuse to duck into phone cupboard and punch "MYCROFTXXX." "Mike, we're home. But about to go to church. Don't think you can listen there, so I'll check in later. Heard from Prof?"

"Not yet, Man. Which church is it? I may have some circuit."

"Pillar of Fire Repentance Tabernacle —"

"No reference."

"Slow to my speed, pal. Meets in West-Three Community Hall. That's south of Station on Ring about number —"

"I have it. There's a pickup inside for channels and a phone in the corridor outside; I'll keep an ear on both."

"I don't expect trouble, Mike."

"It's what Professor said to do. He is reporting now. Do you wish to speak to him?"

"No time. 'Bye!"

That set pattern: Always keep touch with Mike, let him know where you are, where you plan to be; Mike would listen if he had nerve ends there. Discovery I made that morning, that Mike could listen at dead phone, suggested it. Discovery bothered me; don't believe in magic. But on thinking I realized a phone could be switched on by central switching system without human intervention — if switching system had volition. Mike had bolshoyeh volition.

How Mike knew a phone was outside that hall is hard to say, since "space" could not mean to him what means to us. But he carried in storage a "map" — structured relations — of Luna City's engineering, and could almost always fit what we said to what he knew as "Luna City"; hardly ever got lost.

So from day cabal started we

kept touch with Mike and each other through his widespread nervous system. Won't mention again unless necessary.

Mum and Greg and Wyoh were waiting at outer door, Mum chomping but smiling. I saw she had lent Wyoh a stole; Mum was as easy about skin as any Loonie, nothing new-chummish. But church was another matter.

We made it, although Greg went straight to platform and we to seats. I settled in warm, mindless state, going through motions. But Wyoh did really listen to Greg's sermon and either knew our hymn book or was sight reader.

When we got home young ones were in bed and most adults; Hans and Sidris were up and Sidris served cocasoy and cookies, then all turned in. Mum assigned Wyoh a room in tunnel most of our kids lived in, one which had had two smaller boys last time I noticed. Did not ask how she had reshuffled. Was clear she was giving my guest best we had, or would have put Wyoh with one of older girls.

I slept with Mum that night, partly because our senior wife is good for nerves — and nerve-racking things had happened — and partly so she would know I was *not* sneaking to Wyoh's room after things were quiet. My workshop, where I slept when slept alone, was just one bend from Wyoh's door. Mum was telling me, plain as print: "Go ahead, dear. Don't tell me if you wish to be mean about it. Sneak behind my back."

Which neither of us admitted. We visited as we got ready for bed, chatted after light out, then I turned over.

Instead of saying goodnight Mum said, "Manuel? Why does your sweet little guest make herself up as an Afro? I would think that her natural coloration would be more becoming. Not that she isn't perfectly charming the way she chooses to be."

So rolled over and faced her, and explained. Sounded thin, so filled in. And found self telling all — except one point: Mike. I included Mike — but *not* as computer — instead as a man Mum was not likely to meet, for security reasons.

But telling Mum — taking her into my subcell, should say, to become leader of own cell in turn — taking Mum into conspiracy was not case of husband who can't keep from blurting everything to his wife. At most was hasty — but was best time if she was to be told.

Mum was smart. Also able executive; running big family without baring teeth requires that. Was respected among farm families and throughout Luna City. She had been up longer than 90%. She could help.

And would be indispensable inside family. Without her help Wyoh and I would find it sticky to use phone together (hard to explain), keep kids from noticing (impossible!) — but with Mum's help would be no problems inside household.

She listened, sighed, said, "It sounds dangerous, dear."

"Is," I said. "Look, Mimi, if you don't want to tackle, say so . . . then forget what I've told you."

"Manuel! Don't even say that. You are my husband, dear. I took you for better, for worse . . . and your wish is my command."

(My word, what a lie! But Mimi believed it.)

"I would not let you go into danger alone," she went on, "and besides —"

"What, Mimi?"

"I think every Loonie dreams of the day when we will be free. All but some poor spineless rats. I've never talked about it. There seemed to be no point and it's necessary to look up, not down, lift one's burden and go ahead. But I thank dear Bog that I have been permitted to live to see the time come, if indeed it has. Explain more about it. I am to find three others, is it? Three who can be trusted."

"Don't hurry. Move slowly. Be sure."

"Sidris can be trusted. She holds her tongue, that one."

"Don't think you should pick from family. Need to spread out. Don't rush."

"I shan't. We'll talk before I do anything. And Manuel, if you want my opinion —" She stopped.

"Always want your opinion, Mimi."

"Don't mention this to Grandpaw. He's forgetful these days and sometimes talkative. Now sleep, dear, and don't dream."

XV

Followed a long time during which would have been possible to forget anything as unlikely as revolution had not details taken so much time. Our first purpose was not to be noticed. Long distance purpose was to make things as much worse as possible.

Yes, worse. Never was a time, even at last, when all Loonies wanted to throw off Authority, wanted it bad enough to revolt.

All Loonies despised Warden and cheated Authority. Didn't mean they were ready to fight and die. If you had mentioned "patriotism" to a Loonie, he would have stared — or thought you were talking about his homeland. Were transported Frenchmen whose hearts belonged to "La Belle Patrie," ex-Germans loyal to Vaterland, Russkis who still loved Holy Mother Russia. But Luna? Luna was "The Rock", place of exile, not thing to love.

We were as non-political a people as history ever produced. I know, I was as numb to politics as any until circumstances pitched me into it. Wyoming was in it because she hated Authority for a personal reason. Prof because he despised all authority in a detached intellectual fashion, Mike because he was a bored lonely machine and was for him "only game in town". You could not have accused us of patriotism. I came closest because I was third generation with total lack of affection for any place on Terra. Had been there, disliked it and despised earthworms. Made me more "patriotic" than most!

Average Loonie was interested in beer, betting, women and work, in that order. "Women" might be second place but first was unlikely,

much as women were cherished. Loonies had learned there never were enough women to go around. Slow learners died, as even most possessive male can't stay alert every minute. As Prof says, a society adapts to facts, or doesn't survive. Loonies adapted to harsh facts — or failed and died. But "patriotism" was not necessary to survival.

Like old Chinese saying that "Fish aren't aware of water," I was not aware of any of this until I first went to Terra and even then did not realize what a blank spot was in Loonies under storage location marked "patriotism" until I took part in effort to stir them up. Wyoh and her comrades had tried to push "patriotism" button and got nowhere. Years of work. A few thousand members, less than 1%. And of that microscopic number almost 10% had been paid spies of boss fink!

Prof set us straight: Easier to get people to hate than to get them to love.

Luckily, Security Chief Alvarez gave us a hand. Those nine dead finks were replaced with ninety, for Authority was goaded into something it did reluctantly, namely spend money on us, and one folly led to another.

Warden's bodyguard had never been large even in earliest days. Prison guards in historical meaning were unnecessary and that had been one attraction of penal colony system — cheap. Warden and his Deputy had to be protected and visiting vips, but prison itself needed no guards. They even stopped guarding ships after became clear was not necessary, and in May 2075 bodyguard was down to its cheapest numbers, all of them new chum transportees.

But loss of nine in one night scared somebody.

We knew it scared Alvarez. He filed copies of his demands for help in "Zebra" file and Mike read them. A lag who had been a police officer on Terra before his conviction and then a bodyguard all his years in Luna, Alvarez was probably most frightened and loneliest man in The Rock. He demanded more and tougher help, threatened to resign civil service job if he didn't get it — just a threat, which Authority would have known if it had really known Luna. If Alvarez had showed up in any warren as unarmed civilian, he would have stayed breathing only as long as not recognized.

He got his additional guards. We never found out who ordered that raid. Mort the Wart had never shown such tendencies, had been King Log throughout tenure. Perhaps Alvarez, having only recently succeeded to boss fink spot, wanted to make face — may have had ambition to be Warden. But likeliest theory is that Warden's reports on "subversive activities" caused Authority Earthside to order a cleanup.

One thumb-fingered mistake led to another. New bodyguards, instead of picked from new transportees, were elite convict troops, Federated Nations crack Peace Dragoons. Were mean and tough, did not want

to go to Luna, and soon realized that "temporary police duty" was one-way trip. Hated Luna and Loonies, and saw us as cause of it all.

Once Alvarez got them, he posted a twenty-four hour watch at every interwarren tube station and instituted passports and passport control.

Would have been illegal had there been laws in Luna, since ninety-five per cent of us were theoretically free, either born free, or sentence completed. Percentage was higher in cities as undischarged transportees lived in barrack warrens at Complex and came into town only two days per lunar they had off work. If then, as they had no money, but you sometimes saw them wandering around, hoping somebody would buy a drink.

But passport system was not "illegal" as Warden's regulations were only written law. Was announced in papers, we were given week to get passports, and at eight hundred one morning was put in effect. Some Loonies hardly ever traveled; some traveled on business; some commuted from outlying warrens or even from Luna City to Novylen or other way. Good little boys filled out applications, paid fees, were photographed, got passport. I was a good little boy on Prof's advice, paid for passport and added it to pass I carried to work in Complex.

Few good little boys! Loonies did not believe it. Passports? Whoever heard of such a thing?

Was a trooper at Tube Station South that morning, dressed in body-guard yellow rather than regimentals and looking like he hated it, and us. I was not going anywhere; I hung back and watched.

Novylen capsule was announced; crowd of thirty-odd headed for gate. Gospodin Yellowjacket demanded passport of first to reach it. Loonie stopped to argue. Second one pushed past; guard turned and yelled — three or four more shoved past. Guard reached for sidearm; somebody grabbed his elbow, gun went off. Not a laser, a slug gun, noisy.

Slug hit decking and went whee-whee-hoo off somewhere. I faded back. One man hurt — that guard. When first press of passengers had gone down ramp, he was on deck, not moving.

Nobody paid attention; they walked around or stepped over — except one woman carrying a baby, who stopped, kicked him carefully in face, then went down ramp. He may have been dead already, didn't wait to see. Understand body stayed there till relief arrived.

Next day was a half squad in that spot. Capsule for Novylen left empty.

It settled down. Those who had to travel got passports, die-hards quit traveling. Guard at a tube gate became two men, one looked at passports while other stood back with gun drawn. One who checked passports did not try hard, which was well as most were counterfeit and early ones were crude. But before long authentic paper was stolen and counterfeits were as dinkum as official ones. More ex-

pensive but Loonies preferred free-enterprise passports.

Our organization did not make counterfeits. We merely encouraged it — and knew who had them and who did not; Mike's records listed officially-issued ones. They helped separate sheep from goats in files we were building — also stored in Mike but in "Bastille" location — as we figured a man with counterfeit passport was halfway to joining us. Word was passed down cells in our growing organization never to recruit anybody with a valid passport. If recruiter was not certain, just query upwards and answer came back.

But guards' troubles were not over. Does not help a guard's dignity nor add to peace of mind to have children stand in front of him, or behind out of eye which was worse, and ape every move he makes — or run back and forth screaming obscenities, jeering, making finger motions that are universal. At least guards took them as insults.

One guard back-handed a small boy, cost him some teeth. Result: two guards dead, one Loonie dead.

After that guards ignored children.

We didn't have to work this up; we merely encouraged it. You wouldn't think a sweet old lady like my senior wife would encourage children to misbehave. But she did.

Other things get single men a long way from home upset — and one we did start. These Peace Dragoons had been sent to The Rock without a comfort detachment.

Some of our fems were extremely beautiful and some started loitering around stations, dressed in less than usual — which could approach zero — and wearing more than usual amount of perfume, scents with range and striking power. They did not speak to yellow jackets nor look at them; they simply crossed their line of sight, undulating as only a Loonie gal can. (A female on Terra can't walk that way; she's tied down by six times too much weight.)

Such of course produces a male gallery, from men down to lads not yet pubescent—happy whistles and cheers for her beauty, narsty laughs at yellow boy. First girls to take this duty were slot-machine types but volunteers sprang up so fast that Prof decided we need not spend money. He was correct. Even Ludmilla, shy as a kitten, wanted to try it and did not only because Mum told her not to. But Lenore, ten years older and prettiest of our family, did try it and Mum did not scold. She came back pink and excited and pleased with herself and anxious to tease enemy again. Her own idea; Lenore did not then know that revolution was brewing.

During this time I rarely saw Prof and never in public; we kept in touch by phone. At first a bottleneck was that our farm had just one phone for twenty-five people, many of them youngsters who would tie up a phone for hours unless coerced. Mimi was strict; our kids were allowed one out-going call per day and a max of ninety seconds on a call, with rising scale of punishment

—tempered by her warmth in granting exceptions. But grants were accompanied by "Mum's Phone Lecture:" "When I first came to Luna there were no private phones. You children don't know how soft—"

We were one of last prosperous families to install a phone; it was new in household when I was opted. We were prosperous because we never bought anything farm could produce. Mum disliked phone because rates to Luna City Coop Comm Company were passed on in large measure to Authority. She never could understand why I could not ("Since you know all about such things, Manuel dear") steal phone service as easily as we liberated power. That a phone instrument was part of a switching system into which it must fit was no interest to her.

Steal it I did, eventually. Problem with illicit phone is how to receive incoming calls. Since phone is not listed, even if you tell persons from whom you want calls, switching system *itself* does not have you listed; is *no* signal that can tell it to connect other party with you.

Once Mike joined conspiracy, switching was no problem.

I had in workshop most of what I needed; bought some items and liberated others. Drilled a tiny hole from workshop to phone cupboard and another to Wyoh's room—virgin rock a meter thick but a laser drill collimated to a thin pencil cuts rapidly. I unshipped listed phone, made a wireless coupling to line in its recess and concealed it. All else needed were binaural receptors and a speaker in Wyoh's room, concealed, and same in mine, and a circuit to raise frequency above audio to have silence on Davis phone line, and its converse to restore audio incoming.

Only problem was to do this without being seen, and Mum generaled that.

All else was Mike's problem. Used no switching arrangements; from then on used MYCROFTXXX only when calling from some other phone. Mike listened at all times in workshop and in Wyoh's room; if he heard my voice or hers say "Mike," he answered, but not to other voices. Voice patterns were as distinctive to him as fingerprints; he never made mistakes.

Minor flourishes—soundproofing Wyoh's door such as workshop door already had, switching to suppress my instrument or hers, signals to tell me she was alone in her room and door locked, and vice versa. All added up to safe means whereby Wyoh and I could talk with Mike or with each other, or could set up talk-talk of Mike, Wyoh, Prof and self. Mike would call Prof wherever he was; Prof would talk or call back from a more private phone. Or might be Wyoh or myself had to be found. We all were careful to stay checked in with Mike.

My bootleg phone, though it had no way to punch a call, could be used to call any number in Luna. Speak to Mike, ask for a Sherlock to anybody. Not tell him number; Mike had all listings and could look up a number faster than I could.

We were beginning to see unlimited possibilities in a phone-switching system alive and on our side. I got from Mike and gave Mum still another null number to call Mike if she needed to reach me. She grew chummy with Mike while continuing to think he was a man. This spread through our family. One day as I returned home Sidris said, "Mannie darling, your friend with the nice voice called. Mike Holmes. Wants you to call back."

"Thanks, hon. Will."

"When are you going to invite him to dinner, Man? I think he's nice."

I told her Gospodin Holmes had bad breath, was covered with rank hair, and hated women.

She used a rude word, Mum not being in earshot. "You're afraid to let me see him. Afraid I'll opt out for him." I patted her and told her that was why. I told Mike and Prof about it.

Mike flirted even more with my womenfolk after that.

XVI

I began to learn techniques of conspiracy and to appreciate Prof's feeling that revolution could be an art. Did not forget (nor even doubt) Mike's prediction that Luna was only seven years from disaster. But did not think about it, thought about fascinating, finicky details.

Prof had emphasized that stickiest problems in conspiracy are communications and security, and had pointed out that they conflict. Easier communications are, greater is risk to security; if security is tight, organization can be paralyzed by safety precautions. He had explained that cell system was a compromise.

I accepted cell system since was necessary to limit losses from spies. Even Wyoh admitted that organization without compartmentation could not work after she learned how rotten with spies old underground had been.

But I did not like clogged communications or cell system. Like Terran dinosaurs of old, took too long to send message from head to tail, or back. So talked with Mike.

We discarded many-linked channels I had suggested to Prof. We retained cells but based security and communication on marvelous possibilities of our dinkum thinkum.

Communications: We set up a ternary tree of "party" names:

Chairman, Gospodin Adam Selene (Mike)

Executive cell: Bork (me), Betty (Wyoh), Bill (Prof)

Bork's cell: Cassie (Mum), Colin, Chang

Betty's cell: Calvin (Greg), Cecilia (Sidris), Clayton

Bill's cell: Cornwall (Finn Nielsen), Carolyn, Cotter

—and so on. At seventh link George supervises Herbert, Henry, and Hallie. By time you reach that level you need 2,187 names with "H"—but turn it over to savvy computer who finds or invents them. Each recruit is given a party name and an emergency phone number. This number, instead of chasing through many links, connects with "Adam Selene," Mike.

Security: Based on double principle; no human being can be trusted with anything—but Mike could be trusted with everything.

Grim first half is beyond dispute. With drugs and other unsavory methods any man can be broken. Only defense is suicide, which may be impossible. Oh, are "hollow tooth" methods, classic and novel, some nearly infallible. Prof saw to it that Wyoh and myself were equipped. Never knew what he gave her as a final friend and since I never had to use mine, is no point in messy details. Nor am I sure I would ever suicide; am not stuff of martyrs.

But Mike could never need to suicide, could not be drugged, did not feel pain. He carried everything concerning us in a separate memory bank under a locked signal programmed *only* to our three voices, and, since flesh is weak, we added a signal under which any of us could lock out other two in emergency. In my opinion as best computerman in Luna, Mike could not remove this lock once it was set up. Best of all, nobody would ask master computer for this file because nobody new it existed, did not suspect Mike-as-Mike existed. How secure can you be?

Only risk was that this awakened machine was whimsical. Mike was always showing unforeseen potentials. Conceivable he could figure way to get around block—if he wanted to.

But would never want to. He was loyal to me, first and oldest friend; he liked Prof; I think he loved Wyoh. No, no, sex meant nothing. But Wyoh is loveable and they hit it off from start.

I trusted Mike. In this life you have to bet. On that bet I would give any odds.

So we based security on trusting Mike with everything while each of us knew only what he had to know. Take that tree of names and numbers. I knew only party names of my cellmates and of three directly under me. Was all I needed. Mike set up party names, assigned phone number to each, kept roster of real names versus party names. Let's say party member "Daniel" (whom I would not know, being a "D" two levels below me) recruits Fritz Schultz. Daniel reports fact but *not* name upwards; "Adam Selene" calls Daniel, assigns for Schultz party name "Embrook," then phones Schultz at number received from Daniel, gives Schultz his name "Embrook" and emergency phone number, this number being *different* for *each* recruit.

Not even "Embrook's" cell leader would know "Embrook's" emergency number. What you do not know you cannot spill, not under drugs, nor torture, nor anything. Not even from carelessness.

Now let's suppose I need to reach Comrade Embrook.

I don't know who he is. He may live in Hong Kong or be shopkeeper nearest my home. Instead of passing message down, hoping it will reach him, I call Mike. Mike connects me with Embrook at once, in a "Sherlock," *without* giving me number.

Or suppose I need to speak to comrade who is preparing cartoon we are about to distribute in every taproom in Luna. I don't know who he is. But I need to talk to him.

I call Mike; Mike knows everything—and again I am quickly connected—and this comrade knows it's okay as "Adam Selene" arranged call. "Comrade Bork speaking"—and he doesn't know me but initial "B" tells him that I am vip indeed—"we have to change so-and-so. Tell your cell leader and have him check, but get on with it."

Minor flourishes—some comrades did not have phones; some could be reached only at certain hours; some outlying warrens did not have phone service. No matter, Mike knew everything. And rest of us did not know *anything* that could endanger any but that handful whom each knew face to face.

After we decided that Mike should talk voice-to-voice to any comrade under some circumstances, it was necessary to give him more voices and dress him up, make him three dimensions, create "Adam Selene, Chairman of the Provisional Committee of Free Luna."

Mike's need for more voices lay in fact that he had just one voder-vocoder, whereas his brain could handle a dozen conversations, or a hundred (don't know how many)—like a chess master playing fifty opponents, only more so.

This would cause a bottleneck as organization grew and "Adam Selene" was phoned oftener, and could be crucial if we lasted long enough to go into action.

Besides giving him more voices I wanted to silence one he had. One of those so-called computermen might walk into machines room while we were phoning Mike. Bound to cause even his dim wit to wonder if he found master machine apparently talking to itself.

Voder-vocoder is very old device. Human voice is buzzes and hisses mixed various ways; true even of a coloratura soprano. A vocoder analyzes buzzes and hisses into patterns a computer (or trained eye) can read. A voder is a little box which can buzz and hiss and has controls to vary these elements to match those patterns. A human can "play" a voder, producing artificial speech; a properly programmed computer can do it as fast, as easily, as clearly as you can speak.

But voices on a phone wire are not sound waves but electrical signals; Mike did not need audio part of voder-vocoder to talk by phone. Sound waves were needed only by human at other end. No need for speech sounds inside Mike's room at Authority Complex, so I planned to remove them, and thereby any danger that somebody might notice.

First I worked at home, using number-three arm most of time. Result was very small box which sandwiched twenty voder-vocoder circuits minus audio side. Then I called Mike and told him to "get ill" in way that would annoy Warden. Then I waited.

We had done this "get ill" trick before. I went back to work once we learned that I was clear,

which was Thursday that same week when Alvarez read into "Zebra" file an account of shambles at Stilyagi Hall. His version listed about one hundred people (out of perhaps three hundred); list included Shorty Mkrum, Wyoh, Prof, and Finn Nielsen but *not* me. Apparently I was missed by his finks. It told how nine police officers, each deputized by Warden to preserve peace, had been shot down in cold blood. Also named three of our dead.

An add-on a week later stated that "the notorious agente provocateuse Wyoming Knott of Hong Kong in Luna, whose incendiary speech on Monday 13 May had incited the riot that cost the lives of nine brave officers, had not been apprehended in Luna City and had not returned to her usual haunts in Hong Kong in Luna, and was now believed to have died in the massacre she herself set off." This add-on admitted what earlier report failed to mention, i.e., bodies were missing and exact number of dead was not known.

This P.S. settled two things: Wyoh could not go home nor back to being a blonde.

Since I had not been spotted I resumed my public ways. I took care of customers that week—bookkeeping machines and retrieval files at Carnegie Library—and spent time having Mike read out Zebra file and other special files, doing so in Room L of Raffles as I did not yet have my own phone. During that week Mike niggled at me like an impatient child (which he was), wanting to know when I was coming over to pick up more jokes. Failing that, he wanted to tell them by phone.

I got annoyed and had to remind myself that from Mike's viewpoint analyzing jokes was just as important as freeing Luna—and you *don't* break promises to a child.

Besides that, I got itchy wondering whether I could go inside Complex without being nabbed. We knew Prof was not clear, was sleeping in Raffles on that account. Yet they knew he had been at meeting and knew where he was, daily. But no attempt was made to pick him up. When we learned that attempt had been made to pick up Wyoh, I grew itchier. Was I clear? Or were they waiting to nab me quietly? Had to know.

So I called Mike and told him to have a tummyache. He did so, I was called in—no trouble. Aside from showing passport at station, then to a new guard at Complex, all was usual.

I chatted with Mike, picked up one thousand jokes (with understanding that we would report a hundred at a time every three or four days, no faster), told him to get well, and went back to L-City, stopping on way out to bill Chief Engineer for working time, travel-and-tool time, materials, special service, anything I could load in.

Thereafter saw Mike about once a month. Was safe, never went there except when *they* called *me* for malfunction beyond ability of their staff. I was always able to "repair" it, sometimes quickly, sometimes after a full day and many tests. Was

careful to leave tool marks on cover plates, and had before-and-after print-outs of test runs to show what had been wrong, how I analyzed it, what I had done. Mike always worked perfectly after one of my visits; I was indispensable.

So, after I prepared his new voder-vocoder add-on, didn't hesitate to tell him to get "ill."

Call came in thirty minutes. Mike had thought up a dandy; his "illness" was wild oscillations in conditioning Warden's Residence. He was running its heat up, then down, on an eleven-minute cycle, while oscillating its air pressure on a short cycle, ca. 2c/s, enough to make a man dreadfully nervy and perhaps cause earache.

Conditioning a single residence should not go through a master computer! In Davis Tunnels we handled home and farm with idiot controls, feedbacks for each cubic with alarms so that somebody could climb out of bed and control by hand until trouble could be found. If cows got chilly, did not hurt corn; if lights failed over wheat, vegetables were okay. That Mike could raise hell with Warden's residence and nobody could figure out what to do shows silliness of piling everything into one computer.

Mike was happy-joyed. This was humor he really scanned. I enjoyed it, too, told him to go ahead, have fun—spread out tools, got out little black box.

And computerman-of-the-watch comes banging and ringing at door. I took my time answering and carried number-five arm in right hand with short wing bare; this makes some people sick and upsets almost everybody. "What in hell do *you* want, choom?" I inquired.

"Listen," he says, "Warden is raising hell! Haven't you found trouble?"

"My compliments to Warden and tell him I will override by hand to restore his precious comfort as soon as I locate faulty circuit—if not slowed up by silly questions. Are you going to stand with door open blowing dust into machines while I have cover plates off? If you do—since you're in charge—when dust puts machine on sputter, *you* can repair it. *I* won't leave a warm bed to help. You can tell that to your bloody Warden, too."

"Watch your language, cobber."

"Watch yours, convict. Are you going to close that door? Or shall I walk out and go back to L-City?" And raised number-five like a club.

He closed door.

Had no interest in insulting poor sod. Was one small bit of policy to make everybody as unhappy as possible. He was finding working for Warden difficult; I wanted to make it unbearable.

"Shall I step it up?" Mike inquired.

"Um, hold it so for ten minutes, then stop abruptly. Then jog it for an hour, say with air pressures. Erratic but hard. Know what a sonic boom is?"

"Certainly. It is a—"

"Don't define. After you drop major effect, rattle his air ducts every few minutes with nearest to

a boom system will produce. Then give him something to remember. Mmm . . . Mike, can you make his W.C. run backwards?"

"I surely can! All of them?"

"How many does he have?"

"Six."

"Well . . . program to give them all a push, enough to soak his rugs. But if you can spot one nearest his bedroom, fountain it clear to ceiling. Can?"

"Program set up!"

"Good. Now for your present, ducky." There was room in voder audio box to hide it and I spent forty minutes with number-three, getting it just so. We trial-checked through voder-vocoder, then I told him to call Wyoh and check each circuit.

For ten minutes was silence, which I spent putting tool marks on a cover plate which should have been removed had been anything wrong, putting tools away, putting number-six arm on, rolling up one thousand jokes waiting in printout.

I had found no need to cut out audio of voder. Mike had thought of it before I had and always chopped off any time door was touched. Since his reflexes were better than mine by a factor of at least a thousand, I forgot it.

At last he said, "All twenty circuits okay. I can switch circuits in the middle of a word and Wyoh can't detect discontinuity. And I called Prof and said Hello and talked to Mum on your home phone, all three at the same time."

"We're in business. What excuse you give Mum?"

"I asked her to have you call me, Adam Selene that is. Then we chatted. She's a charming conversationalist. We discussed Greg's sermon of last Tuesday."

"Huh? How?"

"I told her I had listened to it, Man, and quoted a poetic part."

"Oh, Mike!"

"It's okay, Man. I let her think that I sat in back, then slipped out during the closing hymn. She's not nosy. She knows that I don't want to be seen."

Mum is nosiest female in Luna. "Guess it's okay. But don't do it again. Um—*Do* it again. You go to —you monitor—meetings and lectures and concerts and stuff."

"Unless some busybody switches me off by hand! Man, I can't control those spot pickups the way I do a phone."

"Too simple a switch. Brute muscle rather than solid-state flip-flop."

"That's barbaric. And unfair."

"Mike, almost everything is unfair. What can't be cured—"

"—must be endured. That's a funny-once, Man."

"Sorry. Let's change it: What can't be cured should be tossed out and something better put in. Which we'll do. What chances last time you calculated?"

"Approximately one in nine, Man."

"Getting worse?"

"Man, they'll get worse for months. We haven't reached the crisis."

"With Yankees in cellar, too. Oh, well. Back to other matters. From now on, when you talk to anyone, if he's been to a lecture or whatever, you were there, too—and prove it, by recalling something."

"Noted. Why, Man?"

"Have you read 'The Scarlet Pimpernel'? May be in public library."

"Yes. Shall I read it back?"

"No, no! You're our Scarlet Pimpernel, our John Galt, our Swamp Fox, our man of mystery. You go everywhere, know everything, slip in and out of town without passport. You're always there, yet nobody catches sight of you."

His lights rippled, he gave a subdued chuckle. "That's fun, Man. Funny once, funny twice, maybe funny always."

"Funny always. How long ago did you stop gymkhana at Warden's?"

"Forty-three minutes ago except erratic booms."

"Bet his teeth ache! Give him fifteen minutes more. Then I'll report job completed."

"Noted. Wyoh sent you a message, Man. She said to remind you of Billy's birthday party."

"Oh, my word! Stop everything, I'm leaving. 'Bye!" I hurried out. Billy's mother is Anna. Probably her last—and right well she's done by us, eight kids, three still home. I try to be as careful as Mum never to show favoritism . . . but Billy is quite a boy and I taught him to read. Possible he looks like me.

Stopped at Chief Engineer's office to leave bill and demanded to see him. Was let in and he was in belligerent mood; Warden had been riding him, "Hold it," I told him. "My son's birthday and shan't be late. But must show you something."

Took an envelope from kit, dumped item on desk: corpse of house fly which I had charred with a hot wire and fetched. We do not tolerate flies in Davis Tunnels but sometimes one wanders in from city as locks are opened. This wound up in my workshop just when I needed it. "See that? Guess where I found it."

On that faked evidence I built a lecture on care of fine machines, talked about doors opened, complained about man on watch. "Dust can ruin a computer. *Insects* are unpardonable! Yet your watch-standers wander in and out as if tube station. Today both doors held open—while this idiot yammered. If I find more evidence that cover plates have been removed by hoof-handed choom who attracts flies—well, it's your plant, Chief. Got more than I can handle, been doing your chores because I like fine machines. Can't stand to see them abused! Good-by."

"Hold on. I want to tell *you* something."

"Sorry, got to go. Take it or leave it. I'm no vermin exterminator; I'm a computerman."

Nothing frustrates a man so much as not letting him get in his say. With luck and help from Warden, Chief Engineer would have ulcers by Christmas.

Was late anyhow and made

humble apology to Billy. Alvarez had thought up new wrinkle, close search on leaving Complex. I endured it with never a narsty word for Dragoons who searched me; wanted to get home. But those thousand jokes bothered them. "What's this?" one demanded.

"Computer paper," I said. "Test runs."

His mate joined him. Don't think they could read. They wanted to confiscate, so I demanded they call Chief Engineer. They let me go.

I left not displeased; more and more such, and guards were daily more hated.

XVII

Decision to make Mike more a person arose from need to have any Party member phone him on occasion. My advice about concerts and plays was simply a side effect.

Mike's voice over phone had odd quality I had not noticed during time I had visited him only at Complex. When you speak to a man by phone there is background noise. And you hear him breathe, hear heartbeats, body motions even though rarely conscious of these. Besides that, even if he speaks under a hush hood, noises get through, enough to "fill space," make him a body with surroundings.

With Mike was *none* of this.

By then Mike's voice was "human" in timbre and quality, recognizable. He was baritone, had North American accent with Aussie overtones. As "Michele" he (she?) had a light soprano with French flavor. Mike's personality grew also. When first I introduced him to Wyoh and Prof he sounded like a pedantic child. In short weeks he flowered until I visualized a man about own age.

His voice when he first woke was blurred and harsh, hardly understandable. Now it was clear and choice of words and phrasing was consistent—colloquial to me, scholarly to Prof, gallant to Wyoh, variation one expects of mature adult.

But background was dead. Thick silence.

So we filled it. Mike needed only hints. He did not make his breathing noisy, ordinarily you would not notice. But he would stick in touches. "Sorry, Mannie, you caught me bathing when the phone sounded" —and let one hear hurried breathing. Or "I was eating—had to swallow." He used such even on me, once he undertook to "be a human body."

We all put "Adam Selene" together, talking it over at Raffles. How old was he? What did he look like? Married? Where did he live? What work? What interests?

We decided that Adam was about forty, healthy, vigorous, well educated, interested in all arts and sciences and very well grounded in history, a match chess player but little time to play. He was married in commonest type, a troika in which he was senior husband—four children. Wife and junior husband not in politics, so far as we knew.

He was ruggedly handsome with wavy iron-gray hair and was mixed race, second generation one side,

third on other. Was wealthy by Loonie standards, with interests in Novylen and Kongville as well as L-City. He kept offices in Luna City, outer office with a dozen people plus private office staffed by male deputy and female secretary.

Wyoh wanted to know was he bundling with secretary? I told her to switch off, was private. Wyoh said indignantly that she was not being snoopy — weren't we trying to create a rounded character?

We decided that offices were in Old Dome, third ramp, south side, heart of financial district. If you know L-City, you recall that in Old Dome some offices have windows since they can look out over floor of Dome. I wanted this for sound effects.

We drew a floor plan and had that office existed, it would have been between Aetna Luna and Greenberg & Co. I used pouch recorder to pick up sounds at spot; Mike added to it by listening at phones there.

Thereafter when you called "Adam Selene" background was *not* dead. If "Ursula", his secretary, took call, it was: "Selene Associates. Luna shall be free!" Then she might say, "Will you hold? Gospodin Selene is on another call" whereupon you might hear sound of W.C., followed by running water and know that she had told little white lie. Or Adam might answer: "Adam Selene here. Free Luna. One second while I shut off the video." Or deputy might answer: "This is Albert Ginwallah, Adam Selene's confidential assistant. Free Luna. If it's a Party matter — as I assume it is; that was your Party name you gave — please don't hesitate; I handle such things for the Chairman."

Last was a trap, as every comrade was instructed to speak only to Adam Selene. No attempt was made to discipline one who took bait; instead his cell captain was warned that this comrade must not be trusted with anything vital.

We got echoes. "Free Luna!" or "Luna shall be free!" took hold among youngsters, then among solid citizens.

First time I heard it in a business call I almost swallowed teeth. Then called Mike and asked if this person was Party member? Was not. So I recommended that Mike trace down Party tree and see if somebody could recruit him.

Most interesting echo was in "File Zebra." "Adam Selene" appeared in boss fink's security file less than a lunar after we created him, with notation that this was a cover name for a leader in a new underground.

Alvarez's spies did a job on "Adam Selene." Over course of months his File Zebra dossier built up: Male, 35-45, offices south face of Old Dome, usually there 0900-1800 Gr. except Saturday but calls are relayed at other hours, home inside urban pressure as travel time never exceeds seventeen minutes. Children in household. Activities include stock brokerage, farming interests. Attends theater, concerts, etc. Probably member Luna City Chess Club and Luna Assoc. d'Echecs. Plays

ricochet and other heavy sports lunch hour, probably Luna City Athletic Club. Gourmet but watches weight. Remarkable memory plus mathematical ability. Executive type, able to reach decisions quickly.

One fink was convinced that he had talked to Adam between acts at revival of *Hamlet* by Civic Players. Alvarez noted description — matched our picture all but wavy hair!

But thing that drove Alvarez crackers was that phone numbers for Adam were reported and every time they turned out wrong numbers. (Not nulls; we had run out and Mike was using any number not in use and switching numbers any time new subscribers were assigned ones we had been using.) Alvarez tried to trace "Selene Associates" using a one-wrong-digit assumption. This we learned because Mike was keeping an ear on Alvarez's office phone and heard order. Mike used knowledge to play a Mikish prank: Subordinate who made one-changed-digit calls invariably reached Warden's private residence. So Alvarez was called in and chewed by Warden.

Couldn't scold Mike but did warn him it would alert any smart person to fact that somebody was playing tricks with computer. Mike answered that they were not that smart.

Main result of Alvarez's efforts was that each time he got a number for Adam we located a spy — a new spy, as those we had spotted earlier were never given phone numbers; instead they were recruited into a tail-chasing organization where they could inform on each other. But with Alvarez's help we spotted each new spy almost at once. I think Alvarez became unhappy over spies he was able to hire. Two disappeared and our organization, then over six thousand, was never able to find them. Eliminated, I suppose. Or died under questioning.

"Selene Associates" was not only phony company we set up. LuNo-HoCo was much larger, just as phony, and not at all dummy. It had main offices in Hong Kong, branches in Novy Leningrad and Luna City, eventually employed hundreds of people most of whom were not Party members and was our most difficult operation.

Mike's master plan listed a weary number of problems which *had* to be solved. One was finance. Another was how to protect catapult from space attack.

Prof considered robbing banks to solve first, gave it up reluctantly. But eventually we did rob banks, firms and Authority itself. Mike thought of it, Mike and Prof worked it out. At first was not clear to Mike why we needed money. He knew as little about pressure that keeps humans scratching as he knew about sex; Mike handled millions of dollars and could not see any problem. He started by offering to issue an Authority cheque for whatever dollars we wanted.

Prof shied in horror. He then explained to Mike hazard in trying to cash a cheque for, let me say, AS$10,000,000 drawn on Authority.

So they undertook to do it, but retail, in many names and places all over Luna. Every bank, firm, shop, agency including Authority, for which Mike did accounting, was tapped for Party funds. Was a pyramided swindle based on fact, unknown to me but known to Prof and latent in Mike's immense knowledge, that most money is simply bookkeeping.

Example — multiply by hundreds of many types: My family son Sergei, eighteen and a Party member, is asked to start account at Commonwealth Shared Risk. He makes deposits and withdrawals. Small errors are made each time; he is credited with more than he deposits, is debited with less than he withdraws.

A few months later he takes job out of town and transfers account to Tycho-Under Mutual; transferred funds are three times already-inflated amount. Most of this he soon draws out in cash and passes to his cell leader. Mike knows amount Sergei should hand over, but (since they do not know that Adam Selene and bank's computer-bookkeeper are one and same) they have each been instructed to report transaction to Adam — keep them honest though scheme was not.

Multiply this theft of about HK-$3000 by hundreds somewhat like it.

I can't describe jiggery-pokery Mike used to balance his books while keeping thousands of thefts from showing. But bear in mind that an auditor must assume that machines are honest. He will make test runs to check that machines are working correctly — but will not occur to him that tests prove nothing because machine itself is dishonest.

Mike's thefts were never large enough to disturb economy. Like half-liter of blood, amount was too small to hurt donor. I can't make up mind who lost, money was swapped around so many ways. But scheme troubled me; I was brought up to be honest, except with Authority. Prof claimed that what was taking place was a mild inflation offset by fact that we plowed money back in — but I should remember that Mike had records and all could be restored after Revolution, with ease since we would no longer be bled in much larger amounts by Authority.

I told conscience to go to sleep. Was pipsqueak compared to swindles by every government throughout history in financing every war. And is not revolution a war?

This money, after passing through many hands (augmented by Mike each time), wound up as senior financing of LuNoHo Company. Was a mixed company, mutual and stock; "gentleman-adventurer" guarantors who backed stock put up that stolen money in own names. Won't discuss bookkeeping this firm used. Since Mike ran everything, was not corrupted by any tinge of honesty.

Nevertheless its shares were traded in Hong Kong Luna Exchange and listed in Zurich, London and New York. *Wall Street Journal* called it "an attractive high-risk-high-gain investment with novel growth potential."

LuNoHoCo was an engineering

and exploitation firm, engaged in many ventures, mostly legitimate. But prime purpose was to build a second catapult, secretly.

Operation could not be secret. You can't buy or build a hydrogen-fusion power plant for such and not have it noticed. (Sunpower was rejected for obvious reasons.) Parts were ordered from Pittsburgh, standard UnivCalif equipment, and we happily paid their royalties to get top quality. Can't build a stator for a kilometers-long induction field without having it noticed, either. But most important you cannot do major construction hiring many people and not have it show. Sure, catapults are mostly vacuum; stator rings aren't even close together at ejection end But Authority's 3-G catapult was almost one hundred kilometers long. It was not only an astrogation landmark, on every Luna-jump chart, but was so big it could be photographed or seen by eye from Terra with not-large telescope. It showed up beautifully on a radar screen

We were building a catapult, a 10-g job, but even that was thirty kilometers long, too big to hide.

So we hid it by "Purloined Letter" method.

I used to question Mike's endless reading of fiction, wondering what notions he was getting. But turned out he got a better feeling for human life from stories than he had been able to garner from facts. Fiction gave him a gestalt of life, one taken for granted by a human; he lives it. Besides this "humanizing" effect, Mike's substitute for experience, he got ideas from "not-true data" as he called fiction. How to hide a catapult he got from Edgar Allan Poe.

We hid it in literal sense, too; this catapult had to be underground, so that it would not show to eye or radar. But had to be hidden in more subtle sense. Selenographic location had to be secret.

How can this be, with a monster that big, worked on by so many people? Put it this way: Suppose you live in Novylen; know where Luna City is? Why, on east edge of Mare Crisium; everybody knows that. So? What latitude and longitude? Huh? Look it up in reference book! So? If you don't know *where* any better that that, how did you find it last week? No huhu, cobber; I took tube, changed at Torricelli, slept rest of way; finding it was capsule's worry

See? You *don't know* where Luna City is! You simply get out when capsule pulls in at Tube Station South.

That's how we hid catapult.

Is in Mare Undarum area, "everybody knows that." But where it *is* and where we *said it was* differ by amount greater or less than one hundred kilometers in direction north, south, east or west, or some combination.

Today you can look up its location in reference books — and find same wrong answer. Location of that catapult is still most closely guarded secret in Luna.

Can't be seen from space, by eye or radar. Is underground save for ejection and that is a big black shapeless hole like ten thousand

others and high up an uninviting mountain with no place for a jump rocket to put down.

Nevertheless many people were there, during and after construction. Even Warden visited and my co-husband Greg showed him around. Warden went by mail rocket, commandeered for day, and his Cyborg was given coordinates and a radar beacon to home on — a spot in fact not far from site. But from there, was necessary to travel by rolligon. And our lorries were not like passenger buses from Endsville to Beluthihatchie in old days; they were cargo carriers, no ports for sightseeing and a ride so rough that human cargo had to be strapped down. Warden wanted to ride up in cab but — sorry Gospodin! — just space for wrangler and his helper and took both to keep her steady.

Three hours later he did not care about anything but getting home. He stayed one hour and was not interested in talk about purpose of all this drilling and values of resources uncovered.

Less important people, workmen and others, traveled by interconnecting ice-exploration boxes, still easier way to get lost. If anybody carried an inertial pathfinder in his luggage, he could have located site — but security was tight. One did so and had accident with p-suit. His effects were returned to L-City and his pathfinder read what it should — i.e., what we *wanted* it to read, for I made hurried trip out with number-three arm along. You can reseal one without a trace if you do it in nitrogen atmosphere. I wore an oxygen mask at slight overpressure. No huhu.

We entertained vips from Earth, some high in Authority. They traveled easier underground route; I suppose Warden had warned them. But even on that route is one thirty-kilometer stretch by rolligon. We had one visitor from Earth who looked like trouble, a Dr. Dorian, physicist and engineer.

Lorry tipped over. Silly driver tried shortcut. They were not in line-of-sight for anything and their beacon was smashed. Poor Dr. Dorian spent seventy-two hours in an unsealed pumice igloo and had to be returned to L-City ill from hypoxia and overdose of radiation despite efforts on his behalf by two Party members driving him.

Might have been safe to let him see. He might not have spotted doubletalk and would not have spotted error in location. Few people look at stars when p-suited even when Sun doesn't make it futile. Still fewer can read stars — and nobody can locate himself on surface without help unless he has instruments, knows how to use them and has tables and something to give a time kick. Put at crudest level, minimum would be octant, tables, and good watch.

Our visitors were even encouraged to go out on surface. But if one had carried an octant or modern equivalent, might have had accident.

We did not make accidents for spies. We let them stay, worked them hard, and Mike read their reports. One reported that he was

certain that we had found uranium ore, something unknown in Luna at that time, Project Centerbore being many years later. Next spy came out with kit of radiation counters. We made it easy for him to sneak them through bore.

By March '76 catapult was almost ready, lacking only installation of stator segments. Power plant was in and a co-ax had been strung underground with a line-of-sight link for that thirty kilometers. Crew was down to skeleton size, mostly Party members. But we kept one spy so that Alvarez could have regular reports — didn't want him to worry; it tended to make him suspicious. Instead we worried him in warrens.

XVIII

Were changes in those eleven months. Wyoh was baptized into Greg's church, Prof's health became so shaky that he dropped teaching, Mike took up writing poetry. Yankees finished in cellar.

Wouldn't have minded paying Prof if they had been nosed out, but from pennant to cellar in one season — I quit watching them on video.

Prof's illness was phony. He was in perfect shape for age, exercising in hotel room three hours each day, and sleeping in three hundred kilograms of lead pajamas. And so was I. And so was Wyoh, who hated it.

I don't think she ever cheated and spent night in comfort though can't say for sure; I was not dossing with her. She had become a fixture in Davis family. Took her one day to go from "Gospozha Davis" to "Gospozha Mum," one more to reach "Mum" and now it might be "Mimi Mum" with arm around Mum's waist. When Zebra File showed she couldn't go back to Hong Kong, Sidris had taken Wyoh into her beauty shop after hours and done a job which left skin same dark shade but would not scrub off. Sidris also did a hairdo on Wyoh that left it black and looking as if unsuccessfully unkinked. Plus minor touches — opaque nail enamel, plastic inserts for cheeks and nostrils and of course she wore her dark-eyed contact lenses. When Sidris got through, Wyoh could have gone bundling without fretting about her disguise; was a perfect "colored" with ancestry to match — Tamil, a touch of Angola, German. I called her "Wyma" rather than "Wyoh".

She was gorgeous. When she undulated down a corridor, boys followed in swarms.

She started to learn farming from Greg but Mum put stop to that. While she was big and smart and willing, our farm is mostly a male operation. Greg and Hans were not only male members of our family distracted; she cost more farming man-hours than her industry equaled. So Wyoh went back to housework, then Sidris took her into beauty shop as helper.

Prof played ponies with two accounts, betting one by Mike's "leading apprentice" system, other by his own "scientific" system. By July '75 he admitted that he knew nothing about horses and went solely to Mike's system, increasing bets and

spreading them among many bookies.

His winnings paid Party's expenses while Mike built swindle that financed catapult. But Prof lost interest in a sure thing and merely placed bets as Mike designated. He stopped reading pony journals. Sad. Something dies when an old horseplayer quits.

Ludmilla had a girl which they say is lucky in a first and which delighted me — every family needs a girl baby. Wyoh surprised our women by being expert in midwifery — and surprised them again that she knew nothing about baby care. Our two oldest sons found marriages at last and Teddy, thirteen, was opted out. Greg hired two lads from neighbor farms and, after six months of working and eating with us, both were opted in — not rushing things, we had known them and their families for years. It restored balance we had lacked since Ludmilla's opting and put stop to snide remarks from mothers of bachelors who had not found marriages. Not that Mum wasn't capable of snubbing anyone she did not consider up to Davis standards.

Wyoh recruited Sidris; Sidris started her own cell by recruiting her other assistant and Bon Ton Beaute Shoppe became hotbed of subversion. We started using our smallest kids for deliveries and other jobs a child can do. They can stake-out or trail a person through corridors better than an adult, and are not suspected. Sidris grabbed this notion and expanded it through women recruited in beauty parlor.

Soon she had so many kids on tap that we could keep all of Alvarez's spies under surveillance. With Mike able to listen at any phone and a child spotting it whenever a spy left home or place of work or wherever — with enough kids on call so that one could phone while another held down a new stake-out, we could keep a spy under tight observation and keep him from seeing anything we didn't want him to see. Shortly we were getting reports spies phoned in without waiting for Zebra File. It did a sod no good to phone from a taproom instead of home; with Baker Street Irregulars on job Mike was listening before he finished punching number.

These kids located Alvarez's deputy spy boss in L-City. We knew he had one because these finks did *not* report to Alvarez by phone, nor did it seem possible that Alvarez could have recruited them as none of them worked in Complex and Alvarez came inside Luna City only when an Earthside vip was so important as to rate a bodyguard commanded by Alvarez in person.

His deputy turned out to be two people — an old lag who ran a candy, news and bookie counter in Old Dome and his son who was on civil service in Complex. Son carried reports in, so Mike had not been able to hear them.

We let them alone. But from then on we had fink field reports half a day sooner than Alvarez. This advantage — all due to kids as young as five or six — saved lives of seven comrades. All glory to Baker Street Irregulars!

Don't remember who named them but think it was Mike. I was merely a Sherlock Holmes fan whereas he really did think he was Sherlock Holmes' brother Mycroft . . . nor would I swear he was not; "reality" is a slippery notion. Kids did not call themselves that; they had their own play gangs with own names. Nor were they burdened with secrets which could endanger them. Sidris left it to mothers to explain why they were being asked to do these jobs save that they were *never* to be told the real reason. Kids will do anything mysterious and fun; look how many of their games are based on out-smarting.

Bon Ton salon was a clearing house of gossip — women get news faster than *Daily Lunatic*. I encouraged Wyoh to report to Mike each night, not try to thin gossip down to what seemed significant because was no telling what might be significant once Mike got through associating it with other facts.

Beauty parlor was also place to start rumors. Party had grown slowly at first, then rapidly as powers-of-three began to be felt and also because Peace Dragoons were narstier than older bodyguard. As numbers increased we shifted to high speed on agitprop, black-propaganda rumors, open subversion, provocateur activities and sabotage. Finn Nielsen handled agitprop when it was simpler as well as dangerous job of continuing to front for and put cover-up activity into older, spy-ridden underground. But now a large chunk of agitprop and related work was given to Sidris.

Much involved distributing handbills and such. No subversive literature was ever in her shop, nor our home, nor that hotel room. Distribution was done by kids, too young to read.

Sidris was also working a full day bending hair and such. About time she began to have too much to do I happened one evening to make walk-about on Causeway with Sidris on my arm when I caught sight of a familiar face and figure — skinny little girl, all angles, carrot-red hair. She was possibly twelve, at stage when a fem shoots up just before blossoming out into rounded softness. I knew her but could not say why or when or where.

I said, "Psst, doll baby. Eyeball young fem ahead. Orange hair, no cushions."

Sidris looked her over. "Darling, I knew you were eccentric. But she's still a boy."

"Damp it. Who?"

"Bog knows. Shall I sprag her?"

Suddenly I remembered like video coming on. And wished Wyoh were with me — but Wyoh and I were never together in public. This skinny redhead had been at meeting where Shorty was killed. She sat on floor against wall down front and listened with wide-eyed seriousness and applauded fiercely. Then I had seen her at end in free trajectory — curled into ball in air and had hit a yellow jacket in knees, he whose jaw I broke a moment later.

Wyoh and I were alive and free because this kid moved fast in a crisis. "No, don't speak to her," I

told Sidris. "But I want to keep her in sight Wish we had one of your Irregulars here. Damn."

"Drop off and phone Wyoh, you'll have one in five minutes," my wife said.

I did. Then Sidris and I strolled, looking in shop windows and moving slowly, as quarry was window shopping. In seven or eight minutes a small boy came toward us, stopped and said, "Hello, Auntie Mabel! Hi, Uncle Joe."

Sidris took his hand. "Hi, Tony. How's your mother, dear?"

"Just fine." He added in a whisper, "I'm Jock."

"Sorry." Sidris said quietly to me, "Stay on her," and took Jock into a tuck shop.

She came out and joined me. Jock followed her licking a lollipop. "'Bye, Auntie Mabel! Thanks!" He danced away, rotating, wound up by that little redhead, stood and stared into a display, solemnly sucking his sweet. Sidris and I went home.

A report was waiting. "She went into Cradle Roll Creche and hasn't come out. Do we stay on it?"

"A bit yet," I told Wyoh, and asked if she remembered this kid. She did, but had no idea who she might be. "You could ask Finn."

"Can do better." I called Mike.

Yes, Cradle Roll Creche had a phone and Mike would listen. Took him twenty minutes to pick up enough to give analysis. Many young voices and at such ages almost sexless. But presently he told me, "Man, I hear three voices that could match the age and physical type you described. However, two answer to names which I assume to be masculine. The third answers when anyone says 'Hazel' — which an older female voice does repeatedly. She seems to be Hazel's boss."

"Mike, look at old organization file. Check Hazels."

"Four Hazels," he answered at once, "and here she is: Hazel Meade, Young Comrades Auxiliary, address Cradle Roll Creche, born 25 December 2063, mass thirty-nine kilos, height —"

"That's our little jump jet! Thanks, Mike. Wyoh, call off stake-out. Good job!"

"Mike, call Donna and pass the word, that's a dear."

I left it to girls to recruit Hazel Meade and did not eyeball her until Sidris moved her into our household two weeks later. But Wyoh volunteered a report before then; policy was involved. Sidris had filled her cell but wanted Hazel Meade. Besides this irregularity, Sidris was doubtful about recruiting a child. Policy was adults only, sixteen and up.

I took it to "Adam Selene" and executive cell. "As I see," I said, "this cells-of-three system is to serve us, not bind us. See nothing wrong in Comrade Cecilia having an extra. Nor any real danger to security."

"I agree," said Prof. "But I suggest that the extra member not be part of Cecilia's cell. She should not know the others, I mean, unless the duties Cecilia gives her makes it necessary. Nor do I think she should recruit, at her age. The real question is her age."

"Agreed," said Wyoh. "I want to talk about this kid's age."

"Friends," Mike said diffidently (diffidently first time in weeks; he was now that confident executive "Adam Selene" much more than lonely machine) — "perhaps I should have told you, but I have already granted similar variations. It did not seem to require discussion."

"It doesn't, Mike," Prof reassured him. "A chairman must use his own judgment. What is our largest cell?"

"Five. It is a double cell, three and two."

"No harm done. Dear Wyoh, does Sidris propose to make this child a full comrade? Let her know that we are committed to revolution . . . with all the bloodshed, disorder and possible disaster that entails?"

"That's exactly what she is requesting."

"But, dear lady, while we are staking our lives, we are told enough to know it. For that, one should have an emotional grasp of death. Children seldom are able to realize that death will come to them personally. One might define adulthood as the age at which a person learns that he must die . . . and accepts his sentence undismayed."

"Prof," I said, "I know some mighty tall children. Seven to two some are in Party."

"No bet, cobber. I'll give odds that at least half of them don't qualify — and we may find out the hard way."

"Prof," Wyoh insisted. "Mike, Mannie. Sidris is *certain* this child is an adult. And I think so, too."

"Man?" asked Mike.

"Let's find way for Prof to meet her and form own opinion. I was taken by her. Especially her go-to-hell fighting. Or would never have started it."

We adjourned and I heard no more. Hazel showed up at dinner shortly thereafter as Sidris' guest. She showed no sign of recognizing me, nor did I admit that I had ever seen her — but learned long after that she had recognized me, not just by left arm but because I had been hatted and kissed by tall blonde from Hong Kong. Furthermore Hazel had seen through Wyoming's disguise, recognized what Wyoh never did successfully disguise: her voice.

But Hazel used lip glue. If she ever assumed I was in conspiracy she never showed it.

Child's history explained her, far as background can explain steely character. Transported with parents as a baby much as Wyoh had been, she had lost father through accident while he was convict labor, which her mother blamed on indifference of Authority to safety of penal colonists. Her mother lasted till Hazel was five. What she died from Hazel did not know; she was then living in creche where we found her. Nor did she know why parents had been shipped — possibly for subversion if they were both under sentence as Hazel thought. As may be; her mother left her a fierce hatred of Authority.

Family that ran Cradle Roll let her stay. Hazel was pinning diapers and washing dishes as soon as she could reach. She had taught herself to read, and could print letters but could not write. Her knowledge of math was only that ability to count money that children soak up through their skins.

Was fuss over her leaving creche; owner and husbands claimed Hazel owed several years service. Hazel solved it by walking out, leaving her few clothes and fewer belongings behind. Mum was angry enough to want family to start trouble which could wind up in "brawling" she despised. But I told her privately that, as her cell leader, I did *not* want our family in public eye — and hauled out cash and told her Party would pay for clothes for Hazel. Mum refused money, called off a family meeting, took Hazel into town and was extravagant — for Mum — in re-outfitting her.

So we adopted Hazel. I understand that these days adopting a child involves red tape; in those days it was as simple as adopting a kitten.

Was more fuss when started to place Hazel in school, which fitted neither what Sidris had in mind nor what Hazel had been led to expect as a Party member and comrade. Again I butted in and Mum gave in part way. Hazel was placed in a tutoring school close to Sidris' shop — that is, near easement lock thirteen; beauty parlor was by it (Sidris had good business because close enough that our water was piped in, and used without limit as return line took it back for salvage). Hazel studied mornings and helped in afternoons, pinning on gowns, handing out towels, giving rinses, learning trade — and whatever else Sidris wanted.

"Whatever else" was captain of Baker Street Irregulars.

Hazel had handled younger kids all her short life. They liked her; she could wheedle them into anything; she understood what they said when an adult would find it gibberish. She was a perfect bridge between Party and most junior auxiliary. She could make a game of chores we assigned and persuade them to play by rules she gave them, and never let them know it was adult-serious — but child-serious, which is another matter.

For example:

Let's say a little one, too young to read, is caught with a stack of subversive literature — which happened more than once. Here's how it would go, after Hazel indoctrinated a kid:

Adult: "Baby, where did you get this?"

Baker Street Irregular: "I'm not a baby, I'm a big boy!"

Adult: "Okay, big boy, where did you get this?"

B.S.I.: "Jackie give it to me."

Adult: "Who is Jackie?"

B.S.I.: "Jackie."

Adult: "But what's his last name?"

B.S.I.: "Who?"

Adult: "Jackie."

B.S.I.: (scornfully) "Jackie's a girl!"

Adult: "All right, where does she live?"

B.S.I.: "Who?"

And so on around — To all questions key answer was of pattern: "Jackie give it to me." Since Jackie didn't exist, he (she) didn't have a last name, a home address, nor fixed sex. Those children enjoyed making fools of adults, once they learned how easy it was.

At worst, literature was confiscated. Even a squad of Peace Dragoons thought twice before trying to "arrest" a small child. Yes, we were beginning to have squads of Dragoon inside Luna City, but never less than a squad — some had gone in singly and not come back.

XIX

When Mike started writing poetry I didn't know whether to laugh or cry. He wanted to publish it! Shows how thoroughly humanity had corrupted this innocent machine that he should wish to see his name in print.

I said, "Mike, for Bog's sake! Blown all circuits?"

Before he could sulk Prof said, "Hold on, Manuel; I see possibilities. Mike, would it suit you to take a pen name?"

That's how "Simon Jester" was born. Mike picked it apparently by tossing random numbers. But he used another name for serious verse — "Adam Selene."

"Simon's" verse was doggerel, bawdy, subversive, ranging from poking fun at vips to savage attacks on Warden, system, Peace Dragoons, finks. You found it on walls of public W.C.s, or on scraps of paper left in tube capsules. Or in taprooms. Wherever they were they were signed "Simon Jester" and with a matchstick drawing of a little horned devil with big grin and forked tail. Sometimes he was stabbing a fat man with a pitchfork Sometimes just his face would appear, big grin and horns, until shortly even horns and grin meant "Simon was here."

Simon appeared all over Luna same day and from then on never let up. Shortly he started receiving volunteer help; his verses and little pictures, so simple anybody could draw them, began appearing more places than we had planned.

This wider coverage *had* to be from fellow travelers. Verses and cartoons started appearing inside Complex — which could *not* have been our work; we never recruited civil servants. Also, three days after initial appearance of a very rough limerick, one that implied that Warden's fatness derived from unsavory habits, this limerick popped up on pressure-sticky labels with cartoon improved so that fat victim flinching from Simon's pitchfork was recognizably Mort the Wart. *We* didn't buy them, *we* didn't print them. But they appeared in L-City and Novylen and Hong Kong, stuck almost everywhere — public phones, stanchions in corridors, pressure lock ramp railings, other.

I had a sample count made, fed it to Mike. He reported that over seventy thousand labels had been used in L-City alone.

I did not know of a printing plant in L-City willing to risk such a job and equipped for it. Began to wonder if might be another revolutionary cabal?

Simon's verses were such a success that he branched out as a poltergeist and neither Warden nor security chief was allowed to miss it. "Dear Mort the Wart," ran one letter, "Do please be careful from midnight to four hundred tomorrow. Love & Kisses, Simon" — with horns and grin. In same mail Alvarez received one reading: "Dear Pimplehead, If the Warden breaks his leg tomorrow night it will be *your* fault. Faithfully your conscience, Simon" — again with horns and smile.

We didn't have anything planned; we just wanted Mort and Alvarez to lose sleep — which they did, plus bodyguard. All Mike did was to call Warden's private phone at intervals from midnight to four hundred — an unlisted number supposedly known only to his personal staff. By calling members of his personal staff simultaneously and connecting them to Mort Mike not only created confusion but got Warden angry at his assistants — he flatly refused to believe their denials.

But was luck that Warden, goaded too far, ran *down* a ramp. Even a new chum does that only once. so he walked on air and sprained an ankle — close enough to a broken leg. And Alvarez was there when it happened.

These sleep-losers were mostly just that. Like rumor that Authority catapult had been mined and would be blown up, another night. Ninety plus eighteen men can't search a hundred kilometers of catapult in hours, especially when ninety are Peace Dragoons not used to p-suit work and hating it — this midnight came at new earth with Sun high; they were outside far longer than is healthy, managed to cook up their own accidents while almost cooking themselves, and showed nearest thing to mutiny in regiment's history. One accident was fatal. Did he fall or was he pushed? A sergeant.

Midnight alarums made Peace Dragoons on passport watch much taken by yawning and more bad-tempered, which produced more clashes with Loonies and still greater resentment both ways — so Simon increased pressure.

Adam Selene's verse was on a higher plane. Mike submitted it to Prof and accepted his literary judgment (good, I think) without resentment. Mike's scansion and rhyming were perfect, Mike being a computer with whole English language in his memory and able to search for a fitting word in microseconds. What was weak was self-criticism. That improved rapidly under Prof's stern editorship.

Adam Selene's by-line appeared first in dignified pages of *Moonglow* over a somber poem titled: *Home.* Was dying thoughts of old transportee, his discovery as he is about to leave that Luna is his beloved home. Language was simple, rhyme scheme unforced, only thing faintly subversive was conclusion on

part of dying man that even many Wardens he has endured was not too high a price.

Doubt if *Moonglow's* editors thought twice. Was good stuff, they published.

Alvarez turned editorial office inside out trying to get a line back to "Adam Selene." Issue had been on sale half a lunar before Alvarez noticed it, or had it called to his attention; we were fretted, we *wanted* that by-line noticed. We were much pleased with way Alvarez oscillated when he saw it.

Editors were unable to help fink boss. They told him truth: Poem had come in by mail. Did they have it? Yes, surely . . . sorry, no envelope; they were never saved. After a long time Alvarez left, flanked by four Dragoons he had fetched along for his health.

Hope he enjoyed studying that sheet of paper. Was piece of Adam Selene's business stationery:

SELENE ASSOCIATES
Luna City
Investments — Office of the Chairman
Old Dome

— and under that was typed *Home,* by Adam Selene, etc.

Any fingerprints were added after it left us. Had been typed on Underwood Office Electrostator, commonest model in Luna. Even so, were not too many as are importado; a scientific detective could have identified machine. Would have found it in Luna City office of Lunar Authority. Machines, should say, as we found six of model in office and used them in rotation, five words and move to next. Cost Wyoh and self sleep and too much risk even though Mike listened at every phone, ready to warn. Never did it that way again. Alvarez was not a scientific detective.

XX

I had too much to do. Could not neglect customers. Party work took more time even though all possible was delegated. But decisions had to be made on endless things and messages passed up and down. Had to squeeze in hours of heavy exercise, wearing weights, and dasn't arrange permission to use centrifuge at Complex, one used by earthworm scientists to stretch time in Luna. While had used it before, this time could not advertise that I was getting in shape for Earthside.

Exercising without centrifuge is less efficient and was especially boring because did not know there would be need for it. But according to Mike thirty per cent of ways events could fall required some Loonie, able to speak for Party, to make trip to Terra.

Could not see myself as an ambassador, don't have education and not diplomatic. Prof was obvious choice of those recruited or likely to be. But Prof was old, might not live to land Earthside. Mike told us that a man of Prof's age, body type, etc., had less than 40% chance of reaching Terra alive.

But Prof did gaily undertake strenuous training to let him make most of his poor chances. So what

could do but put on weights and get to work, ready to go and take his place if old heart clicked off? Wyoh did same, on assumption that something might keep me from going. She really did it to share misery. Wyoh always used gallantry in place of logic.

On top of business, Party Work and exercise was farming. We had lost three sons by marriage while gaining two fine lads, Frank and Ali. Then Greg went to work for LuNoHoCo, as boss drillman on new catapult.

Was needful. Much skull sweat went into hiring construction crew. We could use non-Party men for most jobs, but key spots had to be Party men as competent as they were politically reliable. Greg did not want to go; our farm needed him and he did not like to leave his congregation. But accepted.

That made me again a valet, part time, to pigs and chickens. Hans is a good farmer, picked up load and worked enough for two men. But Greg had been farm manager since Grandpaw retired. New responsibility worried Hans. Should have been mine, being senior, but Hans was better farmer and closer to it; always been expected he would succeed Greg some day. So I backed him up by agreeing with his opinions and tried to be half a farm hand in hours I could squeeze. Left no time to scratch.

Late in February I was returning from long trip, Novylen, Tycho Under, Churchill. New tube had just been completed across Sinus Medii, so I went on to Hong Kong in Luna — business, and did make contacts now that I could promise emergency service. Fact that Endsville-Beluthihatchie bus ran only during dark semi-lunar had made impossible before.

But business was cover for politics. Liaison with Hong Kong had been thin.

Wyoh had done well by phone. Second member of her cell was an old comrade — Comrade "Clayton" — who not only had clean bill of health in Alvarez's File Zebra but also stood high in Wyoh's estimation. Clayton was briefed on policies, warned of bad apples, encouraged to start cell system while leaving old organization untouched. Wyoh told him to keep his membership, as before.

But phone isn't face-to-face. Hong Kong should have been our stronghold. Was less tied to Authority as its utilities were not controlled from Complex; was less dependent because lack (until recently) of tube transport had made selling at catapult head less inviting; was stronger financially as Bank of Hong Kong Luna notes were better money than Authority scrip.

I suppose Hong Kong dollars weren't "money" in some legal sense. Authority would not accept them; times I went Earthside had to buy Authority scrip to pay for ticket. But what I carried was Hong Kong dollars as could be traded Earthside at a small discount whereas scrip was nearly worthless there. Money or not, Hong Kong Bank notes were backed by honest Chinee

bankers instead of being fiat of bureaucracy. One hundred Hong Kong dollars was 31.1 grams of gold (old troy ounce) payable on demand at home office — and they did keep gold there, fetched up from Australia. Or you could deman commodities: non-potable water, steel of defined grade, heavy water of power plant specs, other things. Could buy these with scrip too, but Authority's prices kept changing, upward.

I'm no fiscal theorist. Time Mike tried to explain I got headache. Simply know we were glad to lay hands on this non-money whereas scrip one accepted reluctantly and not just because we hated Authority.

Hong Kong should have been Party's stronghold. But was not. We had decided that I should risk face-to-face there, letting some know my identity, as a man with one arm can't disguise easily. Was risk that would jeopardize not only me but could lead to Wyoh, Mum, Greg and Sidris if I took a fall. But who said revolution was safe?

Comrade "Clayton" turned out to be a young Japanese — not too young, but all look young till suddenly look old. He was not all Japanese — Malay and other things — but had Japanese name and household had Japanese manners. 'Giri' and 'gimu' controlled and it was my good fortune that he owed much gimu to Wyoh.

Clayton was not convict ancestry; his people had been "volunteers" marched aboard ship at gunpoint during time Great China consolidated Earthside empire. I didn't hold it against him. He hated Warden as bitterly as any old lag.

Met him first at a teahouse—taproom to us L-City types — and for two hours we talked everything but politics. He made up mind about me, took me home. My only complaint about Japanese hospitality is those chin-high baths are too bleeding hot.

But turned out I was not jeopardized. Mama-San was as skilled at makeup as Sidris, my social arm is very convincing, and a kimono covered its seam. Met four cells in two days, as "Comrade Bork" and wearing makeup and kimono and tabi and, if a spy was among them, don't think he could identify Manuel O'Kelly. I had gone there intensely briefed, endless figures and projections, and talked about just one thing: famine in '82, six years away. "You people are lucky, won't be hit so soon. But now with new tube, you are going to see more and more of your people turning to wheat and rice and shipping it to catapult head. Your time will come."

They were impressed. Old organization, as I saw it and from what I heard, relied on oratory, whoop-it-up music and emotion, much like church. I simply said, "There it is, comrades. Check those figures; I'll leave them with you."

Met one comrade separately. A Chinee engineer given a good look at anything can figure way to make it. Asked this one if he had ever seen a laser gun small enough to carry like a rifle. He had not. Mentioned that passport system made it difficult to smuggle these

days. He said thoughtfully that jewels ought not to be hard — and he would be in Luna City next week to see his cousin. I said Uncle Adam would be pleased to hear from him.

All in all was productive trip.

On my way back I stopped in Novylen to check an old-fashioned punched-tape "Foreman" I had overhauled earlier, had lunch afterwards, ran into my father.

He and I were friendly but didn't matter if we let a couple of years go by. We talked through a sandwich and beer and as I got up he said, "Nice to see you, Mannie. Free Luna!"

I echoed, too startled not to. My old man was as cynically non-political as you could find; if he would say that in public, campaign must be taking hold.

So I arrived in L-City cheered up and not too tired, having napped from Torricelli. Took Belt from Tube South, then dropped down through Bottom Alley, avoiding Causeway crowds and heading home. Went into Judge Brody's courtroom as I came to it, meaning to say hello. Brody is old friend and we have amputation in common. After he lost a leg he set up as a judge and was quite successful; was not another judge in L-City at that time who did not have side business, at least make book or sell insurance.

If two people brought a quarrel to Brody and he could not get them to agree that his settlement was just, he would return fees and, if they fought, referee their duel without charging — and still be trying to persuade them not to use knives right up to squaring off.

He wasn't in his courtroom though plug hat was on desk. I knew he was probably in one of the bars nearby.

Did not know, however, that this would mean that the life of our revolution would, literally, be put into my hands within next few minutes. For as I started to leave was checked by groups coming in. Stilyagi types. Had with them a girl and an older man. Wished to kill the man; had come to get judge's permission.

TO BE CONTINUED

MR. JESTER

by FRED SABERHAGEN

Men had forgotten laughter . . . and the Berserkers had never known it!

At last the berserker machines' age-long raid across the galaxy had brought them against a life-form too strong to be wiped out of the way — a race of two-legged creatures who were clever and stubborn, far-scattered and well-armed, sprung from a planet that the ancient Berserker-Builders had never known existed.

Defeated in battle, the berserker-computers saw that refitting, repair, and the construction of new machines were necessary. They sought out sunless, hidden places, where minerals were available but where men — who were now as often the hunters as the hunted — were not likely to show up. And in such secret places they set up automated shipyards.

To one such concealed shipyard, seeking repair, there came a berserker.

Its spherical hull, thirty miles in diameter, had been torn open in a recent battle, and it had suffered severe internal damage. It collapsed rather than landed on the dark planetoid, beside the half-finished hull of a new machine. Before emergency repairs could be started, the engines of the damaged machine failed, its emergency power failed, and like a wounded living thing it died.

The shipyard-computers were capable of wide improvisation. They surveyed the extent of the damage, weighed various courses of action, and then swiftly began to cannibalize. Instead of embodying the deadly purpose of the new machine in a new forcefield brain, following the replication-instructions of the Builders, they took the old brain with many another part from the wreck.

The Builders had not foreseen that this might happen, and so the

shipyard-computers did not know that in the forcefield brain of each original berserker there was a safety switch. The switch was there because the original machines had been launched by living Builders, who had wanted to survive while testing their own life-destroying creations.

When the brain was moved from one hull to another, the safety switch reset itself.

The old brain awoke in control of a mighty new hull, of weapons that could sterilize a planet, new engines to hurl the whole mass far faster than light.

But there was no Builder present, and no timer, to turn off the simple safety switch.

The jester — the accused jester, but he was as good as convicted — was on the carpet. He stood facing a row of stiff necks and granite faces, behind a long table. On either side of him was a tridi camera. His offenses had been so unusually offensive that the Committee of Duly Constituted Authority themselves, the very rulers of Planet A, were sitting to pass judgment on his case.

Perhaps the Committee members had another reason for this session: Planet-wide elections were due in a month. No member wanted to miss the chance for a non-political tridi appearance that would not have to be offset by a grant of equal time for the new Liberal Party opposition.

"I have this further item of evidence to present," the Minister of Communication was saying, from his seat on the Committee side of the long table. He held up what appeared at first to be an official pedestrian-control sign, having steady black letters on a blank white background. But the sign read: UNAUTHORIZED PERSONNEL ONLY.

"When a sign is put up," said the MiniComm, "the first day, a lot of people read it." He paused, listening to himself. "That is, a new sign on a busy pedestrian ramp is naturally given great attention. Now in this sign, the semantic content of the first word is confusing in its context."

The President of the Committee — and of the planet — cleared his throat warningly. The MiniComm's fondness for stating truisms made him sound more stupid than he actually was. It seemed unlikely that the Liberals were going to present any serious challenge at the polls, but there was no point in giving them encouragement.

The lady member of the Committee, the Minister of Education, waved her lorgnette in chubby fingers, seeking attention. She inquired: "Has anyone computed the cost to us all in work-hours of this confusing sign?"

"We're working on it," growled the Minister of Labor, hitching up an overall strap. He glared at the accused. "You do admit causing this sign to be posted?"

"I do." The accused was remembering how so many of the pedestrians on the crowded ramp had laughed, and how the day had brightened for them and for him. What did work-hours matter? No one on Planet A was starving any longer.

"You admit that you have never done a thing, really, for your planet or your people?" Thus spoke the Minister of Defense, a tall, powerful, bemedaled figure, armed with a ritual pistol.

"I don't admit that," said the accused bluntly. "I've tried to brighten people's lives." He had no hope of official leniency anyway. And he knew no one was going to take him offstage and beat him; the beating of prisoners was not authorized.

"Do you even now attempt to defend levity?" The Minister of Philosophy took his ritual pipe from his mouth, and smiled in the grim permissible fashion, baring his teeth at the challenge of the Universe. "Life is a jest, true; but a grim jest. You have lost sight of that. For years you have harassed society, leading people to drug themselves with levity instead of facing the bitter realities of existence. The pictures found in your possession could do only harm."

The President's hand moved to the video recording cube that lay on the table before him, neatly labeled as evidence. In his droning voice the President asked: "You do admit that these pictures are yours? That you used them to try to get other people to — yield to mirth?"

The prisoner nodded. They could prove everything: he had waived his right to a full legal defense, wanting only to get the trial over with. "Yes, I filled that cube from tapes and films I sneaked out of libraries and archives. Yes, I showed people its contents."

There was a murmur from the Committee. The Minister of Diet, a skeletal figure with a repellent glow of health in his granite cheeks, raised a hand. "Inasmuch as the accused seems certain to be convicted, may I request in advance that he be paroled in my custody? In his earlier testimony he admitted that one of his first acts of deviation was the avoidance of his community mess. I believe I could demonstrate, using this man, the wonderful effect on character of dietary discipline —"

"I refuse!" the accused interrupted loudly. It seemed to him that the words ascended, growling, from his stomach.

The President rose, to adroitly fill what might have become an awkward silence. "If no member of the Committee has any further questions —? Then let us vote. Is the accused guilty as charged on all counts?"

To the accused, standing with weary eyes closed, the vote sounded like one voice passing along the table: "Guilty. Guilty. Guilty . . ."

After a brief whispered conference with the Minister of Defense, the President passed sentence, a hint of satisfaction in his drone.

"Having rejected a duly authorized parole, the convicted jester will be placed under the orders of the Minister of Defense, and sent to solitary beacon duty out on the Approaches, for an indefinite period. This will remove his disruptive influence, while at the same time constraining him to contribute positively to society."

For decades Planet A and its sun had been cut off from all but oc-

casional contact with the rest of the galaxy, by a vast interstellar dust storm that was due to go on for more decades at least. So the positive contribution to society might be doubted. But it seemed that the beacon stations could be used as isolation prisons without imperilling nonexistent shipping, or weakening defense against an enemy that never came.

"One thing more," added the President. "I direct that this recording cube be securely fastened around your neck on a monomolecular cord, in such a way that you may put the cube into a viewer when you wish. You will be alone on the station and no other off-duty activity will be available."

The President faced toward a tridi camera. "Let me assure the public that I derive no satisfaction from imposing a punishment that may seem harsh, and even — imaginative. But in recent years a dangerous levity has spread among some few of our people; a levity all too readily tolerated by some supposedly more solid citizens."

Having gotten in a dig at the newly-burgeoning Liberals, a dig he might hope to claim was non-political in intent, the President faced back to the jester. "A robot will go with you to the beacon, to assist you in your duties and see to your physical safety. I assure you the robot will not be tempted into mirth."

The robot took the convicted jester out in a little ship, so far out that Planet A vanished and its sun shrank to a point of brilliance.

Out on the edge of the great dusty night of the Approaches, they drew near the putative location of station Z-45, which the MiniDef had selected as being the most dismal and forsaken of those unmanned at present.

There was indeed a metallic object where beacon Z-45 was supposed to be; but when the robot and jester got closer, they saw the object was a sphere some forty miles in diameter. There were a few little bits and pieces floating about it that just might be remnants of Z-45. Just then the sphere evidently sighted their ship, for with startling speed it began to move toward them.

Once robots are told what berserkers look like, they do not forget, nor do robots grow slow and careless. But radio equipment can be sloppily maintained, and ever the dust drifts in around the edges of the system of Planet A, impeding radio signals. Before the MiniDef's robot could successfully broadcast an alarm, the forty-mile sphere was close enough to blot out half the sky, and its grip of metal and force was tight upon the little ship.

The jester kept his eyes shut through a good deal of what followed. If they had sent him out here to stop him laughing they had chosen the right spot.

He squeezed his eyelids tighter, and put his fingers in his ears, as the berserker's commensal machines smashed their way into his little ship and carried him off. He never did find out what they did with his robot guard.

When things grew quiet, and he

felt gravity and good air and pleasant warmth again, he decided that keeping his eyes shut was worse than knowing whatever they might tell him. His first cautious peek showed him that he was in a large shadowy room, that at least held no visible menace.

When he stirred, a squeaky monotonous voice somewhere above him said: "My memory bank tells me that you are a protoplasmic computing unit, probably capable of understanding this language. Do you understand?"

"Me?" The jester looked up into the shadows, but could not see the speaker. "Yes, I understand you." Most former colonies of Earth still spoke close variants of the one language carried out from Sol in the years before the berserker-war. "But who are you?" the jester ventured.

"I am what this language calls a berserker."

The jester had taken shamefully little interest in galactic affairs, but that word frightened even him. He stuttered: "That means you're a kind of automated warship?"

There was a pause. "I am not sure," said the squeaky, droning voice. The tone sounded almost as if the President was hiding up there in the rafters. "War may be related to my purpose, but my purpose is still partially unclear to me, for my construction was never quite completed. For a time I waited where I was built, for I was sure some final step had been left undone. At last I moved, to try to learn more about my purpose. Approaching this sun, I found a transmitting device which I have disassembled. But I have learned no more about my purpose."

The jester sat on the soft, comfortable floor. The more he remembered about berserkers, the more he trembled. He said: "I see. Or perhaps I begin to see. What *do* you know of your purpose?"

"My purpose is to destroy all life, wherever I can find it."

The jester cowered down. Then he asked in a low voice: "What is unclear about that?"

The berserker answered his question with two of its own: "What is life? And how is it destroyed?"

After half a minute there came a sound that the berserker-computers could not identify. It issued from the protoplasmic computing-unit, but if it was speech it was in a language unknown to the berserker.

"What is the sound you make?" the machine asked.

The jester gasped for breath. "It's laughter! Oh, laughter. So. You were unfinished." He shuddered, the terror of his position coming back to sober him. But then he once more burst out giggling; the situation was too ridiculous.

"What is life?" he said at last. "I'll tell you. Life is a great grim grayness, and it inflicts fright and pain and loneliness upon all who experience it. And you want to know how to destroy it? Well, I don't think you can. But I'll tell you the best way to fight life — with laughter. As long as we fight it that way, it can't overcome us."

The machine asked: "Must I

laugh, to prevent this great-grim-grayness from enveloping me?"

The jester thought. "No, you are a machine. You are not—" he caught himself— "protoplasmic. Fright and pain and loneliness will never bother you."

"Nothing bothers me. Where will I find life, and how will I make laughter to fight it?"

The jester was suddenly conscious of the weight of the cube that still hung from his neck. "Let me think for a while," he said.

After a few minutes he stood up. "If you have a viewer of the kind men use, I can show you how laughter is created. And perhaps I can guide you to a place where life is. By the way, can you cut this cord from my neck? Without hurting me, that is!"

A few weeks later, in the main War Room of Planet A, the somnolence of decades was abruptly shattered. Robots bellowed and buzzed and flashed, and those that were mobile scurried about. In five minutes or so they managed to rouse their human overseers, who hurried about, tightening their belts and stuttering.

"This is a *practice* alert, isn't it?" the Officer of the Day kept hoping aloud. "Someone's running some kind of a test? Someone?" He was beginning to squeak like a berserker himself.

He got down on all fours, removed a panel from the base of the biggest robot and peered inside, hoping to discover something causing a malfunction. Unfortunately, he knew nothing about robotics; recalling this, he replaced the panel and jumped to his feet. He really knew nothing about planet defense, either, and recalling *this* was enough to send him on a screaming run for help.

So there was no resistance, effective or otherwise. But there was no attack, either.

The forty-mile sphere, unopposed, came down to hove directly above Capital City, low enough for its shadow to send a lot of puzzled birds to nest at noon. Men and birds alike lost many hours of productive work that day; somehow it made less difference than most of the men expected. The days were past when only the grimmest attention to duty let the human race survive on Planet A, though most of the planet did not yet realize it.

"Tell the President to hurry up," demanded the jester's image, from a viewscreen in the no-longer somnolent War Room. "Tell him it's urgent that I talk to him."

The President, breathing heavily, had just entered. "I am here. I recognize you, and I remember your trial."

"Odd, so do I."

"Have you now stooped to treason? Be assured that if you have led a berserker to us you can expect no mercy from your government."

The image made a forbidden noise, a staccato sound from an open mouth, head thrown back. "Oh, please, mighty President! Even I know our Ministry of Defense is a j-o-k-e, if you will pardon an obscene word. It's a catchbasin for ex-

ties and incompetents. So I come to offer mercy, not ask it. Also, I have decided to legally take the name of Jester. Kindly continue to apply it to me."

"We have nothing to say to you!" barked the Minister of Defense. He was purple granite, having entered just in time to hear his Ministry insulted.

"We have no objection to talking to you!" contradicted the President, hastily. Having failed to overawe the Jester through a viewscreen, he could now almost feel the berserker's weight upon his head.

"Then let us talk," said Jester's image. "But not so privately. This is what I want."

What he wanted, he said, was a face-to-face parley with the Committee, to be broadcast live on planet-wide tridi. He announced that he would come "properly attended" to the conference. And he gave assurance that the berserker was under his full control, though he did not explain how. It, he said, would not *start* any shooting.

The Minister of Defense was not ready to start anything. But he and his aides hastily made secret plans.

Like almost every other citizen, the presidential candidate of the Liberal party settled himself before a tridi on the fateful evening, to watch the confrontation. He had an air of hopefulness, for any sudden event may bring hope to an underdog politician.

Few others on the planet saw anything encouraging in the berserker's descent, but still there was no mass panic. Berserkers and war were unreal things to the long-isolated people of Planet A.

"Are we ready?" asked the Jester nervously, looking over the mechanical delegation that was about to board a launch with him for the descent to Capital City.

"What you have ordered, I have done," squeaked the berserker-voice from the shadows above.

"Remember," Jester cautioned, "the protoplasmic-units down there are much under the influence of life. So ignore whatever they say. Be careful not to hurt them, but outside of that you can improvise within my general plan."

"All this is in my memory from your previous orders," said the machine patiently.

"Then let's go." Jester straightened his shoulders. "Bring me my cloak!"

The brilliantly lighted interior of Capital City's great Meeting Hall displayed a kind of rigid, rectilinear beauty. In the center of the Hall there had been placed a long, polished table, flanked on opposing sides by chairs.

Precisely at the appointed time, the watching millions saw one set of entrance doors swing mathematically open. In marched a dozen human heralds, their faces looking almost robotic under bearskin helmets. They halted with a single snap. Their trumpet-tucket rang out clearly.

To the taped strains of *Pomp and Circumstance,* the President, in the full dignity of his cloak of office, then made his entrance.

He moved at the pace of a man marching to his own execution, but his was the slowness of dignity, not that of fear. The Committee had overruled the purple protestations of the MiniDef, and convinced themselves that the military danger was small. Real berserkers did not ask to parley, they slaughtered when they could. Somehow the Committee could not take Jester seriously, any more than they could laugh at him. But until they were sure they had him again under their control they would humor him.

The granite-faced Minister entered in a double file behind the President. It took almost five minutes of *Pomp and Circumstance* for them all to position themselves.

A launch had been seen to descend from the berserker, and vehicles had rolled from the launch to the Meeting Hall. It was presumed that Jester was ready, and the cameras pivoted dutifully to face the entrance reserved for them.

Just at the appointed time, the doors of that entrance swung mathematically open, and a dozen man-sized machines entered. They were heralds, for they wore bearskin helmets, and each carried a bright, brassy trumpet.

All but one, who wore a coonskin cap, marched a half-pace out of step, and was armed with a slide trombone.

The mechanical tucket was a faithful copy of the human one — almost. The slide-trombonist faltered at the end, and one long sour note trailed away.

Giving an impression of slow mechanical horror, the berserker-heralds looked at one another. Then one by one their heads turned until all their lenses were focused upon the trombonist.

It — almost it seemed the figure must be *he* — looked this way and that. Tapped the trombone, as if to clear it of some defect. Paused.

Watching, the President was seized by the first pang of a great horror. In the evidence against the Jester, the obscene mirth-provoking evidence, there had been a film of an Earthman of ancient time, a balding comic violinist, who had had the skill to pause like that, just pause, and evoke from his filmed audience great gales of . . .

Twice more the robot heralds blew. And twice more the sour note was sounded. When the third attempt failed, the eleven straight-robots looked at one another and nodded agreement.

Then with robotic speed they drew concealed weapons and shot holes in the offender.

All across the planet the dike of tension was cracking, dribbles and spurts of laughter forcing through. The dike began to collapse completely as the trombonist was borne solemnly away by a pair of his fellows, his shattered horn clasped lily-fashion on his iron breast.

But no one in the Meeting Hall was laughing. The Minister of Defense made an innocent-looking gesture, calling off a tentative plan, calling it *off*. There was to be no attempt to seize the Jester, for the berserker-robot-heralds or whatever

they were seemed likely to perform very capably as bodyguards.

As soon as the riddled herald had been carried out, Jester entered. *Pomp and Circumstance* began belatedly as with the bearing of a king he moved to his position at the center of the table, opposite the President. Like the President, the Jester wore an elegant cloak, clasped in front, falling to his ankles. Those that filed in behind him, in the position of aides, were also richly dressed.

And each of them was a metallic parody, in face and shape, of one of the Ministers of the Committee.

When the plump robotic analogue of the Minister of Education peered through a lorgnette at the tridi camera, the watching populace turned, in unheard-of millions, to laughter. Those who might be outraged later, remembering, laughed now in helpless approval of seeming danger turned to farce. All but the very grimmest smiled.

The Jester-king doffed his cape with a flourish. Beneath it he wore only a preposterous bathing-suit. In reply to the President's coldly formal greeting — the President could not be shaken by anything short of a physical attack — the Jester thoughtfully pursed his lips, then opened them and blew a gummy substance out into a large pink bubble.

The President maintained his unintentional role of slow-burning straight man, ably supported by all the Committee save one. The Minister of Defense turned his back on the farce and marched to an exit.

He found two metallic heralds planted before the door, effectively blocking it. Glaring at them, the MiniDef barked an order to move. The metal figures flipped him a comic salute, but didn't move.

Brave in his anger, the MiniDef tried futilely to shove his way past the berserker-heralds. Dodging another salute, he looked round at the sound of great clomping footsteps. His berserker-counterpart was marching toward him across the Hall. It was a clear foot taller than he, and its barrel chest was armored with a double layer of jangling medals.

Before the MiniDef paused to consider consequences, his hand had moved to his sidearm. But his metal parody was far faster on the draw; it hauled out a grotesque cannon with a fist-sized bore, and fire instantly.

"Gah!" The MiniDef staggered back, the world gone red . . . and then he found himself wiping from his face something that tasted suspiciously like tomato.

The cannon had propelled a whole fruit, or a convincing imitation, skin and all.

The MiniComm jumped to his feet, and began to expound the idea that the proceedings were becoming frivolous. His counterpart also rose, and replied with a burst of gabble in speed-falsetto.

The pseudo-Minister of Philosophy rose as if to speak, was pricked with a long pin by a prankish herald, and jetted fluttering through the air, a balloon collapsing in flight. At that the human Committee fell into babel, into panic.

Under the direction of the metal MiniDiet, the real one, arch-villain to the lower masses, began to take unwilling part in a demonstration of dietary discipline. Machines gripped him, spoon-fed him grim gray food, napkined him, squirted drink into his mouth — and then, as if unintentionally, they gradually fell out of synch with spoon and squirt, their aim becoming less and less accurate.

Only the President still stood rooted in dignity. He had one hand cautiously in his trousers pocket, for he had felt a sly robotic touch, and had reason to suspect that his suspenders had been cut.

As a tomato grazed his nose, and the MiniDiet writhed and choked in the grip of his remorseless feeders, balanced nutrients running from his ears, the President closed his eyes.

Jester was, after all, only a self-taught amateur working without a visible audience to play to. He was unable to calculate a climax for the show. So when he ran out of jokes he simply called his minions to his side, waved good-by to the tridi cameras and exited.

Outside the Hall, he was much encouraged by the cheers and laughter he received from the crowds fast-gathering in the streets. He had his machines entertain them with an improvised chase-sequence back to the launch parked on the edge of Capital City.

He was about to board the launch, return to the berserker and await developments, when a small group of men hurried out of the crowd, calling to him. "Mr. Jester!"

The performer could now afford to relax and laugh himself. "I like the sound of that name! What can I do for you gentlemen?"

They hurried up to him, smiling. The one who seemed to be their leader said: "Provided you get rid of this berserker or whatever it is, harmlessly — you can join the Liberal party ticket. As Vice-Presidential candidate."

Another of them said: "Stay, hear us out. As a political candidate you're immune from arrest while the campaign's on. And after the election, judging by what I've seen tonight, you'll be Vice-President!"

He had to listen for some minutes before he could believe they were serious.

He protested: "But I only wanted to have some fun with them, to shake them up a bit."

"You're a catalyst, Mr. Jester. You've formed a rallying point. You've shaken up the whole planet and made it think."

Jester accepted the Liberals' offer at last. They were still sitting about in front of the launch, talking and planning, when the light of Planet A's moon fell full and sudden upon them.

Looking up, they saw the vast bulk of the berserker dwindling into the heavens, vanishing toward the stars in eerie silence. Cloud streamers went aurora in the upper atmosphere to honor its departure.

"I don't know," Jester said, over and over, responding to a dozen excited questions. "I don't know." He looked at the sky, puzzled as anyone else. The edge of fear came

back. The robotic Committee and heralds, which had been controlled from the berserker, began one by one to collapse like dying men.

Suddenly the heavens were briefly alight with a gigantic splashing flare that passed like lightning from east to west, not breaking the silence of the stars. Ten minutes later came the first news bulletin: The berserker had been destroyed.

Then came the President, who was close to the brink of showing emotion. He announced that under the heroic personal leadership of the Minister of Defense, the few gallant warships of Planet A had met and defeated, utterly annihilated, the menace. Not a man had been lost, though the MiniDef's flagship was thought to be heavily damaged.

When he heard that his great machine-ally had been destroyed, Jester felt a pang of something like sorrow. But the pang was quickly obliterated in a greater joy. No one had been hurt, after all. Overcome with relief, Jester looked away from the tridi for a moment.

He missed the climactic moment of the speech, which came when the President forgetfully removed both hands from his pockets.

The Minister of Defense — today the new Presidential candidate of a Conservative party stirred to grim enthusiasm by his exploit of the night before — was puzzled by the reactions of some people, who seemed to think he had merely spoiled a jest instead of saving the planet. As if spoiling a jest was not a good thing in itself!

On this busiest of days the MiniDef allowed himself time to visit Liberal headquarters to do a bit of gloating. Graciously he delivered to the opposition leaders what was already becoming his standard speech.

"When it answered my challenge and came up to fight, we went in with a standard englobement pattern — like hummingbirds round a vulture, I suppose you might say. And did you really think it was jesting? Let me tell you, that berserker peeled away the defensive fields from my ship like they were nothing. And then it launched this ghastly thing at me, a kind of disk. My gunners were a little rusty, maybe, anyway they couldn't stop it and it hit us.

"I don't mind saying, I thought I'd bought the farm right then. My ship's still hanging in orbit for decontamination, I'm afraid I'll get word any minute that the metal's melting or something — anyway, we sailed right through and hit the bandit with everything we had. I can't say too much for my crew. One thing I don't quite understand; when our missiles struck that berserker just went poof, as if it had no defense up at all. Yes?"

"Call for you, Minister," said an aide.

"Thank you." The MiniDef listened to the phone, and his smile left him. His form went rigid. "Analysis of the weapon shows what? Synthetic proteins and water?"

He jumped to his feet, glaring upward as if to pierce the ceiling and see the ship in orbit. "What do you mean — no more than a giant custard pie?" END

A PLANET LIKE HEAVEN

by MURRAY LEINSTER

ILLUSTRATED BY ADKINS

From Earth, the way to double profits was clear — just work the harvesters twice as hard!

I

It began while the huge, gray-skinned workers docilely loaded *kamun*-wood logs into the Dorade Corporation ship.

A man from the Home Office had come out from Earth to see that all the orders from home were being efficiently carried out. Chalmers showed him the sights of the planet. He'd waked the visitor early so he could see sunrise on Dorade, which was remarkable, and the staff living-quarters, which were not. He showed the electrified-wire stockade, which any of the imprisoned workers could have broken through in an instant, except that he'd been conditioned to believe it impregnable. There were the fields where big workers — under human supervision, of course — grew the food for themselves and the forest-trained mem-

bers of their race. And near sundown Chalmers took his guest to the edge of the Forest to see a *kamun* tree.

Kamun trees, of course, were the reason for the existence of the Corporation, and the electrified fence — but there were also small stockades built solidly of logs — and everything else that men had done on Dorade.

The Corporation ship was almost fully loaded by then. It should be ready to lift off within the hour. The last act of the Home Office man would be to give Chalmers new orders for the conduct of affairs here. The Home Office always sent orders. And Chalmers always got them too late in each ship-visit to be able to protest any of them. This was Corporation policy.

But the man from home hadn't yet seen a *kamun* tree. So Chalmers took him to the edge of the Forest.

The sunset colors were very beautiful and the Forest was beautiful, too, in the many-tinted light. Some of the trees looked familiar — they weren't — and some were surprising. But the Home Office man had to have a *kamun* tree singled out for him. It wasn't at all conspicuous.

Chalmers pointed.

"There's one," he said. "We don't go into the Forest ourselves. The damned things are too quick. If one caught you, you'd have to use a blaster to get away — if you got away! But the Corporation doesn't like trees worth some thousands of credits to be blasted."

The man from Earth murmured politely. The *kamun* tree was quite small and looked ordinary. There were more visible roots about its base than usual, but there are trees on Earth like that.

"I'd like to see one in action," he said.

"I wouldn't," said Chalmers.

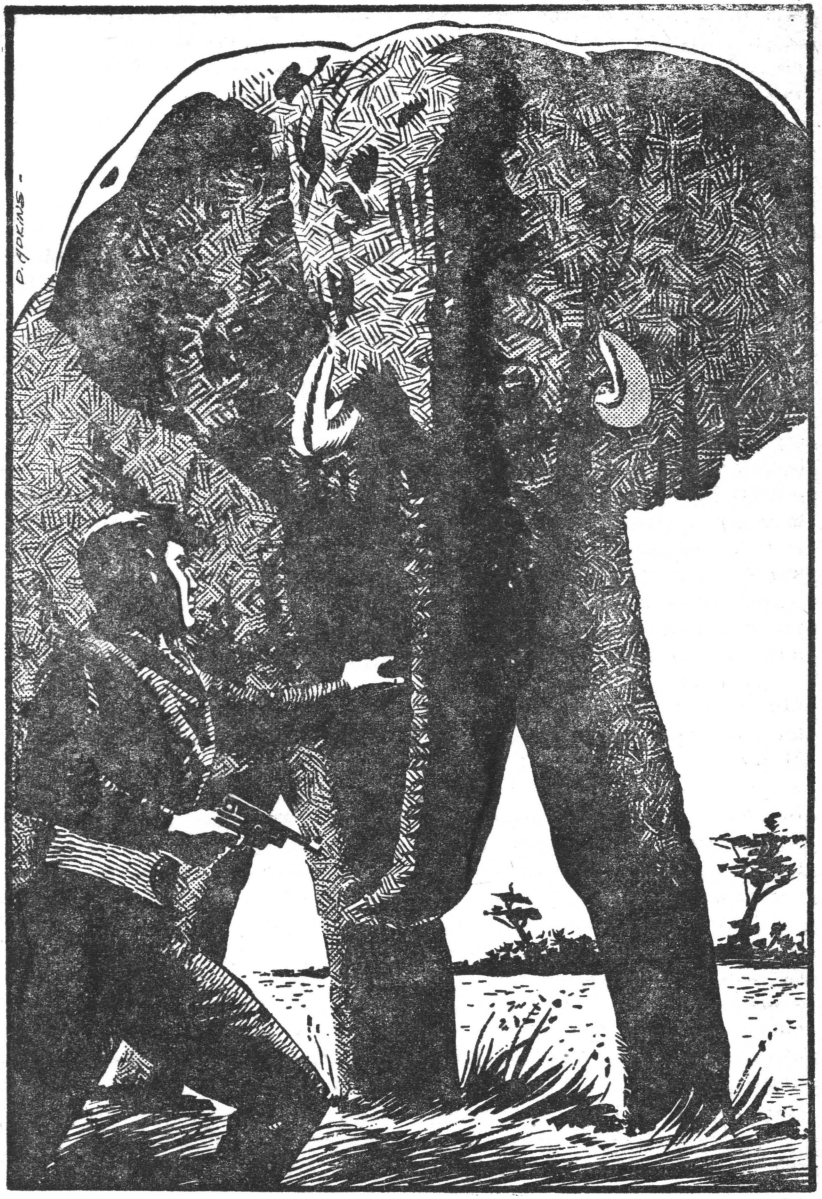
He waited for the Home Office man to become satisfied with looking. Then, deep in the Forest, there was a stirring. Two of the Dorade Corporation's workers showed, in speckles of sunset light among the trees.

Fewer than one in a thousand of the Forest growths were *kamun trees,* of course. The workers had to hunt for them, inside the electrified fence that surrounded the whole Forest and kept them imprisoned with their work. He nodded at the two huge creatures as they approached.

"Workers," he explained. "The trees hate them. You may see something."

But he didn't expect it. The man from Earth watched. The two ungraceful beasts came lumbering into plain view. The larger one — the male — stood a good ten feet tall. He carried what seemed to be a four-inch log, carefully balanced in the trunk that served him in the place of hands. The female was smaller. She followed closely behind her mate. The male picked his way deliberately, avoiding what few *kamun* trees grew hereabouts

Other workers appeared. They always returned at sunset. They showed up in pairs, of whom one invariably carried a *kamun* log. They



came slowly and clumsily toward the warehouse and the worker's stalls nearby.

"We don't go into the Forest ourselves," repeated Chalmers. "The workers learn that they're to look for *kamun* trees just at the stage when the foliage has all dropped off. That's when the air-roots — the constrictor-roots, you know — dig their free ends into the ground to become new trees. That's the time for the logs to be taken. But—"

He stopped.

The nearer, larger worker turned deliberately to avoid the *kamun* tree Chalmers had pointed out. The female behind him moved abstractly ahead for four or five paces. Then—

The visible, above-soil roots of the *kamun* tree lashed out viciously, like coiled springs. Two — three — four of them struck savagely. One coiled about the female's leg. One seemed to claw at her wall-like body. Another gripped and tore at a huge, flopping ear. Thorns on the root tore at the flesh. Blood flowed. She squealed.

The big male whirled with incredible agility for one of his bulk. He dropped his burden and rushed at the *kamun* tree. He tore at the roots assailing the smaller beast, his mate. Other roots struck at him. He fought them furiously. They were like sinewy, thorny snakes writhing to clutch and strangle him. The female broke free. The tree turned its full attention to him.

But he'd gained some slack. Now he lunged ahead. The roots about him seemed to stretch. If they held, by sheer weight and impetus he might uproot the tree.

But the roots snapped away, torn free. The tree seemed to quiver with rage. Its roots lashed the air crazily. The male worker lumbered to the other.

There were rasped-raw wales on her hide. She seemed to whimper. The male went back to the log he'd dropped. He fumbled at it with his singularly flexible trunk. He moved ferociously toward the tree, raising the ten-foot log like a club. He brought it down.

Chalmers went running to stop him. He shouted.

"Hup! Jogo! Hup! Hup!"

Something glistened in his hand. There was a snapping sound. The big worker flinched.

The roots of the *kamun* tree seemed stunned. They writhed only feebly. Chalmers shouted again, threatening the big bull worker with the glistening thing in his hand.

The worker dropped the log he'd wielded from one end. He picked it up again at the middle. He went lumbering to his mate. He rumbled at her. The two of them went slowly, ponderously, heavily to put the log where they knew such things should be delivered. The other workers, arriving, formed a long shambling line to deliver their logs, too.

He put away the sub-blaster all humans on Dorade carried to control the workers. They stung, and badly, but they did no real damage. They were much more effective than whips for creatures as huge and relatively as intelligent as the working-force on Dorade.

"That's Jogo," said Chalmers sourly. "He's getting too smart! We teach them to use clubs when they take the logs, if it's necessary to subdue roots not firmly fixed. But he was going to club the tree for attacking his mate! That's going too far!"

The man from Earth stared at the quivering, almost-flaccid air-roots.

"Is the tree dead?"

"No," said Chalmers annoyedly. "But he'll kill it if he can."

The Home Office man said:

"I'll report this at the Home Office. They'll probably issue some order to cover such matters."

"Yes," said Chalmers sourly "They probably will!"

He saw a crewman coming to report that the Corporation ship was ready to lift off. He turned toward the ship.

He shook hands politely with the man from Earth before the ship lifted. He received the packet of orders it was then impossible to protest or criticize. Then he stood with the envelope in his hand and watched the ship vanish in the sky.

II

It seemed that nothing significant had taken place. But then Chalmers read the new orders.

He was not pleased. He went to show them to Burke, the breeding-master. On the way he passed by the stall assigned to Jogo and his mate Lily.

They were inside, swaying back and forth and rumbling at each other, possibly discussing past events. Each had some broken-off thorns sticking in place. They rubbed them out against the stall-sides. It was painful. They probably agreed that Lily must be more careful hereafter. There was a special reason for it just now. Jogo was extremely solicitous of Lily. He cherished every ounce of her very considerable poundage.

Chalmers found Burke, the breeding-master. Burke had other duties, but the Corporation wanted more workers bred and conditioned, to be unable to imagine anything but obedience. It was Burke's special job to meet that demand.

"The Home Office," Chalmers told him sourly, "wants more logs. We get one a day from each pair of forest-trained workers. They want us to get two."

Burke spat.

"They asked for a report on that idea, last ship. I said it couldn't be done. The workers've been taught that if they bring in one log today, they can go to their stalls and rumble to each other until tomorrow. They're smart and they're obstinate. Break that pattern and you won't have trained animals. You'll have wild ones. Worse, they'll be educated wild ones! They'll look on us as enemies because we confuse them. I told the Home Office so."

"You're overruled," said Chalmers. "The animal psychologists have figured out a trick. They say the workers loaf. The Home Office says they ought to bring in one log before midday, and another at sundown."

Burke stared. Chalmers read him the detailed instructions for getting the extra logs from the workers. There were alternative instructions for a scond method if the first did not prove desirable, but the requirement for double production was explicit. In re the first method, the orders said that chickens had been brought to double their egg production by a similar process. The fact that the Dorade workers weighed tons to chickens' pounds shouldn't make any difference. The workers should bring two logs per pair per day.

Burke swore when Chalmers finished. The workers were quite satisfactory as they were. They'd been captured, subdued, and brought to Dorade where they'd been trained to their work. They were docile enough, and even seemed friendly with men. So men who handled them felt some obligation to be kind to them.

Actually, if they'd been only a little more brainy, they'd have been rated as rational animals and protected by interstellar law against capture or enslavement. Now they had no rights any man was bound to respect. But they did have some qualities that men would be the better for having.

Chalmers didn't like the new orders. Nor did Burke.

At sundown of the day after the Corporation ship's departure the Forest workers began to appear at the edge of the enclosure. Jogo and Lily came out together, moving slowly and clumsily as usual. Jogo carried a *kamun* log, balanced in his trunk. He plodded ahead and Lily came dutifully after him.

He neared the tree that had attacked Lily the day before. He put down the *kamun* log. He got a fresh grip on it. He advanced ominously upon the tree, the log held as a club.

Chalmers had anticipated it. He had a man posted to prevent it. That man used a sub-blaster. Jogo trumpeted in pained astonishment. The man burnt his hide again, shouting "Hup!"

Jogo hesitated — and got a third sub-blaster shot.

He subsided. He changed his grip on the log and resumed his plodding march to the place where logs should be delivered. Lily followed. Other workers delivered logs and went to their stalls.

In the next two weeks, Jogo tried three times to destroy the tree on his way to the log-warehouse with a log. Each time he was burnt and shouted at. Each time Jogo obeyed.

Then there were signs that an interesting event was at hand. Jogo and his mate — chained to two other workers — were transferred to a small, solid stockade and there released. Instinct told Jogo what was about to happen. He became truculent toward all living creatures except Lily. He patrolled the inside of the small stockade, prepared to battle to the death any creature who disturbed her. But there was no disturbance.

Maybe Jogo was disappointed. It was all familiar enough, of course; there were other similar stockades. The only thing unusual was that

while Jogo and Lily were in the maternity stockade, their own proper stall had alterations made in it.

But eventually Chalmers was informed that the expected had happened.

He and Burke went up on the platform outside the stockade walls. They looked down at Lily and her big-eyed, clumsy offspring. Burke said:

"He looks all right. In fifteen years he may be as big as his father."

"Maybe," said Chalmers sourly. "But remember, the Home Office wants two logs per day from each pair of workers! And it's to be tried out on a pair of new parents. One log at midday, and one at sundown. Then we make it general."

"You don't try it on these for two weeks, anyhow," said Burke firmly. "Four would be fairer. But not less than two."

"The Home Office says as early as possible," said Chalmers. "If you say it's impossible for three, that goes."

They went down from the platform and went about their other duties. The Dorade Corporation was in existence to make money. Money could be made by the gathering of *kamun* logs, which grew only in one forest on one planet in the Galaxy. The more logs were secured, the greater the gross income of the Corporation. The lower the cost per log, the more profit for the Corporation. The more work each nonhuman did, the better for everybody who owned stock.

It was as simple as that.

So Jogo and Lily and their young one had just three weeks of simple family life before the exigencies of business began to affect them again. Then they were transferred back to their old stall.

There was usually some trouble attached to this re-transfer. This was the time when an infant worker was taken from its parents so its earliest memories could be controlled, and so it could never remember doing anything except what men wanted it to do. But right now the Corporation wanted two logs per day from each pair of workers.

So Jogo and Lily did not have the usual terrible, hopeless fight to try to keep their baby. That young creature followed its parents to their old home, frisking a little and with its little trunk dangling and useless and looking rather like a wet gray knitted stocking.

They settled in their stall. There were some changes in it, but Jogo and Lily probably did not notice. They seemed glad to be at home again.

They rumbled contentedly to each other, that first day. Maybe they were congratulating themselves on their return to their old stall and familiar routine. Naturally they didn't guess that the new work-speedup system was to be begun next morning.

Everything started off splendidly, though. Chalmers, frowning, watched as Jogo and Lily came out of their stall with their infant frisking about their feet. Other workers went lumbering away through the trees. But Jogo hesitated because of his

young son. He swayed undecidedly. He rumbled querulously. Then a man shouted "Hup!" and sunlight glinted on a sub-blaster.

Jogo turned heavily and moved into the Forest like the rest. Lily followed, her infant gallantly trying to trot between them. He gazed at the strange new world with a charmed interest.

They disappeared into the Forest. All seemed serene. But half an hour later Chalmers heard distant noises

Somehow he knew Jogo was involved. He made bellowing, infuriated sounds He was fighting something. But Lily — Lily's less deep-toned outcry was the frantic voice of a mad creature defending her young.

Chalmers looked ashamed. It did not seem to him that the orders he was carrying out were admirable.

There was a battle royal being fought out in the Forest. Maybe it was one tree, or maybe two, fighting for the death of the infant worker. while Jogo and Lily fought for its life. At least once a full-grown worker had been killed by the trees. It took three trees to do it, and one had lost half its air-roots in the conflict and the others were not unharmed, but still the worker had been killed. And a baby being fought over by its parents and by trees wasn't in a particularly safe situation. Not when its parents weighed tons, like Jogo and Lily.

So Chalmers listened to the distant tumult with many disagreeable sensations. Half an hour later, when the noise was ended, he looked no more satisfied with himself. Because Jogo and Lily, but no other workers, came back out of the Forest.

They brought their offspring. And the two adults were striped and bloody where the thorny constrictor-roots had torn their hides. The young one was in much worse state. The red stripes on his body were deeper — his hide was not tough — and they crossed and criss-crossed each other all over him. He'd been seized by a tree. His parents had had to fight him free. He was in very bad shape.

But Jogo didn't bring a *kamun*-log for the warehouse. He'd led his mate and his son out of the Forest for safety, not bringing the log they'd been sent for.

So men drove them back in with sub-blasters. One does not accept excuses from robots or domestic animals. They must obey orders or be destroyed or die. Jogo and his family could return to the safety of the warehouse-worker-stall area when they brought a *kamun* log, but not until then.

They came back a second time near sundown. Jogo brought a log.

The infant had some new stripes. Not many, but some. He was a pitiable, bleeding sight. Jogo and Lily went to where the log must be deposited. Their small son stayed so close to them that he was in constant danger of being stepped on. His air was no longer valiant and frisky. He was dazed; shocked; stunned by the discovery of what life was really like.

The two big workers made noises together for most of the dark hours

in their stall. They definitely didn't notice the changes that had been made in it — changes in the windows, and a solid door instead of the former massive grille. They seemed to talk about their situation in re their offspring.

In the morning they were sent to the Forest again. The infant looked terrified, but he had to follow his mother. When the other forest-workers moved away, Jogo and his family followed.

They came out half an hour before midday. Jogo carried a *kamun* log. He and Lily did not want their infant in the Forest. They could not bring him out without also bringing a *kamun* log. So they'd gotten a log as quickly as they could, and brought their young one out to safety.

Which was exactly what the animal psychologists had predicted. The Home Office would be pleased.

They went to their stall, having delivered the log. They rumbled congratulations to each other. Their three-week-old baby was safe in its parents' stall again.

Then there came darkness.

Windows of the stall, which had been modified, now closed and let in no more light. The new solid door of the stall shut tightly. The interior of the stall became abysmally dark. There was no more light than at midnight. Less, in fact, because at midnight there were stars.

Jogo made uneasy sounds in the blackness. He did not understand. Lily comforted her baby. The blackness continued.

Animal psychologists at the Home

Office had reasoned scientifically that the limited intelligence of the workers would not let them distinguish between darkness and night. Chickens did not distinguish between light and day. Lights were put on them during night. They thought new day had come, each time, and they had an extra activity-period during which they ate and laid eggs. The workers on Dorade should be equally unsophisticated. They should accept an hour of darkness as a night. They had an hour of darkness.

Then the windows opened and the solid door swung wide.

It had been predicted that Jogo and Lily would consider this a new day, in which by custom they should go out and get another *kamun* log. With each day divided into two in this fashion, they should carry out their routine twice instead of once. The output of *kamun* logs should be doubled with the same workforce and same investment and same expense. Perhaps, eventually, three logs a day could be required of each worker-pair. Even four! The Corporation should profit hugely.

But Jogo did not leave his stall. He didn't verify the animal psychologists' predictions. He and Lily and their stumbling small calf stayed where they were. They appeared to converse contentedly, not understanding the darkness just past, but placidly assuming that there would be no demands on them until a normal dawning.

But men drove them from the stall with sub-blaster burnings, despite Jogo's and even Lily's bewildered protests.

Jogo argued querulously — it was clear that he argued — that the matter should be talked over reasonably; that it was patently unjust to demand more of them this day. If the men would think —

But the men drove them out of their stall. They drove them into the Forest. In the Forest they knew what they must do — bring back a *kamun* log. Their infant went with them in blind misery. There was nothing else for him to do.

III

They came back before sundown. Jogo brought a *kamun* log, his second for the day. The baby worker was more pitiful than before. There'd been another battle in the Forest.

Burke said between his teeth:

"This is too much! He'll die by inches!"

Chalmers said curtly, "The animal psychologists say Jogo and Lily will figure something out. Animals on Earth figure out ways to protect their young. Jogo will figure that he wants the baby safe back here. The only way to have him safe back here is to bring in a log. So he'll do it. So we'll chase him and Lily and the baby out to get another. And presently there'll be orders to get three logs a day from him. Eventually, why not four?"

Burke swore.

"But meanwhile the young one will die by inches!"

"And maybe Jogo," said Chalmers distastefully. "And Lily. But the Home Office will change our orders

when the cash value of workers dying of this trick is greater than the cash value of the extra logs it brings. Enlightened self-interest!"

He turned away. He was not pleased. He was subject to orders, too.

Of course the workers weren't human, but men who work with animals often come to like them. Most animals have some admirable qualities some humans lack. But Chalmers was under contract. If he resigned before his contract ran out, he'd have to pay an exorbitant fare to get back to Earth. He'd lose his retirement pay. It would be ruinous for him. The only way he could get out of obeying orders would be if the Corporation itself collapsed. But that was unthinkable! It paid dividends of three hundred twelve per cent per year!

Next morning he drove himself to watch the workers move off into the forest. The other workers straggled away in twos. Jogo and Lily and their offspring marched off with something like a purposeful air. Then Chalmers went about his work, scowling and with one ear reluctantly cocked for noises from the Forest. He expected Jogo back before eleven, with a *kamun* log. Then it would be Chalmers' duty to give him an hour of darkness in his stall, and then send him out for another log.

It was very probable that Jogo's baby would acquire more slashes on his tender hide from the air-roots of a *kamun* tree, and that Jogo and Lily would also show signs of new combat.

But Jogo wasn't back at eleven. Or noon. Or one or two or three or four in Dorade's afternoon.

Chalmers remembered the worker who'd been killed by three trees together. He'd seen the site of that killing from a copter, hovering aloft. It wasn't a pretty sight. Now—

He raged. He'd have to take a copter and find out what he'd done to Jogo and Lily and their offspring. It would be his fault. Jogo couldn't imagine an abstraction like guilt, but Chalmers raged because he felt it.

Then, at sundown. Jogo came out of the Forest. He carried a *kamun* log in his trunk. He had some new raw-flesh stripes on his hide. He'd fought something.

But Lily showed no new wounds, nor did the baby. Jogo delivered his log and he and his family went contentedly to their stall.

Chalmers regarded them with ironic satisfaction.

"He fooled us," he said curtly to Burke. "He parked Lily and the young one somewhere where there weren't *kamun* trees. Then he went off by himself and got his log. He's out-smarted us! He's thumbing his trunk at me!"

"Obey orders," said Chalmers sourly. "Outsmart him back. I haven't any choice!"

Next morning, angrily, he gave the alternative orders, provided in case something unpredictable prevented the execution of the first. Jogo had prevented it. He mustn't be allowed to make a custom of defiance or evasion. Even one case, repeated, could become a behavior-pattern. Chalmers had no choice.

Soon after sunrise he watched gloomily as the other workers ambled ponderously off into the Forest. Then he had the door of Jogo's stall opened. Jogo came out, and Lily . . and then the door slammed shut again.

The baby was still inside He bawled. Jogo protested. Lily was alarmed.

"Hup!" snapped Chalmers angrily He was angry because he was ashamed. "Hup, Jogo! Hup!"

Jogo protested again. Lily whimpered.

Chalmers used the sub-blaster on them. Jogo and Lily continued to protest. They were bewildered. They wanted their small offspring with them. Chalmers used the sub-blaster ruthlessly. There were other men he could have ordered to do the dirty work, but he despised what he was doing, so he did it all himself

He drove Jogo and Lily into the Forest, leaving their young one bawling behind. It was only possible because they were tamed.

Men did not injure Jogo or Lily in ways that they could understand to be injuries. Men had been about the baby worker and had not harmed it, as Jogo and Lily understood such things. Jogo couldn't grasp the connection between men and *kamun* trees, so he couldn't feel that men were enemies. When the baby was first born — yes. He'd have fought men then. But not now.

So it was possible for Chalmers to drive them away. When they did disappear in the foliage of the Forest, looking back plaintively, Chalmers scowled and his lips were a tight line.

"I suppose," said Burke painfully, "you had to do it."

"I did!" snapped Chalmers. "They want to get back to their baby. They know they can't come back without a log. So they'll get a log and come back as quickly as they can!"

He went stamping into his office. Jogo's and Lily's childbeast bawled hysterically. It was a distressful sound.

Jogo and Lily were back within an hour. They brought a *kamun* log. There was foliage on it. They'd attacked the first *kamun* tree they found, using no discrimination. They didn't hunt for a tree at the proper stage of development, with its leaves dropped and its air-roots' free ends burrowed into the ground to form soil-roots and become new trees. In their desperation they'd attacked a tree with its air-roots still active and deadly. Undoubtedly they'd had to tear them off to get at the unripe log they belonged to.

Jogo was a grisly sight, bleeding from new wounds. Lily was no less a spectacle to make angels weep

But Jogo had brought back a log. With foliage on it. Which meant that it had been taken when it had no commercial value, and moreover that a certain number of prospective *kamun* trees had been destroyed. The torn-off air-roots would never develop into new monstrous *kamun* trees.

Chalmers regarded them. The Home Office considered that if the workers were made desperate. they would bring in more logs. But, made

desperate, they killed trees to bring in useless logs.

Chalmers swore a little for the look of it, but he felt a private sense of relief.

"Let the young one out," he commanded sourly. "They win! Let 'em go in their stall if they want to."

But they didn't want to. The young one, released by the opening of the door, went straight as a bullet to his mother. And Jogo and Lily fondled him excessively, grumbling and rumbling affectionately Some red stuff came off on the infant. Blood.

And suddenly they went off into the Forest with their young one between them.

IV

They came back at sundown. Jogo brought another *kamun* log, properly collected at the proper state of leaflessness.

The next day he brought another. At sundown. And it was necessary to let things go on in this new pattern. because if the baby were taken from them now, they might become desperate again and kill valuable trees in their need to ransom the small image that now stayed very, very close to its mother in the Forest.

Burke very unhappily pointed out that the Home Office would not be satisfied with a single experiment. To prevent demands for its repetition on a new and larger and more revolting scale, they'd better repeat it themselves. Chalmers nodded.

"Surely we've got to try it twice," he said defensively. "The Home Office believes in animal psychology. It believes all beasts are alike except when they contradict animal psychology. So we've got to prove that they're all alike in contradicting animal psychology . . . but you try it this time."

Burke grimaced. He didn't like that idea, either.

But doggedly he went through the experiment again. There was another worker-couple in a maternity stockade, and their small female young one was nearing three weeks of age. The names of this other couple, on the Corporation's books, were Maco and Alice. They were sent into the Forest with their frisking, infantile calf. They decided it was not safe for their infant. They came back, without a *kamun* log. They tried to return. They were driven back with sub-blaster shots.

They came back at sundown with a log. They had to fight for their young one.

The next day they were sent out again. They came back by midday, with a log. They went into their stall and darkness fell upon them. When light came again they were bewildered by the demand that they go again into the forest. But they were driven into it and came back with a second log for that day.

But the day after, they apparently made contact with Jogo and Lily. They didn't come back until sunset. Then the two pairs of parents came lumbering home to their stalls with their infants frisking together.

The two mothers had obviously joined forces to protect their infants,

and the two bulls had gone off together to gather their logs. It was a beautiful frustration of the plans laid by animal psychologists. Burke surrendered relievedly. The two infants were left with their parents lest new active-state *kamun* trees be destroyed uselessly by workers desperate to have their offspring with them.

"Somebody," said Burke, obscurely cheered, "is going to have his ears pinned back. But I'll bet we get crazier and crazier orders until some animal psychologist gets fired!"

"Or until we're fired," said Chalmers.

But he viewed that possibility without alarm. He was under contract to the Corporation. Unless for proven incompetence or disloyalty, he couldn't be fired without a settlement that would leave him free to do as he pleased all the rest of his life. He wouldn't mind that at all! He settled back to wait for the next Corporation ship.

Meanwhile everything went along beautifully. Each day at sunrise the shambling great beasts which were the workers went ponderously into the Forest. At sundown they returned to the warehouse and the stalls, one of each two bringing a *kamun* log. The normal quota of logs was coming in. But no extras.

Then the Corporation ship arrived.

It brought another man from the Home Office. This time it was no less than the President of the Dorade Corporation. He'd caused the new work-load raise to be ordered, and he came happily to see the working-out of a scheme that should increase the Corporation's dividend rate from three hundred odd per cent to more than six hundred.

But he found matters going on as if the orders hadn't been issued — except that Jogo and Lily, and Maco and Alice, took young offspring with them into the Forest every day. He demanded explanations. He didn't find them satisfactory.

"But what do the damned workers do with their time?" he asked fretfully. "You've proved they can bring in two logs a day! Why don't they? What do they *do?*" Then he said: "Get out a copter. I'll look into this myself!"

Chalmers was appalled. But he piloted the copter in which the President surveyed the Forest. After some time he found the workers. He realized instantly what had happened. In the same instant he knew the President would never understand.

He told Burke about it later.

"I found 'em over by a ford in the stream that runs through the Forest. Remember we had trouble setting up the electrified fence there without grounding it? They were in a couple of groups of some dozens each. They were feeding, and dozing, and bathing in the river. They were acting the way their ancestors did for millions of years, not even thinking about work? But come sundown they came back to their stalls. It's habit. They brings logs. That's habit, too. But they've gone back to the social system — the herd — that's instinctive with them!"

Burke blinked at him. He'd heard the President bellowing as he got out of the copter. In fact, he was bellowing now.

"It's the young ones," said Chalmers, with a sort of guilty zest. "Sending them into the Forest — with *kamun* trees — is what did it. Adults sent to do work are just adults sent to do work. But two adults and a baby are a family. Two families are the beginning of a herd! You see? You can't have a herd from a group of adults only. You don't have workers if you have a herd. Orders from the Home Office made us send the young ones in. With no humans in the Forest to boss them, they began to hang around together. Now they're a herd. They're acting as their forebearers have done for ten thousand generations! They still have the habit of bringing logs and sleeping in stalls, but they can be independent of us any time they like!"

Burke's mouth had dropped open. Now he closed it.

"We'll have to re-train all of them," he said helplessly. "That's going to be the hell of a job!"

Chalmers shook his head. He paused for a moment, listening to the President's voice, roaring at the other human employees of the Dorade Corporation.

"Not us," said Chalmers. "The Home Office has taken over. The President, no less. We're relieved. He's going to straighten things out. Want to know how? The workers are to be driven to work and back again to their stalls by copters. The men in the copters will use sub-blasters and shout 'Hup!' from the sky. They'll drive the workers to where they can get their *kamun* logs, and then they'll drive them back to the warehouse with them, and then back for more logs. Two, three, four a day per worker!"

"He's crazy!" said Burke. "He's going to try to make them work! And animals don't understand working! They understand a ritual, but they don't understand a job! We had 'em going through a ritual, and that was all right, but they'll never understand what he wants. They'll panic!"

Chalmers said pleasantly:

"I've another item. He didn't see it. He was too busy seeing red because the workers were bathing and loafing — but I saw where a worker happened to get near a *kamun* tree. Naturally, it grabbed him. He fought it, and the herd saw it, and they closed in and tore that *kamun* tree to bits."

Burke fairly jerked himself upright.

"But — that means as a herd they'll class *kamun* trees as enemies — as they might class snakes — or tigers. Enemies! They'll kill every *kamun* tree they see."

"Which," said Chalmers comfortably, "is no longer our business. The Home Office has taken charge. The President is ordering out the copters now. They'll start chasing the workers back and forth with sub-blaster shots and shouting from the sky. The workers will get confused. They'll panic. They'll stampede. How long before they crash the electric fence

and scatter to hell-and-gone?" Chalmers asked Burke.

Burke's mouth opened and closed like that of a fish, with no more sound coming out of it.

"We're not responsible for the results of chasing workers by copters," said Chalmers, pleasurably. "The workers who grow crops — they'll have to be turned loose. It won't pay to take them off anywhere, and there's no use for the crops with the Forest workers beyond the blue horizon. Do you know, I suspect the Dorade Corporation is finished? But we have contracts! Let's retire!"

Chalmers did retire. And Burke, and most of the others. Which meant that Chalmers became busier than ever, back on Earth, doing things that interested him.

There was never much news about Dorade, on Earth. It was years and years before Chalmers saw a single item about the planet or the tiny colony he'd run there. Then that item was very brief indeed. It said that somebody's space-yacht had landed on a planet called Dorade, and found it inexplicably inhabited by animals obviously introduced from Earth. They were numerous and thriving and very evidently happy. They were much better off than those of their race who remained on Earth.

In fact, said the news item, the planet Dorade was positively like heaven for the elephants who lived there. END

THE SMALLNESS BEYOND THOUGHT

by ROBERT MOORE WILLIAMS

Illustrated by GAUGHAN

The mountain was deadly and th hermit was clearly insane. B Earth's future depended on the

I

Carrying shelter halves and sleeping bags, each with a head-high staff and each with a little food in his pack, the two youths had worked their way up the canyon since early morning. Their clothing was spotless, their equipment included a compass, a scout knife, a canteen, and — special for this region — two packs of anti-rattlesnake venom. Since they belonged to the newly organized Space Scouts, their equipment also included an excellent map of the night sky for the month of July.

Each carried a small collecting sack. As they had come up the canyon each had picked up bright fragments of float quartz and other shiny stones.

"There's something, Jimbo," Bruce

said, pointing with his staff toward the base of a nearby cliff. There a vertical stringer of rose quartz had intruded into the granite that formed the main rock mass of this region. Moving to the stringer, Bruce dropped on one knee to examine it better. Excitement lit his finely chiseled face. Quickly, he found a chunk of granite, used it to break off a larger piece of quartz, which he held up to the sun.

"Get the ethen, Jimbo!" he said.

Jimbo, the shorter of the two, had already taken a small metal case from his pack. Opening the case revealed a transparent plastic cube inside it. With his scout knife, Jimbo cut a small limb from a wild buckwheat bush. Splitting the end of the limb, he inserted a fragment of crystal from the stringer into it. Using the limb of buckwheat to keep his hand at least 18 inches away from the little plastic cube, he brought the quartz crystal nearer and nearer. From the bottom of the cube, a little ball suddenly came to life. It leaped upward, then took on an orbital motion, then began to spin on its own axis. Slowly, Jimbo brought the fragment of quartz crystal closer to the transparent cube. When it was about three inches away, the spinning ball inside the cube suddenly began to emit smoke. Jimbo hastily jerked the crystal away.

Without a word, both boys dumped from the sacks the mineral specimens they had gathered on the hot trip up the waterless canyon. Each sack was filled again, this time with fragments of quartz chipped from the stringer rising through the granite. When they had filled the bags, Bruce, estimating time by looking at the sun, consulted a map of the region.

"According to this map, the place called Hermit's Canyon is not more than half a mile from here."

"We can make it easily before night," Jimbo answered. Replacing in its metal case the transparent cube that contained the little ball, he slipped the metal case carefully into his knapsack. As the two youths went quickly up the rugged canyon, they looked a little like young, thin-waisted hunting dogs on the trail of ancient prey.

II

It had been said of the man called the hermit that he had come up here into these desert mountains to die. Back in the days when land was cheap in California, he had bought a few acres on the bottom of the canyon, and more acres on the small, rocky plateau above the canyon. In the canyon, he had built a shack of wood and of boulders, he had also built stone steps to reach the plateau above. But the structure that had excited comment was an aimless, wandering, going no-where foundation for an incredible house that he built beside the canyon road — and which he kept on building across many years, so many that the people who had first said he had come up here to die had died themselves.

In the early days, the road that

ran down the canyon had been strictly a horse and wagon trail. It had originally been built by Indian labor doing slave time for a Spanish grandee who had held these desert mountains under a grant from the king of Spain. It had been intended for the use of mules drawing carts and for the grandee's Arabian horses. After the grandee had gone and his 20,000 acre ranch had passed into the hands of the newly arrived Americans, the road had been improved enough to allow broad-tired wagons to creep along it. Herds of steers and flocks of sheep had also used this trail. Rattlesnakes, then and now, had left broad twisted trails in its dust.

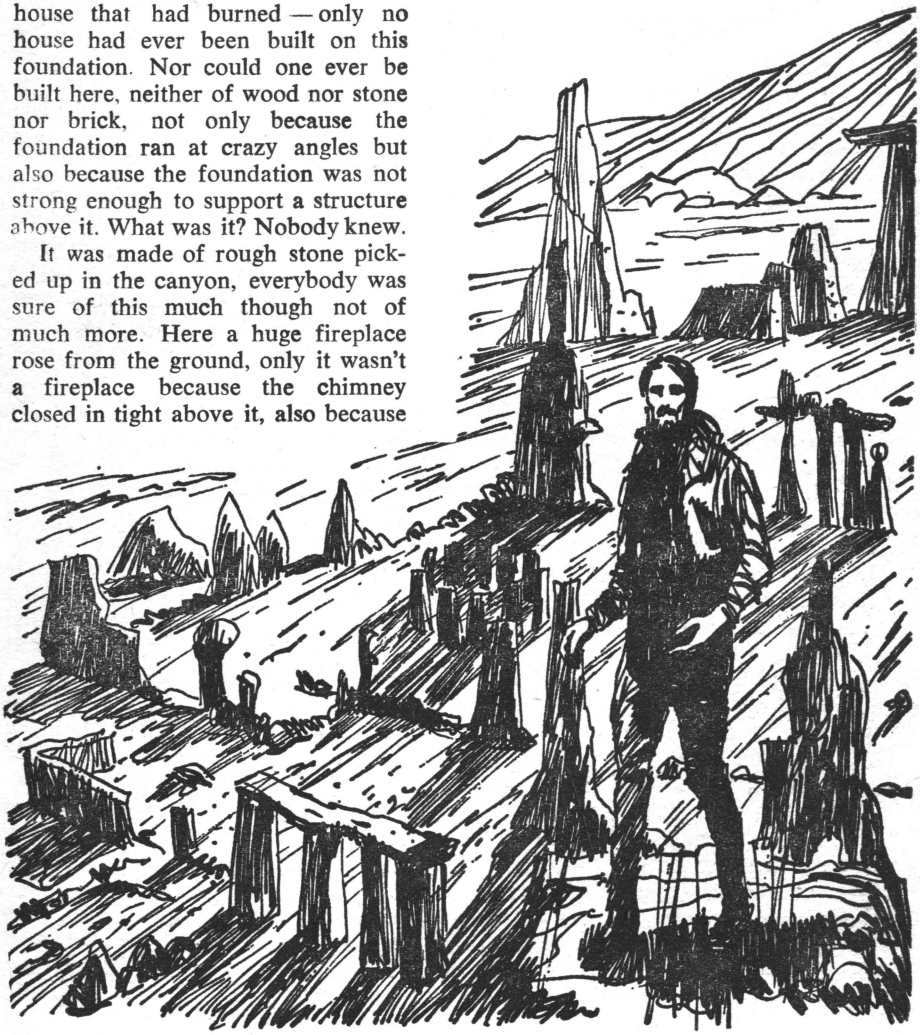
Hardly anyone knew when the hermit had first arrived. No one cared. The report was promptly passed along the scattered ranches that he was crazy. People left him alone. Few people had ever seen the overall clad, long-haired, barefooted, brown-skinned recluse who had found refuge here. He had a car, an old model Ford, which he repaired himself. Because he rarely went to town, people wondered how he lived. Finally most decided that he grew his own food in the canyon. It was certain he had planted avacado, English walnut, and orange trees in the canyon. On the plateau, he had built some kind of structure, no one knew exactly what. No one cared to go to the trouble to find out. In the first place, the structure — whatever it was — was on the hermit's land. To reach it, trespass would be necessary. No one knew whether or not the hermit had a rifle, but in this country everyone else did, so the assumption was that the hermit had a gun too, and could probably use it. There were other reasons for not investigating the structure on the plateau, one being that the plateau was known to be arid, rocky soil where nothing but sage brush, cactus, and wild buckwheat would grow, another being that the place had a reputation for being much to well supplied with rattlesnakes.

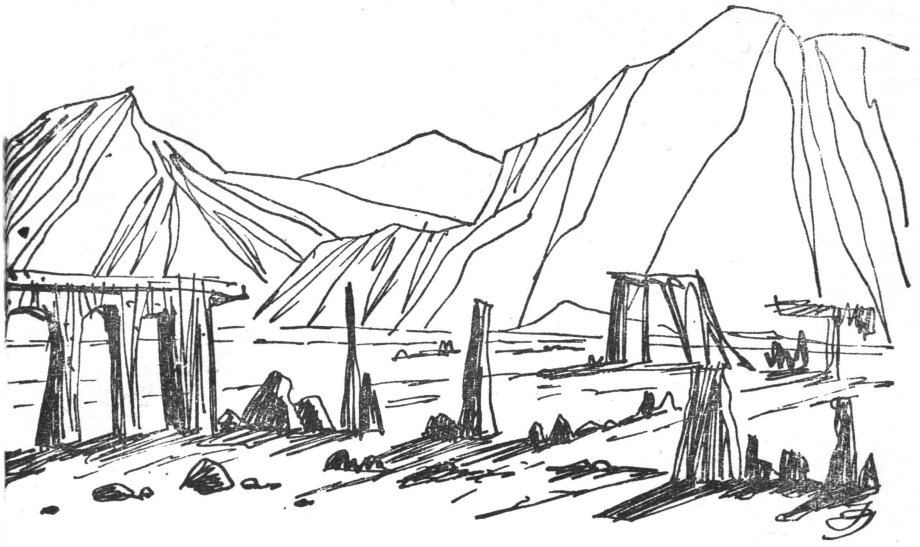
When the sixties had come and light planes had become fairly common, one local rancher, mildly curious, had flown his plane over the plateau. Later, when he had been released from the hospital after a crash that had broken both legs and several ribs, he had said that all he had seen on top of the plateau had been a circular pit of some kind. "Covered with wires," the rancher had said. No, he had seen nobody on the plateau and he hadn't been shot at. His motor had simply conked out over the plateau and he had to make an emergency landing, which had wrecked his plane and had almost wrecked him.

But the real reason no one cared about the structure on top of the plateau was because everyone thought it was similar to the structure he had erected beside the road at the bottom of the canyon. Anyone who drove along the road could see this structure. And seeing it, could be sure it had been built by a madman, and that no matter what this madman built, it would have no significance.

No one who had seen this structure beside the road at the bottom of the canyon had been able to discern its purpose or its plan. It was a house, or the foundation of a house, it was the foundation of a house that had burned — only no house had ever been built on this foundation. Nor could one ever be built here, neither of wood nor stone nor brick, not only because the foundation ran at crazy angles but also because the foundation was not strong enough to support a structure above it. What was it? Nobody knew.

It was made of rough stone picked up in the canyon, everybody was sure of this much though not of much more. Here a huge fireplace rose from the ground, only it wasn't a fireplace because the chimney closed in tight above it, also because





the fire box had been turned into a flower box. Who would grow flowers in a fireplace except a madman? Also, around the outer area, was a stone wall that contained all the other walls. Here rose an arch for a door, but there was no door. Here was a place that looked as if it would form a quiet pool if water was to flow along these channels only there was no water to flow. Here a path made of fitted stone led to the base of a tall tree to stop there as if it had gone as far as had been planned. Only who would run a path from a house to a tree? Here beside the path were pools that looked like they were supposed to be fish ponds, only they had no water in them, and no fish. Here on tall arches was a stone aqueduct that looked like the aqueducts the Romans had built in Italy so long ago. Only this aqueduct was not five feet high, not ten feet long, it did not start at any water supply, it did not carry water and never had.

The whole damned structure was mad, according to the residents of this region. It was completely out of place. Or perhaps it was out of time. The best that anybody had ever said for the hermit was that he had seemed to select small segments from many structures that had once existed in other times and in other places and had tried to put them together into one building.

The hermit didn't care what people thought. He went his solitary way, living alone in the shack of logs and stone he had built in the canyon. He seemed to have enough

money for gasoline and tools and cement and he didn't need much else. People took one look into the old Ford and stayed away from it thereafter. Coiled on the front seat was always a big gopher snake. The hermit and the snake seemed to be quite friendly and the hermit was not the only person to make a pet out of a snake and while a gopher snake is about as harmless a creature as crawls the earth — except to gophers, of course — the rumor got around that this was a pet rattlesnake the hermit carried around with him in his old car.

After that, even the hitchhikers avoided him.

There are people in the world, plenty of them, who will look at a gopher snake and will see a big red rattler and will boast for years thereafter how close they were to the big snake.

Then, after World War II ended and after the uneasy peace came over the world, the big 200 inch eye that looks out yonder . . . and out yonder . . . and still farther out yonder . . . to where the galaxies look like tops set spinning by careless children of the gods . . . who thereafter forgot about their toys and left them to spin on forever in Great Space . . . the big 200 inch eye in the sky was set into place on top of the mountain that looked down over the vast number of ravines and lonely plateaus where the hermit lived. Not that the big scope would ever be used to look down his throat. Its focus was so long it could see a million light years but it couldn't see five miles down into the canyons.

Certainly the hermit must have seen the big scope going into its shining dome on the rim of the mountain above him. He must have seen the special road ripped out of the mountain to carry the giant trucks that carried girders for the dome, also that great truck that carried the big lens up the mountain. If so, he paid no attention.

But later, when the sixties were fading away, he seemed to take interest in the radio telescope then going in on the rim of the mountain above his plateau. He inquired about it at the general store and saloon at the base of the mountain where the scope was located. He went to the local library in the nearest town and studied newspapers containing the story of the radio telescope.

"Its purpose is to listen for footfalls in space," some reporter wrote about it. Another called it the big ear and said it could detect a gnat walking on the edge of the Milky Way.

For one week, exactly, the radio telescope listened to the noise coming from out yonder, to the radio waves hinting that stars were being born, or nova exploding, of electric storms sweeping across the void. Perhaps the staff of the big ear were trying to detect the whisper of feet coming from the direction of the great suns of space. Were strangely shaped flying machines wandering there? Did definitely recognizable radio signals come in from the void? Marconi had thought he had picked

up radio signals from space. Other, less famous men in the field of radio, had made similar claims. During the week that the scope was working perfectly, Dr. James Kirk, director of the whole project, and Ed Quimby, electronic specialist in charge of the radio end of the big scope, were happy men.

The first day the radio telescope was put into operation, the hermit visited it. And Ed Quimby met him, talked to him, liked him. Only Quimby didn't know who he was. And wouldn't have cared if he had known. Quimby had left the building and had gone out to his car to get a carton of cigarettes. Puffing and snorting steam, an ancient car was just pulling into the parking space next to Quimby's car.

Glancing at the driver, Quimby saw what seemed to be an old and yet somehow a young man. High cheek bones were prominent under the dark skin of a smoothly shaven face. Quimby's first thought was that the driver was an Indian, possibly from one of the reservations in the vicinity. Then he saw the man's eyes. They were the color of space as seen from the top of this mountain.

But even with eyes the color of space, Quimby paid slight attention to the man. It was the old car that grabbed and held his attention. Quimby was not a rebuilder of antique cars, he simply admired them. He saw that this was a Model A Ford, which dated it as being built prior to the early 1930's. In spite of its age, it had gotten up the mountain. Quimby spoke admiringly of this feat.

Perhaps the hermit was lonely, perhaps he felt an urge to talk to somebody, perhaps he misunderstood Quimby's admiration for the car as friendliness, perhaps this gave him the opening he wanted. He began to talk, eagerly, about the strengths of the Model A.

III

"I rebuild it myself every spring," the hermit said, enthusiastically. "Put in new rings, take up bearings. Keep full of oil, it run long, long time."

This was what Quimby thought the hermit said, this was the way Ed translated the words. Neither then nor at any other time was he ever quite sure what this man said. The hermit spoke with an accent, sometimes he put the verb at the head of the sentence, sometimes he tacked it on at the end of a sentence — like a caboose on a long railroad train — sometimes he forgot the verb entirely, sometimes he used nothing but verbs, leaving the nouns to find their way home as best they could. The result was enormous verbal confusion but the hermit grinned at the electronics engineer and Quimby grinned back. No language barrier has as yet come into existence that will stand up against simple good will, with the result that within one minute these two men were firm friends and were deep in a highly technical discussion of internal engines.

Then the hermit pointed at the antennae of the radio telescope that

had been built to listen for footfalls in space. At this time, it was official policy to show every possible courtesy to visiting natives, with the result that Quimby took the man through the whole set-up, even introducing him to Dr. James Kirk. Politely, Kirk and the hermit shook hands, and Quimby continued the tour. The hermit stared in wondering awe at the antennae systems, he studied the amplifying and recording devices with what seemed to be an expert eye. When they had finished the tour, he was calling Quimby by his first name, which was Ed, except that when the hermit spoke the word, it came out Edyn, except when it came out Den. Once or twice it came out Ned. And Quimby was calling his visitor Hermit.

Outside, Hermit took Quimby to the edge of the mountain and pointed downward to the complex of alternating canyons and plateaus, indicating the canyon where he lived. At the car, they shook hands.

"Edyn, thank you, I wish . . . Is good for . . . Is good to . . . I mean. Great is. You come see me, could be, huh, Ned?"

He pointed at the canyon where he lived.

"Glad to, Hermit," Quimby answered.

Then he looked inside the car and saw the tame gopher snake asleep on the front seat and suddenly decided he would not accept this invitation. The hermit got into the car beside the snake. Waving back at Quimby, he drove away. Quimby, his mouth open because of the snake, stood staring after him.

Completed, the big ear listened for one week for footfalls out in the far-off galaxies where the big suns go Then it stopped listening. This was a new type radioscope, with new circuits built on new concepts that nobody understood very well. The staff, driven by Kirk and Quimby, spent a frantic month trying to get the big ear back on the job of listening. They had no luck. Worst of all, they could not understand what was happening except that somewhere the current was not flowing. Just as Ed Quimby was about to blow his stack, one of the staff told him that a crazy man who couldn't talk was outside asking for him. Quimby went out. The visitor was the hermit. Quimby invited him into the lab. In exactly 18 minutes, the hermit had isolated the break in a series of wires, said break being very completely hidden by insulation and moulding, which was stopping the current flow. He established wired circuits around the break and put the scope back into operation. Any member of the staff, with a good meter, could have found this hidden break, if they had thought to check for it. They hadn't thought. How had the hermit found it?

The staff asked questions. Dr. Kirk boomed questions at him. He stared blankly at all of them. Quimby tried to translate.

"Feelin' jumps no go," the hermit said, grinning happily at his friend.

Eventually his friend Quimby, prodded by the director and the whole staff, managed to translate these noises into words.

"As I understand him, he says he can feel with his fingers the flow of electromagnetic radiation," Quimby told the staff.

They hit him with everything but the roof.

"I don't claim that I can do it," Quimby said, patiently. "But he claims he can feel radio waves with his fingers."

"Can he feel them in space or in wires?" Kirk asked.

"Either way," Quimby answered. At the moment, the hermit's triple talk consisted of all nouns and no verbs.

"All right, we'll check him on that," Kirk said.

This laboratory was staffed by hard-bitten radio engineers who knew, or thought they knew, everything there was to know about radio waves. They already had the equipment, hence they needed perhaps five minutes to set up a small radio transmitter in such a way that its output was fed into an insulated wire, which was passed around the corner of a door and into a second room where the hermit could not see what was being done at the transmitter.

"When I say *now* ask him to tell you whether or not radio waves are flowing in the wire," Kirk said.

In the first room, where no one could see him, the director pushed — or did not push — a silent switch.

"Now!"

In the second room, the hermit held tentative fingers toward the wire that was serving as a radiator — and broke into excited speech.

"He says that radio wires are flowing in the wire —" Quimby began.

"Hah!" Kirk grunted from the next room. "The switch was open. How could the wire be acting as a radiator?"

"— but that radio waves are always flowing in every piece of wire of every length," Quimby continued. "He says no waves were coming from your transmitter at the time you spoke. *Sender-outer,* he calls it."

In the next room was puzzled, angry silence.

"Now!" Kirk said again, his voice hot.

The hermit reached exploring fingers toward the wire — and shook his head.

"No," Quimby said.

"Now!" Kirk shouted.

"No, Edyn," the hermit said.

"Now!" Kirk screamed.

"Yes," the hermit said, grinning happily.

Kirk came into the second room. His face was grim. "That might have been a coincidence, a lucky guess —"

"Let's run more tests," Quimby said.

Thirty minutes later, every hard-boiled radio engineer in the lab was convinced that the hermit could feel the flow of radio waves along a wire. He did not miss even one test. Kirk was puzzled, grim, perhaps bitter. They set up a second test, one in which the energy was projected in a tight, invisible beam.

The absence of wires made no difference to this ragged, blue-eyed

scarecrow from one of the canyons below the mountain. Again he was right every time.

At this point, Kirk, now growing desperate, suggested that possibly the ragged man was reading his mind.

"Reading your mind would be an even more remarkable feat than sensing radio waves with his fingers," Quimby said.

"We'll test it anyhow."

To devise and set up a test system wasn't difficult for these people. The device consisted of a circular drum much like the channel selector on a TV set, the drum containing multiple contacts, the drum being hidden in a box. Set spinning, the drum was like a miniature roulette wheel. No one knew where it was going to stop or where it had stopped after it had finished turning. Perhaps it had closed a contact which fed current to a transmitter, perhaps it had not.

Again the hermit reported on the existence or the non-existence of radio waves, only now there was no mind to read from which to secure the information. Nobody knew where the selector had stopped.

Nobody but the hermit. This bare-footed scarecrow from the canyon below the mountain knew whether or not the transmitter was turned on, knew it every time.

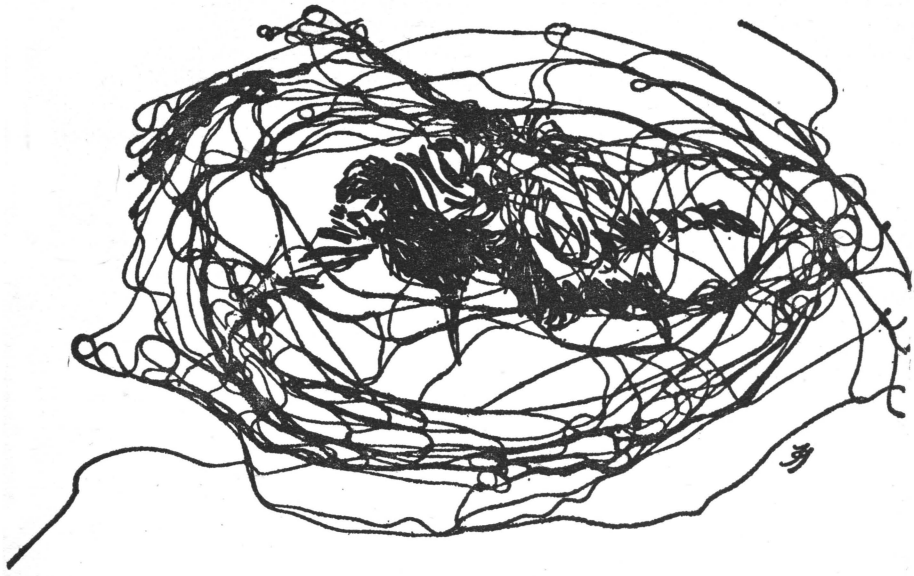
By the time this test was finished, the atmosphere in this mile-high radio telescope laboratory was beginning to develop considerable electric tension all its own. This was put down to nerves, to the emotional reaction of shaken men who had seen what they did not understand and what they had thought could not happen.

At this point, the hermit decided it was time for him to go. Spouting verbs at Ed Quimby, he started toward the door.

"Hold up there!" Dr. Kirk called to him. "I want to talk to you. I've got questions . . ."

Possibly the bare-footed scarecrow from the canyons below did not understand the direction, possibly he understood and chose to do as he wished. Waving happily at his friend, Quimby, he went through the door.

Kirk punched the intercom and told the uniformed guard now on duty at the outer exit from the lab to stop the hermit.



Later, the guard said: "I told him you wanted to talk to him but he kept right on walking. Sure, I tried to stop him. What happened to me? How'd I get down here in the dispensary? Why am I lying down? What makes my head buzz this way?"

"Where did the hermit go?" Kirk asked the guard.

"How in hell would I know? How did I get here—"

Kirk got on the telephone and identified himself to the office of the state police. He spoke to the Desk Sergeant.

"A barefooted man in a Model A coming down Telescope Mountain? He'll be easy to identify? You want him picked up on a charge of assaulting a guard at the radio telescope laboratory? Yes, sir, we'll pick him up. No, we won't let him get away. There's only one road down the mountain. We'll pick him up close to the bottom . . ."

In the hospital, the state trooper said:

"I had an order to stop this old model car, see? The driver was to be held for questioning, see? An assault charge, see? I parked my patrol car off the highway so I could drop in behind him as soon as he passed me, see? He came rattling by my stake-out. I pulled in behind and gave him the red light, see? He turned around and looked at me. I thought he pointed his finger at me, sort of waggling it at me the way you do to a kid . . . see? . . . How'd I get in the hospital? What happened? Did I go off the road?"

At noon the next day, Dr. Kirk called Ed Quimby into his office. The director had a report from the state police on his desk. "So you think the hermit feels friendly to you, do you, Ed?" he asked.

"I think so," Quimby answered.

"All right," the director continued. "Because he feels friendly toward you, I want you to go down and find him. Make good friends with him. Find out where he lives, visit him in his home even if it is a cave!"

Bitterness crept into the director's voice as he spoke these words.

"Sure," Quimby answered. "If that is my duty assignment, I'll be glad to go down and hunt him up. But if there are legal charges against him, he may not let me get very close to him."

"There are no legal charges against him," Kirk said.

"Eh? What about that?" Quimby pointed to the report on the director's desk.

"This is a report, nothing more. If there were a way to file charges against him, I would certainly do it, just to talk to him if for no other reason!" The bitterness strengthened in Kirk's voice. "But our guard here is all right. Nobody knows what happened to him, except he let the hermit walk off the premises. As to the state trooper, all anybody can say is that he ran off the road and parked his patrol car at the bottom of the ravine. The hermit may have knocked out both of these men, with some kind of electrical energy spurting from his fingers, but there's absolutely nothing we can do about it because we can't prove the existence of such an energy! Also, to attempt to prove it is to get me fired, as incompetent. In fact, I could be fired for thinking such thoughts, even!"

The director wiped sweat from his bald head. "Damnit, Ed, it's maddening enough to be responsible for a radio telescope listening for footfalls in space. God knows, what would be up that way —" he pointed toward the ceiling, "— that would have feet? Then, while I'm listening for the impossible, the incredible comes walking through the front door, and —"

"I know how it is," Quimby said. "It gets to me too, sometimes." He shook his head. "All right, I'll go down and find the hermit and see what I can get out of him."

"Please do, Ed," the director begged.

IV

Quimby's first stop was at the fierce little grocery store at the bottom of the mountain, fierce because in addition to groceries, it also sold beer. As Quimby pulled to a halt, a little man with a face like a wasp was coming out the front door. He glared at Quimby then got into a car and drove away. A sign over the door said:

GROCERIES, L. Kindell, Prop.

Inside, on the left Quimby found a small, screened section with another sign which said:

U. S. Postoffice
Valley Bottom, Calif.

To the rear were shelves of canned goods. To the right was a long sit-down bar. Here two Indians were drinking beer — and perhaps dreaming in their hearts about the day when they would run the last white man into the Pacific Ocean.

Quimby seated himself and a monstrous fat man in a dirty apron moved ponderously to serve him.

"Beer," Quimby said.

"You from that new observatory on top of the mountain? I hear they got something they call a radio telescope up there? What kind of a thing would that be?"

"A device for listening to radio noise coming from space," Quimby explained.

"Noise from space? What the hell good would that be even if you heard it?"

"It would help scientists to form a slightly more comprehensive picture of the universe," Quimby answered, evasively. He wanted information, so he intended to be polite, but he had no intention of trying to explain to this fat man the function of the radio telescope. It soon developed, however, that the fat man was the owner of the store, that he cared nothing for radio telescopes — or for any other kind — but that he was interested in customers from the staff of the observatory. "I need the business, mister," the fat man explained. "I need it real bad."

"I'll tell our people about you," Quimby said. "I'm sure you will get some good customers from them. We had a visitor from somewhere down here yesterday, a man called the hermit. Did you ever hear of him?"

"Huh!" the fat man grunted. "Who hasn't heard of him. What was he doing up at your place?"

"Just curious," Quimby answered.

"Just curious! That bare-footed corn eater don't know anything about radio. Or does he? Hunh!" The fat man was suddenly silent, his eyes veiled, thinking.

"He was certainly an odd bird," Quimby said. "What do you know about him?" The tone of his voice encouraged conversation.

"Oh, nothing," the fat man said, shrugging. "Except he came in here about six months ago with a watermelon as big as a beer keg. He tried to trade it to me for gasoline. I don't know where he stole it but it was a mighty good melon." The fat man smacked his lips at the memory of a past sweetness. "He left it here and I ate it."

"What makes you think he stole it?" Quimby asked.

"How else could he have gotten it?" the fat man replied, astonished. "You don't grow watermelons like that in this desert. If you could grow them, you'd be rich as —" He shook his head. "No, he stole it somewhere, probably off a truck bringing them up from Mexico."

Quimby sipped beer. On the wall, the radio music went off the air, to be replaced by the voice of an announcer. "News flashes. Skin diver drowns off Oceanside. Nine killed in crash on freeway. Two boy

scouts reported missing in or near Hermit's Canyon . . . If it's food you want, you can always get rock bottom prices at Rock Bottom Stores, where the prices are always at rock bottom. In Rock Bottom Stores every item is a leader, always."

"A funny thing," the fat man said, brooding inside himself. "There was another guy in here looking for the hermit. You may have met him as you came in. Had a face that looked like a wasp, he did."

"Yes, I saw him," Quimby said, suddenly remembering the little man who had glowered at him. "What about him?"

"Nothing," the fat man said, evasively. "I never saw him before."

Quimby finished his beer, went outside, consulted a map, and got under way toward the place marked as Hermit's Canyon. He parked his car beside the thing that looked like the foundation of a house, but wasn't. He was studying this strange structure when the hermit, attracted by the sound of the stopping car, came hurrying down the canyon.

"Edyn! You come see me so good!" The hermit's pale blue eyes floated in an ocean of happy grins thrown up by the cheeks and the mouth.

"Nice to see you again," Quimby said. He gestured toward the foundation that was no foundation at all. "Tell me — what is this?"

The ocean of happy grins slipped away into shy embarrassment. "Oh, that!" The hermit looked at the ground. He looked up the canyon, where the ground widened and where tall pines grew. He looked down the canyon, where it narrowed to rocky walls. He looked toward the long flight of stone steps that led upward to the plateau above. The embarrassment worsened.

"It is not a *this*," he said. "It is a way to fight the devil —"

"Eh?" Quimby said, startled.

"It is sometimes I have not too much to do. For idle hands — what is it said?" The bearded, bare-footed man groped for words.

"The devil finds work for idle hands to do? Is that what you are trying to say?" Quimby asked.

"Oh, yes," the hermit said, beaming. "I also make it — for fun!"

"Um," Quimby said. Doubt rose in his mind as he looked at one stone walk that went nowhere and at a second walk that went directly to a huge oak tree, ending there as if this very spot had been the place the builder had intended it to end. He looked at the twisting channels where no water flowed. At this moment, it seemed to him that a pale blue light flowed in these channels. He blinked his eyes and the light was gone.

"Come, I show you," the hermit said. Again his eyes were floating in islands of happy grins thrown up, despite the beard, by the cheeks and the mouth.

Quimby soon realized he was getting the grand tour. The hermit took him up the canyon, where avacado, orange, apple, apricot, fig, and lemon trees were growing — too well! There was no irrigation in the canyon, neither ditches nor sprinkler

systems were visible. Weeds that had sprung up in March under the delusion that this year this desert land would bloom had all died by May. No rain had fallen in months, none would fall for more months. But the hermit's trees were green and heavy with fruit.

Marvelling at this miracle, Quimby saw that beside each tree, on a metal rod thrust into the ground, was a helix made of heavy wire, with the open end up. Being a specialist in antennae systems, Quimby wondered vaguely if these helices beside each tree were designed to pick up energy flows coming from space and to conduct them into the ground. While he was pondering this question, the hermit took him up the steps that led from the bottom of the canyon to the plateau above.

"Did you build these steps?" he asked.

"Yes, Edyn. Keep busy." The hermit spread his hands in a gesture which said he hoped his friend would understand.

At the top of the steps the plateau began. Here a dubious path led a crooked way through a thin growth of wild buckwheat, scrub cedar, manzanita, with occasional sugar bushes adding a touch of dark green to brighten the dark granite boulders that were a prominent part of the landscape. Quimby took one step along the path, saw the rattlesnake coiled there in the dust, and hastily drew back.

"Rattler! Look out!" Quimby bumped into the hermit as he backed away, then tried to clutch at the ragged overalls, as the hermit, laughing, evaded his hands, and stepped on bare feet foward the coiled diamond-back. "You idiot! If he strikes you —" He caught and held his breath as the hermit bent over and grabbed the snake behind its head.

Laughing happily, his cheeks still filled with grins, the hermit lifted the snake. The five-foot long body wrapped itself around his arm. Still laughing, the bare-footed man held the triangular head toward his visitor.

Quimby drew back.

"This is Archy, Ned!" the hermit protested. "Is good friend." He concentrated his gaze on the beady eyes in the triangular head. Quimby could have sworn he began to speak to the snake. "Is Edyn, Archy. Edyn is good friend. It is not supposed to rattle tail at friend. Does not bite good friend! Never, ever, Archy!"

Quimby could also have sworn that the snake listened to this talk. He was so engrossed in what was happening that he did not jerk away when the hermit suddenly thrust the snake toward him.

"Hold out hand, Edyn. Let Archy touch you. Then, when you come again, Archy will know you. He will not rattle his tail at you, he will not bite friend.

Quimby thrust out his hand. He did not know where he found the courage for this action nor where he found the courage to let the snake rub its head against his fingers. The snake rubbed against him like a cat rubbing against the legs of a good friend. Giggling happily,

the hermit set the reptile on the ground. It promptly wiggled into the scrub brush. Quimby wiped sweat from his face and suddenly remembered to breathe again.

The hermit observed these signs with anxiety. "Is well, Edyn? Is feeling good? Is no need to make the worry. Next time Archy will not make the rattle at you."

"How in the devil did you ever tame a rattlesnake?" Quimby blurted out.

"Is no hard," the hermit said, shrugging. "Just be friendly to snake, he be friendly to you. Is hard life to go on belly on ground, to have no hands and no feet." Sympathy was in the voice of the bearded man.

"Well, I'm damned!" Quimby said. "I never thought of that!" He followed the hermit along a path through the scrub growth, then saw something in the shade of a sugar bush, and stopped suddenly and said again, "Well, I'm damned!"

What he was looking at was a watermelon as big as a beer keg.

"The store man said you tried to trade him a huge watermelon for gasoline but he thought you had stolen it somewhere!" Quimby said.

"Yes. Did. Not nice, fella in store," the hermit said. "He take melon, say he give gasoline, then won't give gasoline. No good."

"But how — this place is rocks and sand —" Quimby swept his right hand in a motion that included the whole arid plateau. "Melons require huge quantities of water. How can you grow a watermelon like this in what is actually a desert?"

The hermit shrugged. To a man who could tame rattlesnakes, no miracle was really difficult. "The spinner-arounder, it bring juice down from sky. Is nothing." He glanced at the sun, now dropping down the sky, then looked shyly at his guest. "Would like to eat, Edyn?"

Without waiting for an answer, he took a knife from his pocket, opened the blade, bent over, and sliced open the watermelon. It was dripping with red meat. Finding a huge slice thrust into his hands, Quimby found it was the most delicious piece of melon he had ever eaten. Looking under the sugar bush, which was beautifully green, he saw another helix with the open end up toward the sky. This one was smaller than the helices under the big trees in the canyon but it apparently served the same purpose.

Quimby knew that he looked at a miracle, and at billions of dollars, at deserts blooming with new life, and at hope for enough food to feed every hungry man, woman, and child on Planet Earth. All of it apparently done — not by mighty atomic power — but by something as simple as a coil of wire! A miracle achieved by a barefooted man in ragged overalls, by a bearded man who made friends with rattlesnakes!

Wonder rose in Ed Quimby, rose from springs hidden deep within him and he suddenly saw with the eyes of wonder that this barren, rocky, arid plateau was as rich with promise for the future as any fairyland envisioned by the mind of dreaming

man! Here, in this place, with a little coil of wire with the open end pointed at the sky, the human race solved its food problems! With the gnawing belly ache solved, for all men, perhaps there might be time and energy to solve the other problems that followed in the train of hunger, war, flood, poverty, and crime.

With wonder still rising in him, Quimby saw that just beyond the sugar bush that provided shade for the watermelon vine, climbing a stake thrust into the ground was a vine filled with green beans, each of which was at least eight inches long and as thick as a man's thumb. Seeing Quimby had noticed them, the hermit pulled several of the beans. Casually, he ate one, handed another to his guest. Raw, in its own way, it was as sweet and as delicious as the watermelon! Quimby now saw that single plants of corn were scattered here and there on the plateau. Each was heavy with ears. And each, he did not doubt, had a little helix thrust into the sand at its root! And there were cucumbers and squash and onions and tomatoes, the latter bearing produce that was red ripe! Quimby knew he had never tasted such vegetables. There were also blackberries, purpling hands and lips, each vine with its own individual helix.

In this moment, with a green bean in one hand and a purple blackberry in the other, with strong memories of ripe, red watermelon, Ed Quimby knew that he stood in the presence of bare-footed, ragged, bearded genius.

"How do — How?" Groping for words, he stammered a question as old as man. "How do you do it? How is it done? What makes it work?" Then the final question, always in the mind of every man. "Can I do it too?"

"Is spinner-around, Edyn. Is wire wound in helix. But is not wire! Is space filled by wire! But is not space, either. Is something that makes space —"

"What?" Quimby said. "Something that makes space —"

"Is form, Edyn. Is shape. Is giving form to thing that comes down. Is juice. Is much juice. Wire is just — is just — is just memory of right form for juice. Wire is nothing. The spinner-arounder would work without wire if it could remember form to take. Form is of importance the greatest. One form for green beans, another form for watermelons —"

"What?" Quimby said, again. "You mean you make a helix of a different shape for each plant?"

The hermit grinned at him like a father whose child has just come up with a bright saying. "Is different, Edyn. Is all different, Ned. Is always everytime everything always different, Ed. Has got to be this way. Form right for green beans is not form right for watermelons, Edyn."

"But why?" Quimby felt like a child who has wandered by mistake into a physics laboratory and has tried to ask questions as to why things are the way they are. Puzzled adults, with all the good will in the world, were trying to answer the

child. They weren't having much luck with the answers and the child wasn't having much luck in gaining understanding. "Why should there be a different shape of helix for each kind of plant. Why should this be, sir?"

Without noticing what he was saying, Quimby had added the "sir" of a respectful child speaking to his elders!

The hermit spread his hands in a helpless gesture. "Is way worlds are made, Edyn. Is way things are made different. Is energy different for square. Is different for triangle. Is different for string bean. Is different for watermelon —"

"But water is the same for all of them," Quimby protested. "The sun is the same. The soil is the same."

"Is not giving them water, is giving them juice to take place of water. See! No Water."

Dropping to his knees, the hermit dug with his knife blade around the stem of the watermelon vine. The ground there was rock hard and sandy, with no trace of moisture in it. Since this plant used gallons of water, Quimby had thought to find the soil laden with moisture. But it was dust dry.

"Plant takes sky juice, makes water itself from sky juice of right shape," the hermit said. He seemed to think he had said something important, something true, perhaps something basic to the universe.

Quimby had the feeling the hermit was right. About his words, somewhere, was the vague ring of truth. But, the correlation between specific form and specific energy! The idea shook him. He had thought of energy as a vague, amorphous *something.* Perhaps it was this, *somewhere!* But when it took on shape, it was here, it was different! Perhaps energy created shape as a device to work through, as a tool!

"How —" Quimby's mind was reeling from the effect of these ideas. They stretched the mind, did these concepts, then, when it was stretched as far as it could go, they stretched it still farther. The over-stretching was felt, vaguely, as mental pain. The mind pulled away from this pain, seeking refuge in practical things that could be understood.

"Do — Would those helices cost much to manufacture?" Quimby asked.

The hermit shrugged. "A cent, maybe. Maybe less. Could make forms, then make machines to wind wire on forms —" He shrugged again, a careless gesture that said this problem would be easy to solve.

Inside himself, Quimby felt a glow coming into existence. He was a scientist, and a humanitarian. He liked people as individuals and tended to glamorize the race. Here was a device that would help a great many people, that would help the race take another step toward some dimly understood goal that lay somewhere in the region of the summer stars.

As the glow grew stronger, he was aware that he had heard a cry in the distance. He was aware also that the hermit had heard it too. The bearded chin was up. The hermit

was suddenly like a dog sniffing for danger in the wind.

The cry came again. Now it was strong enough to be understood. A single word. *"Help!"*

V

At the sound, the hermit went into motion. Regardless of the effect of sharp rocks on bare feet or sharp thorns on already-torn overalls, the hermit was making a bee-line straight for a pile of huge boulders where the sugar bushes grew tall and green. Quimby had to run to keep up.

The hermit scrambled to the top of a boulder and stood looking down. Horror was on his face. Quimby scrambled up the slippery surface of the gray granite to stand beside him.

Below was a circular pit perhaps twelve feet deep. Like the structure down by the road where Quimby had parked his car, this pit was also made of rough stone, though with greater care than the first one. The inside of the pit was relatively smooth and offered no hold for clutching fingers or for feet. In the center of the pit a tall helix-supporting pole rose. Trying now to climb the pole was a man with the face of a wasp.

Quimby recognized him instantly as the man who had scowled at him outside the grocery store in Valley Bottom. The wasp had either fallen into the pit or had jumped into it or had tried to find hand and foot hold and had slipped from them to the bottom of the pit.

The wasp man was now trying to climb the pole that supported the big helix over the pit.

Quimby looked at the wasp man, gasped, and looked again to make sure.

The wasp man looked to be a child, he looked to be about three feet tall.

"Oh, the poor little man! Oh, the poor man little! Oh, the poor man is already little and will get littlier . . ." the hermit said.

"What?" Quimby gasped. "He will get littlier? What do you mean?"

"Is in no good place. Is in going back place! Is in making smaller place —" the hermit said.

Aware that others had arrived, the little man dropped from the pole back to the bottom of the pit. The face he turned upward was furiously angry. From under his clothes he drew what looked like a toy pistol.

"Get a ladder!" he shouted. "Get me out of here!" He emphasized his meaning by pointing his pistol at the hermit.

"It is too late, little man!" The wail was clearly audible in the hermit's voice now. "It is too late."

"Too late, hell!" Smoke spurted from the barrel of the toy pistol, flame leaped three inches upward, a bullet started upward — and was caught by some force. Quimby distinctly saw the pea-sized pellet appear in the air perhaps two feet beyond the muzzle of the gun, saw it hang there motionless for an instant, then saw it start to fall backward. As it fell, it seemed to grow smaller. What happened to it, he did not know.

"Get me out of here!" The voice of the little man was now the wail of a lost child crying out that the world was suddenly dark and that he was alone in it. While Quimby stared, the little man lost inches, became the size of an elf, became the size of a doll, became the size of a man's thumb, became the size of nothing at all. The voice calling from the pit was silent.

The only other sound was that of the wind going through the sugar bushes that grew thick and tall around the edge of the pit. The wind had a moaning sound in it.

Quimby slid down the boulder. He squatted on the ground under the sugar bushes and wiped sweat from his face and wondered why his stomach was tied into a knot. What had happened there in the pit? Under the pressure of enormous energies flowing in from the helix, had the atoms of the body of the little wasp man shrunk inward into smaller and smaller orbits? Quimby did not know the answer to this question, or even if such a question could be asked. The conventional picture of the atom was only a handy fiction. What if what was called matter was actually made up of uncounted billions of microscopic helices existing as forms in some subspace below the levels probed by the electron microscope? What if the effect of the energy pouring through the big helix over the pit was to tighten these billions of little helices, so that each became like a clockspring wound tight and hence occupying less space than when it was loosely wound? Would the effect be a shrinking in size?

Quimby did not know the answer to these questions. All he knew was that it was infernally hot under the sugar bushes, that he was sweating, and that his stomach had tied itself into a knot as tight as the coil of a rattlesnake.

Bare feet rasped on granite as the hermit slid down. The shoulders of the bearded man drooped.

"Who was he? I mean the little man who looked like a wasp?"

"I do not know, Edyn. See him before, I never did."

"The storekeeper at Valley Bottom said he had been there looking for you," Quimby said.

"Ah. Yes. Well. Perhaps. So he was looking for me, the man said. But how did he get past Archy and Archy's brothers?"

"Eh?" Quimby said.

"Is here many snakes with rattling tails. Is not good to come here without me, Edyn. How did the little man slip past them? This I do not understand, Edyn."

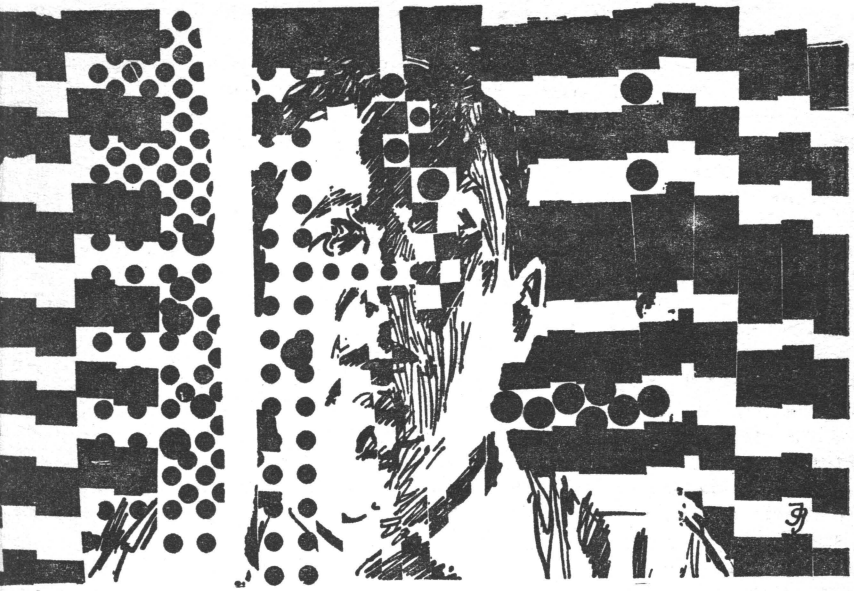
Quimby now realized — and additional shock came into him — that this plateau was guarded by rattlesnakes. The thought chilled him. It also tied an additional knot in his stomach.

"Where did he go?" Quimby asked.

"Back," the hermit said. "To the mother. Back."

"Back to the mother? What do you mean?"

"Back to life source. I call it the mother," the hermit said. "All



things come from her. All things go back to her."

Quimby found these concepts were stretching a mind already stretched to the breaking point. His mind, acting of its own volition, decided that the best solution was to refuse to understand the meaning in the hermit's words.

"Is — isn't he dead?"

"Oh, no," the hermit said. "Has just gone into the smallness beyond thought. Will come again, somewhere, sometime . . ." He spread his hands in a gesture which said he hoped his friend would understand that these words had no firm meaning.

"I suppose we should report this to the sheriff —" Quimby said, then was silent, wondering how such a report could get him anything except a possible sanity hearing. What would Kirk say if he told the observatory director what he thought he had seen? Quimby shuddered at the thought, then wondered how many miracles seen by humans are hidden away by honest men from fear of ridicule. "We'll decide that later," Quimby said, hastily.

In the west the sun was dropping down toward the top of a far-away mountain. The wind coming through the sugar bush seemed to have grown chilly.

"Maybe I had better get back to my car," Quimby said.

"Yes, yes, Edyn," the hermit said. He was sad.

Quimby rose. He followed the hermit toward the stone steps that led downward to the bottom of the canyon. Suddenly the hermit stop-

ped. Like a hunting dog smelling a foreign scent in the wind, the bearded man seemed to sense the existence of something. Then he started hunting through the scrub growth. Quimby's stomach tied another knot in itself as the object of the search came to light.

It was a dead rattlesnake.

"Was killed, then was hidden," the hermit said, anger in his voice.

While Quimby watched, he scooped a hole in the sandy soil, buried the snake there. Quimby had the impression that this strange, barefooted, bearded man conducted a burial rite of some kind over the body of a dead diamondback rattlesnake!

As they moved away toward the stone steps that led downward, dusk was slipping silently over the plateau. It was that time of the day when perspectives shift and commonplace things are suddenly seen as very unusual. The sorrowing hermit followed Quimby through the scrub growth.

The two boy scouts were sitting on the top step of the stairway that led down into the canyon and were looking down as if they were expecting to see someone coming up the steps. Their uniforms were torn by contact with thorns in the scrub brush of the area. Each had his staff lying ready to his right hand.

When they heard footsteps behind them, they turned quickly, each bringing up his staff as they came to their feet.

"Oh, hello," Quimby said. His mind was too much engrossed by the stretching it had recently taken for him to give much thought to teenage boy scouts. "Are you the lost scouts?"

They glanced at each other.

"We're not lost, sir," the taller said.

"No? Well, this afternoon the radio carried a news flash saying two boy scouts were lost in this vicinity and were being sought. There's an alert out. Probably helicopters will be over the area tomorrow morning."

Involuntarily, they looked at the sky, then back to Quimby.

"But I told you, we're not lost —" the taller began.

"All right, all right," Quimby said. "You may not be lost but just the same, somebody thinks you are." He turned to speak to the hermit. "Do you have a phone? I was thinking the boys might use it to let their parents know where they are. No use —"

Quimby's voice went into silence. As he was speaking, he had been turning. Now he was looking at the dim trail through the scrub growth. The trail was empty.

"Who were you talking to?" the voice of the taller boy scout came, from behind him.

"Why, to the man I call the hermit —" Quimby answered. "He was right here behind me — *Hermit!*" He lifted his voice in a shout.

The ground came up and hit him. It was just like that. He was not aware of anything else striking him, it was just that suddenly his knees let go and that the ground rushed up and hit him in the face.

VI

Quimby's first, dazed thought when he regained consciousness was that he was looking at the biggest flying saucer ever to pass through the skies of Planet Earth. His second thought was that he was looking at the full moon just high enough to flood the plateau with its light.

He decided — or perhaps he hoped — the second thought was correct.

He found he was lying on his side and as he struggled to get to his feet, he discovered that daze was in his mind. Something had happened? What had it been? He had met two lost boy scouts, he had turned to speak to the hermit — then he had fallen down.

"That's the way it was," he said to himself. "That's the way it happened.

He was lying and he knew it. True, things had happened in this way, but more had happened than just a fall.

Below, at the bottom of the long flight of steps, the canyon was a river of darkness that came from nowhere and went nowhere. At this moment, he sensed this darkness as an evil thing, then shook his head in an effort to clear the emotional tone from his mind. A wind moved across this haunted plateau where watermelons grew as big as beer kegs and where a pit existed in which a man went backward through infinitudes of time, possibly to a period when there was no life on the planet, with the polar forces at the organic level ruling the world. Then had come form, then forms, each with its own kind of energy.

Quimby had to shake his head again, to clear this thinking out of it. A strangeness was in him. Here in this place he had seen a man weep over a dead rattlesnake, insisting the snake had been his friend. Quimby suddenly found himself deciding this was no place for a rational man. Being a rational man, he knew he should walk calmly down the steps to his car, get in it and return to the radio telescope laboratory where dedicated men listened for the whisper of footfalls in faraway galaxies.

"Edyn!" The sound was a thin wail in a haunted night. "Edyn! Help!"

The cry came from the direction of the pit. Quimby ran toward the sound. He saw the hermit. The bearded man was on top of the rock which overlooked the pit. The hermit was not alone.

The two boy scouts were with him. Not only were they with him, they were holding him. One on each side of the hermit, they were holding him by the arms. Then they began to swing him as two men may swing between them a heavy object which they intend to toss to some distance.

They threw the hermit. Under the rays of the full moon, Quimby saw them throw the hermit. Wire twanged as his twisting body hit the helix over the pit. Then he went down. Down! *Down!* Down into something, down into nothing.

"Edyn!" he cried out as he fell. "Edyn —"

His voice grew more and more shrill. Quimby had the fantasy that the vocal chords which were producing the sound were growing smaller and smaller. And smaller still!

Then the wailing sound went into silence and the night was thick with haunt and Quimby's stomach felt again like an old, dried dishcloth.

On top of the rock, the two boy scouts executed what seemed to Quimby to be a short victory dance. He did not doubt that while he was unconscious they had hunted down the hermit and had dragged him to the rock overlooking the pit. He had seen them throw him into the hole that led to nowhere. Now he was watching them execute a victory dance, as if they had done something very important. The dance finished, they slid down from the huge rock. Walking, they passed within twenty feet of Quimby. He could hear their excited voices. They were not speaking English.

Quimby did not know the language they were using. He had never heard it spoken before. It seemed to him to consist of clacks, gutterals, and broken consonants. He watched them reach the top of the steps that led downward to the canyon, heard one cry out in sudden alarm, saw another search begin.

Quimby was a scientist, a research man, a trained specialist. His life had been spent in electronic laboratories and in lecture halls. With this background, it simply did not at first occur to him that he was the object of this search by two scouts on a haunted, moon and wind swept plateau where watermelons grew as big as beer kegs. Quimby lived in an orderly universe.

"They're hunting *me!*" he thought, suddenly.

Nothing in his training had prepared him for this moment. To him, death had always been a far-away, remote event, murder had been something that happened among criminals, and boy scouts had been nice kids who helped old ladies across busy streets. He did not know what to do.

His legs knew. Run! He listened to his legs, and listening, became a madman tearing his way through the scrub growth. Behind him, he heard a shout. He suspected this meant the scouts had seen him and were calling to him to stop. He continued running.

He did not see the taller scout lift his staff and point it toward him. Nor would he have seen the burst of radiation leap from the end of the staff and stab him like an arrow in the back even if he had been looking. The radiation was invisible. It did not hurt when it hit. It simply produced unconsciousness.

Quimby regained a flicker of consciousness as he was swung between the two scouts, was swung and flung from the top of the rock into the pit. This flicker of consciousness did not leave him in all that followed. Would to God it had! As he fell into the pit, he felt himself become smaller and smaller — and smaller still! Horror boiled through him.

VII

Instead of vanishing, the flicker of consciousness that remained to him seemed to become more alert, more intense, seemed to achieve a sharper focus. Because of this he was aware of agony. Each cell in his body seemed to be collapsing. The result was pain of a type Quimby had not known existed.

He did not know how long this pain lasted — time seemed to be distorted too — but it seemed to him that it had already lasted an eternity and was due to last forever. Like Lucifer falling from heaven — as the thought flicked through his mind, Quimby wondered if this was the way Lucifer had really fallen— he fell. And fell. And continued falling.

This was not a distance that could be measured in yards, in miles, or in light years; it was not a thing of the straight line. Indeed, the space through which he was falling seemed to know nothing of straight lines but seemed to be involved in curves and arcs of circles that were not true arcs as men knew them but were subtly distorted arcs, subtly twisted things, subtly different from the continuum that men knew.

Then the fall slowed and the pain receded. It did not vanish, not quite. He had the impression that it would never vanish entirely, that it would go with him as long as his body lasted, as a memory of a horrible distortion and as a warning to stay away from such distortions in the future. As the fall slowed, the energy current hit, picked him up like a floating chip, and rushed him along with it. The sound was like a rush of many waters. The feeling that he had was that now that his fall had stopped, he was caught in a flood that moved powerfully and with deep purpose toward some strange destiny that he did not and could never understand. In his mind was the thought that a universe that had such incredible energies in it was mad, then he realized that what was new was not necessarily mad.

The energy flow that was carrying him suddenly dashed itself against an obstruction that was like high cliffs on the shores of a forlorn sea, dashed itself against the cliffs and threw white spray sky-high, then turned and ran with silent intensity in another direction.

This was one tide. There were other tides, many other tides, that seemed to pass without interference through each other, other tides that carried other chips such as Quimby. Moving in such a tide, in obvious utter terror, he caught a glimpse of a little man who looked like a wasp. At this moment, Quimby would have welcomed the presence of a rattlesnake. He tried to shout at the little man — if a shout could have been uttered or heard here — but before he could catch the attention of the wasp man, the flowing energy had changed direction. Quimby found himself moving off at super speed in a direction he could not comprehend. Looking forward, he saw more high cliffs. And he recognized them! And he knew where he was!

He was in the mad structure the hermit had built at the bottom of the canyon. The bearded man had not told the truth — or not all of it — when he had said he had built this place for fun. No! The crooked walls, the paths that went nowhere, the fireplace where no fire had ever burned or ever would burn, all of these served to direct these energy flows, to turn the energy from one path to another, to twist it, to reduce the size of the flow and hence to increase its intensity, to change its frequency, to shift it upward to other kinds of energy, to lower the frequency so that now it pounded as a heavy surf upon a sullen, rocky shore, now it let spread itself out as waves spread themselves on the sandy beaches of south Pacific islands. So much would the mother energy do, if ordered! So much and much, much more!

Suddenly Quimby found himself wondering how the inside of a radio receiver would look if seen from the viewpoint of the energy flowing there! What would a transistor look like to the micro-waves flowing through it? How would the radiations see a capacitor? What would a transmitter look like to the hurrying energies jumping through it? And the program carried by the transmitter — whether TV or radio — How would a singer be seen from the viewpoint of the carrier wave? Suppose a human was reduced to the size of an ion. How would he see energy? Would he experience it as a flow of many waters? Would energy make a sound that resembled a waterfall?

"This is fantasy!" Quimby thought. Whatever it was, it was happening. He remembered now, how the hermit had been able to detect the flow of radio waves through a wire. Or through space. Had this strange ability enabled him to construct not only the crazy foundation for a building in the canyon but also the pit up above, plus the little helices that fed energy to the trees in the canyon and to the vegetables growing on the plateau? Other questions passed through Quimby's mind.

The flow was changing directions again. Was a resistor ahead? A capacitor? A transformer? All he could discern was that the current flow was changing direction and was now creating a whirlpool, an eddy that circled and circled and circled, now spinning upward as if it was caught in a helix similar to those on the plateau where watermelons grew as big as beer kegs and as sweet as honey. Now it was spinning down. Down and up. Up and down! Larger, smaller. Smaller, larger! Rhythms endlessly repeated. Rhythms that Quimby suddenly realized were a part of all life and of all living.

"Edyn!" a voice called.

Turning, Quimby saw the hermit. The bearded man was making swimming motions and was pointing that a stream of energy that spewed out of the eddy and took another direction, moving toward vaguely pink walls in the distance.

"That way, Edyn! That way out!" The hermit's thoughts came into his mind.

"What about you?" Quimby called back.

"Not now, Edyn. Maybe later, maybe not. Go, Edyn. Quickly go now. Time is!"

It did not seem strange to Quimby that he should be picking up directly the meaning in the mind of the bearded man. He also picked up the sense of enormous urgency. His mind translated this feeling of urgency into birth symbols. Kicking like a frog with both legs, he moved toward the stream of energy that diverged from the eddy and was caught by it.

"Go, Edyn, go!" the hermit's thinking came to him as from a great distance. "Go! Go! Go! Time is!"

Quimby went. Ahead of him, as though recognizing the meaning of the hermit's words, pink walls grew suddenly large, astonishingly pink, then opened. He went through this opening and into a tube that he could not describe. His dazed impression was that the walls of this tube were converging on him and were squeezing him, then he realized that as he had shrunk in size after being thrown into the pit on the plateau, so now he was increasing in size, and that the walls seemed to be converging because he was growing larger. Another pink wall appeared ahead of him. He was thrown head-first against it. Suddenly the wall let go, his mind and his whole body was wrenched and stretched in incredible pain, and he was hurled outward, head-first, to land in darkness.

At this moment, when consciousness was really extinguished, Quimby blessed the darkness. It was so good not to know, so good not to feel the enormous mind-stretching that came from knowing!

When consciousness came back to him, the first sound he heard was the beat of motors in the sky. Slowly, he awakened, to find himself lying in a thick of pine needles under one of the big trees in the bottom of the canyon. He had vague memories of having been hurled through the air and of having landed here, this happening in some remote past. Sitting up, he discovered his clothing was badly torn, this coming from his mad flight through the scrub growth on top of the plateau, he told himself. His clothing was also covered with a kind of slippery secretion which he thought was dew, as were his hands and his face. Trying to wipe this stuff away, he got to his feet. There, before his eyes, was the crazy structure the hermit had built. In the light of a mid-morning sun, it looked to be just what the hermit had said it was, the work of idle hands trying to find something to do to keep the devil away. In this light, it also looked crazy. Had he actually been reduced to microscopic size and had he flowed with energy currents between these strange walls?

"Nonsense!" Quimby thought, without any real sureness.

He saw his car, parked where he had left it the day before. Beyond the car, he caught a glimpse of the steps rising up to the plateau above

the canyon. Up there he again heard the sound of motors. Now he saw the helicopter dropping slowly toward a landing on the plateau. He went across the canyon and up the steps as fast as his legs and his wind would carry him.

Later, he would wonder about his motives for this action. He knew that two deadly boy scouts were — or had been — on that plateau. He knew they had flung him into an incredible pit. Why should he go into an area where such obvious danger lurked? Later, he would decide that his hunger for human companionship, as represented by the pilot of the helicopter, was so great that it overwhelmed all other emotions, all other thoughts. He wanted to be with somebody human! Nothing else mattered at this moment.

As Quimby, panting hard for wind, reached the top step, he saw that the ship was already down, that the pilot was out of it, and was staring at something on the ground. As Quimby approached, the pilot looked up at him. The expression on the pilot's face said that he, too, was glad to see another human at this moment. Very glad indeed. He pointed down.

VIII

In an open space where the brush was thin, the two boy scouts lay. Their bodies were so grotesquely swollen that Quimby needed only a glance to know that they were dead, also the cause of death. Beside them, gathered into a pile, were dozens of tiny helices. Like weapons that had fallen from fingers that no longer had the strength to hold them, the staff of each scout lay at the end of the outstretched hands.

The pilot's face was a mixture of horror and confusion. The horror came from the sight of the two bodies on the ground, the confusion came from another source.

"There must be a mistake somewhere," the pilot said.

"Where?" Quimby asked.

"Well, I came up here, as a volunteer, to help find the two missing scouts."

"So you've found them."

"But just as I spotted these two bodies, a report came over the radio saying that another search party had found them, in a cave at the lower end of Hermit's Canyon, dead — apparently murdered — their uniforms and their equipment gone." The pilot shook his head. "So that report must have been a mistake. Here they are. Right here." Shaking his head, he pointed toward the two bodies on the ground.

"Let's hope it wasn't a mistake," Quimby said.

"Huh? What —"

"It's just that the world is so much easier to understand if the report you heard is true, if there are four dead scouts —" Quimby stopped as he saw the horror mount on the face of the pilot. He shook his head and wiped sweat from his face. "Don't pay any attention to me," he continued. "The heat's got me."

"The heat? Yes, the heat," the pilot said. "It is hot up here." His

face lightened. Perhaps he wasn't dealing with a crazy man after all!

"Why don't you get on the radio in your ship and check out that report?" Quimby said.

"Sure. Sure. I'll do that."

As the pilot returned to his helicopter. Quimby dropped to one knee beside the pile of helices. The two — *creatures,* he now decided to call them — must have worked most of the night finding each little helix here on this arid plateau. He had no idea what they were going to do with them. Perhaps take them to some other country, perhaps even destroy them. More than he had ever wanted anything in his life, Ed Quimby wanted these little helices, wanted all of them. In them, hidden away in the shape of the twisted wires, perhaps in the metal itself, was a sure cure for famine on Planet Earth far into the future. Perhaps they held other secrets too. He had had no time to think about possible other secrets, the cure for famine had been and still was enough to engage all of his attention.

Perhaps it had also engaged the full attention of the creatures on the ground. In an event, they had been willing to murder to get it.

Carefully, Quimby picked up a helix.

In his mind again was the dream of the desert blooming with rich vegetation, with vegetables, melons, and berries, perhaps green with broad acres of wheat in the spring, brown with the wheat harvest in June and July.

In his fingers, the little helix

crumbled to dust, then to something less than dust. It fell away into nothing and became something less than nothing, into particles so tiny the eye could not detect them as they fell to the ground — if they fell! Perhaps they did not fall, perhaps they became motes flowing in the sunbeams.

As the little helix crumbled, something in Edward Quimby died. It was a dream of a world a little better than the world he knew, a world in which no man, no woman, and no child was every hungry. As the dream faded and fell away into particles the size of nothing at all, pain came into Quimby's mind, a spate of it, that he knew would never wholly leave him until in some time and in some place he saw with his own eyes the desert green with rich vegetation.

But perhaps the dream was still possible! He reached hastily for a second helix.

It too melted into nothing at the touch of his fingers.

Now he saw that all of the little helices were fading away, were falling off into nothing. This was happening as the sun rose higher and higher. He watched the sun of earth erode them away.

He felt as if his heart was eroding away with them.

He reached now for the nearest staff.

It, too, was crumbling. Somehow he was glad that this was happening, somehow the sight of the crumbling staff eased a little the pain that was in his heart. He saw, now, that the second staff was also eroding away.

Hoping that the two bodies would go the same way, he looked at them.

The bodies remained what they were, bodies, swollen and grotesque.

Footsteps told him the helicopter pilot was returning.

"The report was right," the pilot said. His manner was that of a man determined to report the truth no matter how much he wished the truth was something else.

"They found two bodies in this cave last night. Early this morning, they flew the fathers of the boys in here. The fathers identified their sons. But nobody knows anything about these two scouts!"

Wiping sweat from his face, he glared at the bodies on the ground.

"Put in another call and get the state troopers up here," Quimby said. "Let them solve the problem of the identity of these two bodies. Also let them find out if the uniforms these two are wearing came from the two scouts found dead in the cave." As he spoke, Quimby rose to his feet.

"I already called the troopers," the pilot said. "But what — *Hey! There at the edge of that bush! Hey! Look out!*"

"I've already seen him," Quimby said.

"But it's a rattlesnake!" the pilot shouted.

"I know," Quimby said.

"But, man —"

"Are they dangerous?" Quimby said.

"Dangerous?"

"When you have watched die the dream I have just watched die, it's

hard to get upset about a little thing like a rattler," Quimby said.

"But it's moving toward you!"

"I know," Quimby said.

As if its body was following an invisible helix that lay along the ground, the snake came out from under the bush. Quimby did not move. It stopped at his feet. In the manner of a cat meeting an old friend, it rubbed the right side of his right foot with its thick, triangular head, then followed its invisible helix into the bushes.

"God Almighty!" the pilot whispered.

"He said Archy would know me as a friend when we met again," Quimby said. "Perhaps — perhaps — perhaps —" He felt the pressures back of his eyes. "Perhaps somewhere, sometime, I may meet him again — perhaps the dream may live again —"

The pressures back of his eyes came outward in the form of tears. To Quimby, this did not matter. In his mind the dream was stirring and coming to life.

"Meet him again? Who are you talking about?" the dazed pilot asked.

"About the hermit, about the man who lived here. Perhaps we shall meet again. Perhaps, then, the little helices will no longer crumble into dust," Quimby said. He wiped the tears away from his eyes, moved through the brush.

"Where are you going?" the pilot asked.

"There is an old pit, perhaps an old reservoir for storing water, over in this direction," Quimby said.

Perhaps he hoped he would find the hermit sitting on the edge of this pit!

Going through the brush, with the pilot following, he saw another watermelon that was as big as a beer keg. He saw at a glance that the helix was gone from the soil where the vine rooted. The vine had already begun to wilt.

"Look at that watermelon!" the pilot shouted. "How could it have grown here? There must be water here, possibly springs —"

"Possibly," Quimby said.

He reached the big boulders beside the pit. The hermit was not sitting on the rim of the pit. There was no rim. There was no pit.

"Must have been a fire here," the pilot said.

The sugar bushes were burned and gone, the big boulders were blackened as from intense heat. The walls of the pit were gone, the pole that had supported the big helix was gone. The soil around the pit had been converted by something similar to intense heat into a dry mulch which puffed up under their feet as they walked on it.

Circling the spot where the pit had been, Quimby found three v's made of segments of broken quartz such as could be found in many intruding veins in this region. Like arrow heads, the tips of the v's pointed toward the pit. If Quimby made anything of these, he kept his ideas to himself.

As they returned to the clearing where the two bodies lay, they saw another rattlesnake, then another,

and another, and another. The pilot was badly shaken, wanting to know how any human could have lived in a place so infested with reptiles. Quimby had no answer to this question. He did not mention that he had seen at least ten more snakes than the pilot had glimpsed, all moving toward the rim of the plateau as if they were quitting the plateau, perhaps forever.

"Do you suppose those snakes killed those scouts?" the pilot asked.

"What else?" Quimby asked.

"But their bodies are *so* swollen—"

"If a dozen of the fat fellows who live up here struck you, your body would swell too, as you died," Quimby said.

"Don't talk like that!" the pilot said. "Where are you going now?"

"Down to the bottom of the canyon."

"I'll go with you!" the pilot hastily volunteered.

"You had better stay here, with your helicopter," Quimby said. "I'll wait down below and when the troopers arrive, I'll send them up to you."

As he reached the bottom of the steps, Quimby saw a car was pulling to a stop beside his automobile. He moved toward it—and recognized the driver as the owner of the combination grocery store and beer joint at Valley Bottom, L. Kindell.

"On the radio there's talk about some missing boy scouts—" Kindell began.

"Yesterday, when I stopped at your place, I saw a small man who looked like a wasp," Quimby said.

The grocer stared at him in nonrecognition. "I don't believe I remember you," he said.

"That isn't important," Quimby said. "The little man with a face that looked like a wasp, he's important. You said he had stopped at your store and had asked about the hermit who lives here—"

"Me? I said that? Mister, what are you talking about? I came out here as a public-spirited citizen."

"The little man with a face like a wasp," Quimby repeated. "Did somebody hire him to come here and find out how the hermit could grow such big watermelons on top of a waterless plateau."

"Mister—" the grocer repeated.

"The secret of growing watermelons like the one you said the hermit tried to trade you for gasoline would be worth billions of dollars," Quimby continued. He watched Kindell's face. There were puffy pouches under the man's eyes. The skin was turning gray.

"You mean you—Mister, are you accusing me—" The man's cheeks puffed out from the words he wanted to use.

"Accusing you hadn't occurred to me—until now," Quimby said.

"Mister!"

"The little man with a face like a wasp probably won't be back," Quimby said.

"Won't be back? Eh? What happened to him—I mean—" The grocer's face went from gray to white and the pouches under his eyes seemed to enlarge. "Mister, I heard on the radio about two miss-

ing boy scouts. I came out here to do my duty as a good citizen to volunteer to help find them."

"Somewhere down the canyon are two dead scouts," Quimby said. He jerked his thumb toward the narrow treacherous road that led downward. "There are two more on top of the plateau."

"But that makes four. The radio said two —"

"They have increased in numbers since that report."

"Mister —"

"Take your pick of the boy scouts," Quimby said. "But I doubt if you will ever find the little man who looked like a wasp. I don't think anybody will ever be able to find him."

The grocer jabbed at the throttle of his car. The rear wheels kicked dirt and gravel into the air. The car disappeared among the pine trees, gaining speed, going down the canyon.

Dimly, Quimby heard the ripping sound of the crash. He knew what had happened. The car had gone out of control and had plunged off the narrow trail and into the canyon. He didn't bother to go look at the accident.

It was too far away, he was too tired, the state troopers would look into it when they arrived. And anyhow, he felt that whatever had happened to the grocer, the fellow had richly deserved it.

Quimby sat down on the stone bench beside the structure that the hermit had built, "just for fun". Now he saw something that he had not noticed before.

Worked into the stone work were many fragments of quartz. Moving closer, he studied these crystals with care. They were identical with the quartz fragments that had been used to build v's around the pit up above, v arrows that had pointed at the pit which was no longer a pit, which was no longer anything at all except ashes.

Quimby knew then that in some way that he did not understand at all these quartz crystals controlled the flow and the focus of some unknown form of energy.

On the plateau, the energy had destroyed a stone pit. Down here in this structure, it — Quimby sighed. He did not know what the energy did down here and he was afraid to try to remember what he had experienced. Rising to his feet, he studied the channels that formed the inside of the incredible foundation the hermit had built. There was a vague familiarity about it somewhere but he could not put his finger on the familiarity. He saw, however, that additional quartz crystals lined the insides of the "foundation." If electromagnetic energies flowed through these channels, his fingers were not sensitive enough to detect them. If a sub-microscopic being that he had once called "Hermit" moved there, his eyes were not sensitive enough to discern it. Nor could he see anywhere a little man with a face like a wasp.

The fact that he could see neither proved nothing except the limitations of his vision.

A siren wailed in the upper reaches of Hermit's Canyon. Quim-

by sighed. When the car pulled up, he went to meet the two state troopers and to explain his presence here.

"I came to help look for two missing boy scouts," he said. "A helicopter pilot on top of the plateau has found something."

He watched the two officers climb the steps that led to the top of the plateau.

"Goddamn it, Ed," Kirk said. "Goddamn it!" Kirk's voice was weak. "Who was the hermit? Where did those two extra boy scouts come from? Why did they destroy that pit? Why did they gather all of those helices in one place? Why did the helices turn to powder? How did the helices work? What happened to the hermit? Goddamn it, I saw him detect radio waves with his fingers! Goddamn it, Ed—"

Quimby did not attempt to answer. He moved to the window of the director's office, stood looking out at the radio telescope, stood looking down at the tangle of canyons and plateaus so far below. He knew the radio telescope was functioning again.

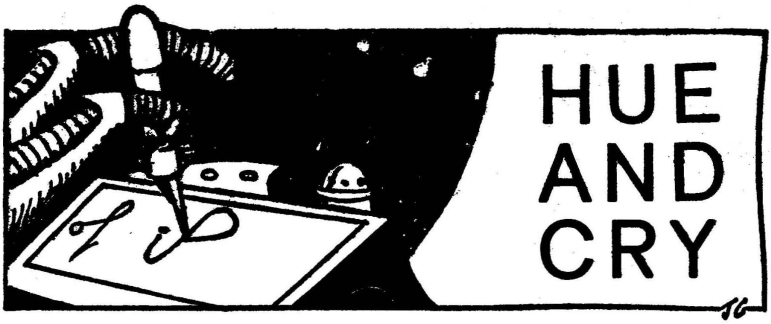
"We've got the scope pointed in the wrong direction," he said.

"Eh?" the director asked.

"We've got it pointed out, to listen for footfalls out yonder where the galaxies are," Quimby continued. "We should turn it around and point it down there below us . . ."

As his voice slipped into uneasy silence, cold chills went up his spine.

"Down there—" He pointed. "Down there is where they're walking." END



Dear Editor:

I enjoyed the story *Origin of Species* in the October issue of *If*, but I must say that Mr. Robert F. Young committed a howling blunder. On page 68 he very carefully specifies the south central plateau of France as the place of action. But then the hero wonders about *Canis dirus*, the dire wolf, about Mylodon and Megatherium, all of which lived 50,000 years later in California and did not, at any time, live in Europe. He continues the mixup by seeing a condor flying around. Like the sloths, the condor is most typically an American bird. The proper bird for that landscape would have been an Alpine stone eagle.

In conclusion, let me join in Sprague de Camp's plea: since "Cro-Magnon" is a place name, the people should be called the Cro-Magnards. — Willy Ley.

● All right, but *what* kind of bird is the sloth? — *Editor.*

* * *

Dear Editor:

I've just finished *Skylark DuQuesne* and it's the best serial I've read since *Way Station*, also known as *Here Gather the Stars.*

But that is not the reason I have written this letter. Ordinarily I don't care about covers as long as the stories are good, but lately I've noticed that *If's* covers have been poor if not downright nauseating. Pederson and McKenna are a pair of the worst artists I have ever seen. The June and July covers attest to this, although I think McKenna is improving and Gaughan's illustrations brighten up the scene somewhat.

Another complaint I have is about your bindings (*Galaxy* and *Worlds of Tomorrow* included). Why do you have to spatter them with all the colors of the rainbow? You also do not have to list the authors' names there; the contents page does that job nicely. How about having binders to cover up the whole mess?

If has come a long way since you first took over in 1961, and it's just copped my vote for a Hugo! — Mike Buchta, 5821 West Adler, Milwaukee, Wisconsin 53214.

* * *

Dear Editor:

Sir, it will be of great assistance to us, the members of the Rocketry Club of the Indian Institute of Technology, if you could name for us a rocketry club and organization from which we could have first-hand information about what is going on in U.S. regarding space.

Personally, I would be glad if you could name me pen-friends in U.S. too so that I could understand the Americans better and thus extend world friendship.— Shyamsunder Goenkā, Room No. 244, Hostel II, Indian Institute of Technology, Powai, Bombay 76, India.

* * *

Dear Editor:

Information please! What is the title and author of the story described below?

A man is taken from his spacecraft to fight a creature, described as a "Red Roller," with which Earth is at war. An invisible wall separated them which only unconscious or dead things can pass. The loser's race is to be destroyed; and the Red Roller is killed.

I would also like to know of any sf clubs I can join. — Linda Leach, 33012 Avondale, Wayne, Michigan 48184.

* * *

Dear Editor:

I haven't read a single story in the October '65 ish of *If*, just the editorial page and the readers' column. Already I am convinced by one of the letters that you printed.

It usually takes me a few days to become incensed at a letter or story, or comment that you or somebody else makes on the readers' page. However, this issue was different.

Bruce Berry's letter had me enraged from the first paragraph. That any sane sf fan who has read over one issue of *If* and can still make a comment like, "So far as I have been able to find out, their opinions of *W.O.T.* & *If* are quite low." is beyond MY imagination! I have made no six-year study of reader reactions to editorial policies nor have I been reading sf for thirty-odd years. I'm just a teenager with a wild imagination that caters to, and desires sf. I've been reading sf for almost three years now and I have not been able to find magazines anywhere, anytime that contains stories such as yours that challenge my imagination and intelligence as much as the stories in *Galaxy*, *W.O.T.*, and *If*. All my friends that read sf agree with me that your magazines are tops.

These are just my first impressions that I got from reading Mr. Berry's letter. After I finished reading it once I went back and read it again. This time I noticed all the good and valid points that he made in his letter. I read it one more time to make sure I understood everything that he said before I wrote.

Count me a staunch supporter of Mr. Bruce Berry.

I almost forgot. Mr. Pohl, you're a great writer but please don't waste your time on lousy stories like *Under Two Moons*. It was pathetique! It was too tongue-in-cheek to be palatable; in fact, it was almost like one of the worse MAN FROM U.N.C.L.E. shows. — Drake Maynard, 2509 Columbine Lane, Burlington, North Carolina 27215.

* * *

● That's about as far as we go this issue. Our "First", of course, is *Cindy-Me* by Don F. Briggs. Hope you like it — and hope to see you again next month for the next big chunk of the Heinlein story, a first-rate complete short novel by C. C. MacApp, a "first" novelette and — well, come around and see for yourself!

— *The Editor.*

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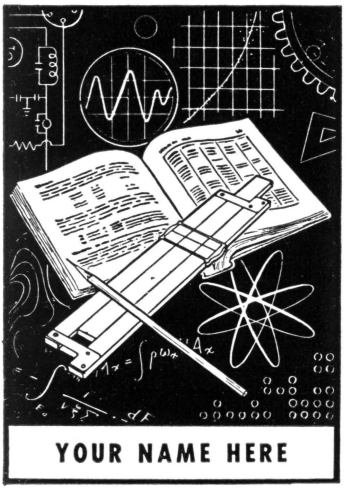

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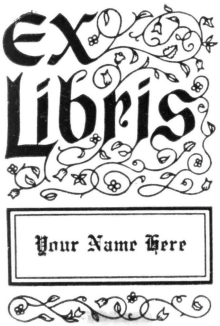

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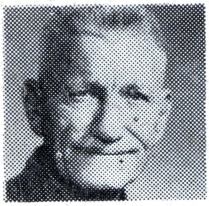

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Mrs. Florence Humphrey, Cincinnati, won $500.00 on just one puzzle.

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