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SCIENCE FACT

**AND SEVEN TIMES
NEVER KILL MAN**
George R.R. Martin

Norman Spinrad • Roger Zelazny



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A Calendar
of Upcoming
Events

June 21-July 18, 1975:

Annual World Game Studies workshop. Week one—Comprehensive Anticipatory Design Science. Weeks two-four—Use of principles. Registration: week one only \$150; all four weeks \$350. Info: Workshop/Earth Metabolic Design, Box 2016 Yale Station, New Haven, Connecticut 06520.

July 3-July 6, 1975:

WESTERCON 28 (West Coast Science Fantasy Conference) at Hotel Leamington, Oakland, California. Guest of Honor—David Gerrold; Special Guests of Honor—Ian and Betty Ballantine; Fan Guests of Honor—Charlie and Dena Brown. Registration: \$6 in advance. Info: Post Office Box 24560, Los Angeles, California 90024.

July 4-July 6, 1975:

RE-KWest-CON at Holiday Inn

Crosstown, Kalamazoo, Michigan. Guest of Honor—Frank Kelly Freas. Registration: \$7 attending, \$2 nonattending. Info: Re-KWest-Con, 1309½ Westnedge, Kalamazoo, Michigan 49008 (include SASE).

July 18-July 20, 1975:

BYOBCON V at Muehlebach Hotel, Kansas City, Missouri. Guest of Honor—Robert Bloch; Fan Guests of Honor—Linda & Ron Bushyager. Registration: \$5 in advance, \$7 at the door. Info: 1915 Mews Drive, Kansas City, Missouri 64131.

July 25-July 27, 1975:

RIVERCON 75 (13th Deep South SF Conference) at Stouffers Louisville Inn, Louisville, Kentucky. Registration: \$5 in advance. Info: Box 8251, Louisville, Kentucky 40208.

August 14-August 17, 1975:

AUSSIECON 75 (33rd World Science Fiction Convention) at Southern Cross Hotel, Melbourne, Australia. Guest of Honour—Ursula K. LeGuin; Fan Guests of Honour—Susan Wood and Mike Glicksohn; Australian Guest of Honour—Donald H. Tucker. Info: Box 4039, Melbourne 3001, Australia. US agents—Jack Chalker, 5111 Liberty Heights Avenue, Baltimore, Maryland 21207 or Fred Patton, 11863 West Jefferson Boulevard, #1, Culver City, California 90230. Canadian agent—John Millard, 86 Broadway Avenue, #18, Toronto, Ontario M4P 1T4. Registration: \$12 attending, \$4 non-attending.

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energy marketplace

In May 1965, Analog published a science fact article titled "Magnetohydrodynamics." It described how MHD generators were being developed to deliver more kilowatts per unit of input fuel, cleanly and efficiently, even from the dirtiest kinds of fuels, such as high-sulfur coal.

At that time, MHD generators were still in the laboratory stage, even though some of them were quite large chunks of apparatus. One of them had achieved a peak output of more than 30 megawatts, for running times of a few minutes. Another, smaller, MHD generator had been run successfully for 200 hours continuously, to demonstrate that the materials and high-temperature problems of MHD technology were in hand.

The next step was to build a pilot plant, capable of delivering about 50 megawatts while running continuously for 10,000 hours.

The pilot plant turned out to be a cantankerous beast, and it took several years to get the MHD generator in it to operate reliably. But, thanks to the foresight and daring

of the electric utilities and the Federal Government, the scientists and engineers straightened out the bugs in the pilot plant and got it to perform reliably at about 58 percent efficiency—a 45 percent increase in the efficiency over the best turbine generators in use.

With uncommon boldness, American industry pushed ahead and began to deploy MHD generators, aware of the fact that environmental and safety problems were holding back the deployment of nuclear electric generators, and that the US was becoming overly dependent on foreign sources of oil.

By a stroke of fate, the first commercial MHD generators went “on-line” late in 1972, just as the Middle East exploded with the “Yom Kippur War,” in which Israel again squared off against Egypt and Syria. When Saudi Arabia and the other oil-producing nations enacted their famous oil embargo, Europe was nearly paralyzed, as was Japan. Fortunately, the US had abundant domestic oil supplies, and the advent of MHD generators had made it possible to begin using coal for our entire electrical production capacity. America could laugh at the Arab oil embargo, and did.

Today, in mid-1975, the Arab oil embargo has collapsed. The US is selling MHD and other advanced energy technology hardware and know-how to Europe and Japan.

The American economy, which had shown signs of weakening because of gold drain and deficit of overseas trade balances, became strong and booming again because of the sudden spurt in exports of energy technology. Unemployment dwindled in the US, the standard of living rose, and even the angriest of minorities found that jobs and affluence did more for them than demonstrations and riots.

Sounds beautiful, doesn't it? It's a science fiction story, of course. An “alternate universe” that might have been.

Up until the time of that article in *Analog* in 1965, the MHD program was moving toward the kind of 1975 pictured in this alternate universe. But, as noted in the April 1974 Editorial, when the electric utility industry and the Federal Government were faced with the decision to invest in a pilot MHD plant, they backed off. The pilot plant was built, all right. But in Moscow, not in the US. It is still being tinkered with, and nowhere near the stage where MHD can be said to be a reliable source of electric power.

If the power companies and the Government had shown some “foresight and daring” back in 1965, MHD could have been going on-line right now. As it is, after letting the MHD idea languish for more than five years, the industry and government began to re-investigate the concept and tried to start



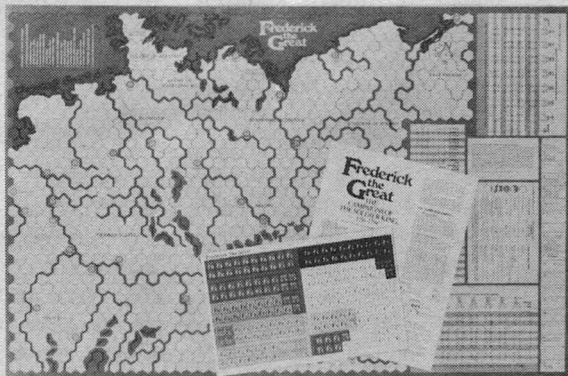
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up the project again. It has been almost as bad as starting from scratch. The state of Montana announced late last year it will sponsor an MHD research institute at the Montana College of Mineral Science and Technology, and an MHD Engineering Test Facility—a slow-motion version of the original pilot plant idea—will be constructed in Montana. Too little, and probably too late.

So far, this has been the story of almost every avenue of research on better and more efficient energy systems. We have the basic scientific understanding and a good deal of engineering knowledge to make practical energy systems out of solar cells, hydrogen fuels, MHD, and other ideas. But the decisions that have been made, by private industry and Federal Government alike, have not promoted any renaissance in the energy R&D areas. In this issue's science fact article, Norman Spinrad discusses a plan of action that could make us an energy-rich nation, rather than a nation facing energy starvation. But if the past performance of the nation's decision-makers is any criterion, we'd all better start harvesting firewood.

It will take more than reorganizing Government agencies, changing AEC into ERDA while keeping the same people in the same jobs, to solve the energy problem. It will take more than rebates on new cars by an industry that has fought ev-

ery step toward better, more efficient engines. (Recognize that, in the long run, the more efficiently an auto's engine runs, the less pollution it will emit. The Detroit barons who blame pollution controls for all the ills of the industry are being much less than honest, and they know it.)

The ideas are available. But they are either being ignored, or worse, "studied" to death by committees whose major function is the prevention of any change in the status quo.

In September 1973, Analog ran an article by William J.D. Escher on the use of hydrogen as a fuel for automobiles. In fact, Escher proposed a system that used hydrogen and oxygen, which would operate at great efficiency and emit nothing more offensive than plain water. In his article, Escher showed how a "hydrogen economy" could be developed, in which hydrogen—taken from water—could replace all the fossil fuels we now burn.

What has happened to the hydrogen economy? Escher and all his colleagues are still making their presentations, writing their papers, and making progress that is so slow that it is practically unmeasurable. Not because of technical difficulties. They haven't been able to get to the point where technical difficulties begin to arise! They're stalled close to the starting line because they cannot get funding ade-

continued on page 176

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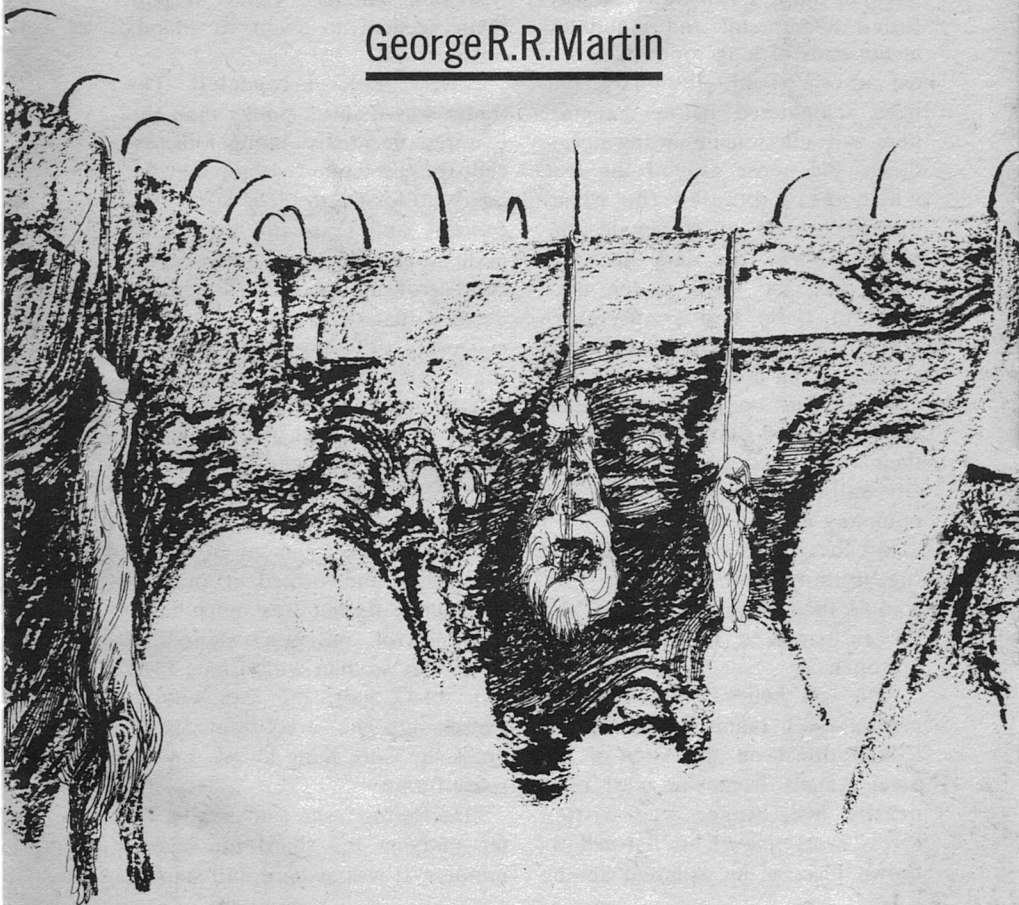
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AND seven times NEVER KILL MAN

There are many ways to
turn an intelligent creature into a slave;
reversing the procedure is not so easy.

George R.R. Martin



JOHN SCHOENHERR

*Ye may kill for yourselves,
and your mates,
and your cubs as they need,
and ye can;*

*But kill not for pleasure of killing,
and seven times never kill Man!*

—Rudyard Kipling

Outside the walls the Jaenshi children hung, a row of small gray-furred bodies still and motionless at the ends of long ropes. The oldest among them, obviously, had been slaughtered before hanging; here a headless male swung upside down, the noose around the feet, while there dangled the blast-burned carcass of a female. But most of them, the dark hairy infants with the wide golden eyes, most of them had simply been hung. Toward dusk, when the wind came swirling down out of the ragged hills, the bodies of the lighter children would twist at the ends of their ropes and bang against the city walls, as if they were alive and pounding for admission.

But the guards on the walls paid the thumping no mind as they walked their relentless rounds, and the rust-streaked metal gates did not open.

“Do you believe in evil?” Arik neKrol asked Jannis Ryther as they looked down on the City of the Steel Angels from the crest of a nearby hill. Anger was written across every line of his flat yellow-brown face, as he squatted among

the broken shards of what once had been a Jaenshi worship pyramid.

“Evil?” Ryther murmured in a distracted way. Her eyes never left the redstone walls below, where the dark bodies of the children were outlined starkly. The sun was going down, the fat red globe that the Steel Angels called the Heart of Bakkalon, and the valley beneath them seemed to swim in bloody mists.

“Evil,” neKrol repeated. The trader was a short, pudgy man, his features decidedly mongoloid except for the flame-red hair that fell nearly to his waist. “It is a religious concept, and I am not a religious man. Long ago, when I was a very child growing up on ai-Emerel, I decided that there was no good or evil, only different ways of thinking.” His small, soft hands felt around in the dust until he had a large, jagged shard that filled his fist. He stood and offered it to Ryther. “The Steel Angels have made me believe in evil again,” he said.

She took the fragment from him wordlessly and turned it over in her hands. Ryther was much taller than neKrol, and much thinner; a hard bony woman with a long face, short black hair, and eyes without expression. The sweat-stained coveralls she wore hung loosely on her spare frame.

“Interesting,” she said finally, after studying the shard for several minutes. It was as hard and smooth

as glass, but stronger; colored a translucent red, yet so very dark it was almost black. "A plastic?" she asked, throwing it back to the ground.

NeKrol shrugged. "That was my very guess, but of course it is impossible. The Jaenshi work in bone and wood and sometimes metal, but plastic is centuries beyond them."

"Or behind them," Ryther said. "You say these worship pyramids are scattered all through the forest?"

"Yes, as far as I have ranged. But the Angels have smashed all those close to their valley, to drive the Jaenshi away. As they expand, and they *will* expand, they will smash others."

Ryther nodded. She looked down into the valley again, and as she did the last sliver of the Heart of Bakkalon slid below the western mountains and the city lights began to come on. The Jaenshi children swung in pools of soft blue illumination, and just above the city gates two stick figures could be seen working. Shortly they heaved something outward, a rope uncoiled, and then another small dark shadow jerked and twitched against the wall. "Why?" Ryther said, in a cool voice, watching.

NeKrol was anything but cool. "The Jaenshi tried to defend one of their pyramids. Spears and knives and rocks against the Steel Angels with lasers and blasters and

screechguns. But they caught them unaware, killed a man. The Proctor announced it would not happen again." He spat. "Evil. The children trust them, you see."

"Interesting," Ryther said.

"Can you do anything?" neKrol asked, his voice agitated. "You have your ship, your crew. The Jaenshi need a protector, Jannis. They are helpless before the Angels."

"I have four men in my crew," Ryther said evenly. "Perhaps four hunting lasers as well." That was all the answer she gave.

NeKrol looked at her helplessly. "Nothing?"

"Tomorrow, perhaps, the Proctor will call on us. He has surely seen the *Lights* descend. Perhaps the Angels wish to trade." She glanced again into the valley. "Come, Arik, we must go back to your base. The trade goods must be loaded."

Wyatt, Proctor of the Children of Bakkalon on the World of Corlos, was tall and red and skeletal, and the muscles stood out clearly on his bare arms. His blue-black hair was cropped very short, his carriage was stiff and erect. Like all the Steel Angels, he wore a uniform of chameleon cloth (a pale brown now, as he stood in the full light of day on the edge of the small, crude spacefield), a mesh-steel belt with hand-laser and communicator and screechgun, and a stiff red Roman collar. The tiny figurine that hung

on a chain about his neck—the pale child Bakkalon, nude and innocent and bright-eyed, but holding a great black sword in one small fist—was the only sign of Wyatt's rank.

Four other Angels stood behind him: two men, two women, all dressed identically. There was a sameness about their faces, too; the hair always cropped tightly, whether it was blond or red or brown, the eyes alert and cold and a little fanatic, the upright posture that seemed to characterize members of the military-religious sect, the bodies hard and fit. NeKrol, who was soft and slouching and sloppy, disliked everything about the Angels.

Proctor Wyatt had arrived shortly after dawn, sending one of his squad to pound on the door of the small gray prefab bubble that was neKrol's trading base and home. Sleepy and angry, but with a guarded politeness, the trader had risen to greet the Angels, and had escorted them out to the center of the spacefield, where the scarred metal teardrop of the *Lights of Jolostar* squatted on three retractable legs.

The cargo ports were all sealed now; Ryther's crew had spent most of the evening unloading neKrol's trade goods and replacing them in the ship's hold with crates of Jaenshi artifacts that might bring good prices from collectors of extraterrestrial art. No way of know-

ing until a dealer looked over the goods; Ryther had dropped neKrol only a year ago, and this was the first pickup.

"I am an independent trader, and Arik is my agent on this world," Ryther told the Proctor when she met him on the edge of the field. "You must deal through him."

"I see," Proctor Wyatt said. He still held the list he had offered Ryther, of goods the Angels wanted from the industrialized colonies on Avalon and Jamison's World. "But neKrol will not deal with us."

Ryther looked at him blankly.

"With good reason," neKrol said. "I trade with the Jaenshi, you slaughter them."

The Proctor had spoken to neKrol often in the months since the Steel Angels had established their city-colony, and the talks had all ended in arguments; now he ignored him. "The steps we took were needed," Wyatt said to Ryther. "When an animal kills a man, the animal must be punished, and other animals must see and learn, so that beasts may know that man, the seed of Earth and child of Bakkalon, is the lord and master of them all."

NeKrol snorted. "The Jaenshi are not beasts, Proctor, they are an intelligent race, with their own religion and art and customs, and they . . ."

Wyatt looked at him. "They have

no soul. Only the children of Bakkalon have souls, only the seed of Earth. What mind they may have is relevant only to you, and perhaps them. Soulless, they are beasts.”

“Arik has shown me the worship pyramids they build,” Ryther said. “Surely creatures that build such shrines must have souls.”

The Proctor shook his head. “You are in error in your belief. It is written clearly in the Book. We, the seed of Earth, are truly the children of Bakkalon, and no others. The rest are animals, and in Bakkalon’s name we must assert our dominion over them.”

“Very well,” Ryther said. “But you will have to assert your dominion without aid from the *Lights of Jolostar*, I’m afraid. And I must inform you, Proctor, that I find your actions seriously disturbing, and intend to report them when I return to Jamison’s World.”

“I expected no less,” Wyatt said. “Perhaps by next year you will burn with love of Bakkalon, and we may talk again. Until then, the world of Corlos will survive.” He saluted her, and walked briskly from the field, followed by the four Steel Angels.

“What good will it do to report them?” neKrol said bitterly, after they had gone.

“None,” Ryther said, looking off toward the forest. The wind was kicking up the dust around her, and her shoulders slumped, as if she were very tired. “The Jamies

won’t care, and if they did, what could they do?”

NeKrol remembered the heavy red-bound book that Wyatt had given him months ago. “And Bakkalon the pale child fashioned his children out of steel,” he quoted, “for the stars will break those of softer flesh. And in the hand of each new-made infant He placed a beaten sword, telling them, ‘This is the Truth and the Way.’” He spat in disgust. “That is their very creed. And we can do nothing?”

Her face was empty of expression now. “I will leave you two lasers. In a year, make sure the Jaenshi know how to use them. I believe I know what sort of trade goods I should bring.”

The Jaenshi lived in clans (as neKrol thought of them) of twenty to thirty, each clan divided equally between adults and children, each having its own home-forest and worship pyramid. They did not build; they slept curled up in trees around their pyramid. For food, they foraged; juicy blue-black fruits grew everywhere, and there were three varieties of edible berries, a hallucinogenic leaf, and a soapy yellow root the Jaenshi dug for. NeKrol had found them to be hunters as well, though infrequently. A clan would go for months without meat, while the snuffling brown bushogs multiplied all around them, digging up roots and playing with the children.

Then suddenly, when the bushog population had reached some critical point, the Jaenshi spearmen would walk among them calmly, killing two out of every three, and that week great hog roasts would be held each night around the pyramid. Similar patterns could be discerned with the white-bodied tree slugs that sometimes covered the fruit trees like a plague, until the Jaenshi gathered them for a stew, and with the fruit-stealing pseudomonks that haunted the higher limbs.

So far as neKrol could tell, there were no predators in the forests of the Jaenshi. In his early months on their world, he had worn a long force-knife and a hand-laser as he walked from pyramid to pyramid on his trade route. But he had never encountered anything even remotely hostile, and now the knife lay broken in his kitchen, while the laser was long lost.

The day after the *Lights of Jolostar* departed, neKrol went armed into the forest again, with one of Ryther's hunting lasers slung over his shoulder.

Less than two kilometers from his base, neKrol found the camp of the Jaenshi he called the waterfall folk. They lived up against the side of a heavily-wooded hill, where a stream of tumbling blue-white water came sliding and bouncing down, dividing and rejoining itself over and over, so the whole hillside was an intricate glittering web of

waterfalls and rapids and shallow pools and spraying wet curtains. The clan's worship pyramid sat in the bottommost pool, on a flat gray stone in the middle of the eddies; taller than most Jaenshi, coming up to neKrol's chin, looking infinitely heavy and solid and immovable, a three-sided block of dark, dark red.

NeKrol was not fooled; he had seen other pyramids sliced to pieces by the lasers of the Steel Angels and shattered by the flames of their blasters; whatever powers the pyramids might have in Jaenshi myth, whatever mysteries might lie behind their origin, it was not enough to stay the swords of Bakkalon.

The glade around the pyramid-pool was alive with sunlight when NeKrol entered, and the long grasses swayed in the light breeze, but most of the waterfall folk were elsewhere. In the trees perhaps, climbing and coupling and pulling down fruits, or ranging through the forests on their hill. The trader found only a few small children riding on a bushog in the clearing when he arrived. He sat down to wait, warm in the sunlight.

Soon the old talker appeared.

He sat down next to neKrol, a tiny shriveled Jaenshi with only a few patches of dirty gray-white fur left to hide the wrinkles in his skin. He was toothless, clawless, feeble; but his eyes, wide and golden and pupilless as those of any Jaenshi, were still alert, alive. He was the talker of the waterfall folk, the one

in closest communion with the worship pyramid. Every clan had a talker.

"I have something new to trade," neKrol said, in the soft slurred speech of the Jaenshi. He had learned the tongue before coming here, back on Avalon. Tomas Chung, the legendary Avalonian lingsp, had broken it centuries before, when the Kleronomas Survey brushed by this world. No other human had visited the Jaenshi since, but the maps of Kleronomas and Chung's language-pattern analysis both remained alive in the computers at the Avalon Institute for the Study of Non-Human Intelligence.

"We have made you more statues, have fashioned new woods," the old talker said. "What have you brought? Salt?"

NeKrol undid his knapsack, laid it out, and opened it. He took out one of the bricks of salt he carried, and laid it before the old talker. "Salt," he said. "And more." He laid the hunting rifle before the Jaenshi.

"What is this?" the old talker asked.

"Do you know of the Steel Angels?" neKrol asked.

The other nodded, a gesture neKrol had taught him. "The godless who run from the dead valley speak of them. They are the ones who make the gods grow silent, the pyramid breakers."

"This is a tool like the Steel An-

gels use to break your pyramids," neKrol said. "I am offering it to you in trade."

The old talker sat very still. "But we do not wish to break pyramids," he said.

"This tool can be used for other things," neKrol said. "In time, the Steel Angels may come here, to break the pyramid of the waterfall folk. If by then you have tools like this, you can stop them. The people of the pyramid in the ring-of-stone tried to stop the Steel Angels with spears and knives, and now they are scattered and wild and their children hang dead from the walls of the City of the Steel Angels. Other clans of the Jaenshi were unresisting, yet now they too are godless and landless. The time will come when the waterfall folk will need this tool, old talker."

The Jaenshi elder lifted the laser and turned it curiously in his small withered hands. "We must pray on this," he said. "Stay, Arik. Tonight we shall tell you, when the god looks down on us. Until then, we shall trade." He rose abruptly, gave a swift glance at the pyramid across the pool, and faded into the forest, still holding the laser.

NeKrol sighed. He had a long wait before him; the prayer assemblies never came until sundown. He moved to the edge of the pool and unlaced his heavy boots to soak his sweaty, calloused feet in the crisp cold waters.

When he looked up, the first of

the carvers had arrived; a lithe young Jaenshi female with a touch of auburn in her body fur. Silent (they were all silent in neKrol's presence, all save the talker), she offered him her work.

It was a statuette no larger than his fist, a heavy-breasted fertility goddess fashioned out of the fragrant, thin-veined blue wood of the fruit trees. She sat cross-legged on a triangular base, and three thin slivers of bone rose from each corner of the triangle to meet above her head in a blob of clay.

NeKrol took the carving, turned it this way and that, and nodded his approval. The Jaenshi smiled and vanished, taking the salt brick with her. Long after she was gone, neKrol continued to admire his acquisition. He had traded all his life, spending ten years among the squid-faced gethsoids of Aath and four with the stick-thin Fyndii, traveling a trader's circuit to a half-dozen stone age planets that had once been slaveworlds of the broken Hrangan Empire; but nowhere had he found artists like the Jaenshi. Not for the first time, he wondered why neither Kleronomas nor Chung had mentioned the native carvings. He was glad they hadn't, though, and fairly certain that once the dealers saw the crates of wooden gods he had sent back with Ryther, the world would be overrun by traders. As it was, he had been sent here entirely on speculation, in hopes of finding a

Jaenshi drug or herb or liquor that might move well in stellar trade. Instead he'd found the art, like an answer to a prayer.

Other workmen came and went as the morning turned to afternoon and the afternoon to dusk, setting their craft before him. He looked over each piece carefully, taking some and declining others, paying for what he took in salt. Before full darkness had descended, a small pile of goods sat by his right hand; a matched set of redstone knives, a gray deathcloth woven from the fur of an elderly Jaenshi by his widow and friends (with his face wrought upon it in the silky golden hairs of a pseudomonk), a bone spear with tracings that reminded neKrol of the runes of Old Earth legend; and statues. The statues were his favorites, always; so often alien art was alien beyond comprehension, but the Jaenshi workmen touched emotional chords in him. The gods they carved, each sitting in a bone pyramid, wore Jaenshi faces, yet at the same time seemed archetypically human: stern-faced war gods, things that looked oddly like satyrs, fertility goddesses like the one he had bought, almost-manlike warriors and nymphs. Often neKrol had wished that he had a formal education in extee anthropology, so that he might write a book on the universals of myth. The Jaenshi surely had a rich mythology, though the talkers never spoke of it; nothing else could explain the

carvings. Perhaps the old gods were no longer worshipped, but they were still remembered.

By the time the Heart of Bak-kalon went down and the last reddish rays ceased to filter through the looming trees, neKrol had gathered as much as he could carry, and his salt was all but exhausted. He laced up his boots again, packed his acquisitions with painstaking care, and sat patiently in the poolside grass, waiting. One by one, the waterfall folk joined him. Finally the old talker returned.

The prayers began.

The old talker, with the laser still in his hand, waded carefully across the night-dark waters, to squat by the black bulk of the pyramid. The others, adults and children together, now some forty strong, chose spots in the grass near the banks, behind neKrol and around him. Like him, they looked out over the pool, at the pyramid and the talker outlined clearly in the light of a new-risen, oversized moon. Setting the laser down on the stone, the old talker pressed both palms flat against the side of the pyramid, and his body seemed to go stiff, while all the other Jaenshi also tensed and grew very quiet.

NeKrol shifted restlessly and fought a yawn. It was not the first time he'd sat through a prayer ritual, and he knew the routine. A good hour of boredom lay before him; the Jaenshi did silent worship, and there was nothing to be heard

but their steady breathing, nothing to be seen but forty impassive faces. Sighing, the trader tried to relax, closing his eyes and concentrating on the soft grass beneath him and the warm breeze that tossed his wild mane of hair. Here, briefly, he found peace. How long would it last, he mused, should the Steel Angels leave their valley . . .

The hour passed, but neKrol, lost in meditation, scarce felt the flow of time. Until suddenly he heard the rustlings and chatter around him, as the waterfall folk rose and went back into the forest. And then the old talker stood in front of him, and laid the laser at his feet.

"No," he said simply.

NeKrol started. "What? But you *must*. Let me show you what it can do . . ."

"I have had a vision, Arik. The god has shown me. But also he has shown me that it would not be a good thing to take this in trade."

"Old talker, the Steel Angels will come . . ."

"If they come, our god shall speak to them," the Jaenshi elder said, in his purring speech, but there was finality in the gentle voice, and no appeal in the vast liquid eyes.

"For our food, we thank ourselves, none other. It is ours because we worked for it, ours because we fought for it, ours by the only right that is: the right of the strong. But for that strength—for

the might of our arms and the steel of our swords and the fire in our hearts—we thank Bakkalon, the pale child, who gave us life and taught us how to keep it.”

The Proctor stood stiffly at the centermost of the five long wooden tables that stretched the length of the great mess hall, pronouncing each word of the grace with solemn dignity. His large veined hands pressed tightly together as he spoke, against the flat of the upward-jutting sword, and the dim lights had faded his uniform to an almost-black. Around him, the Steel Angels sat at attention, their food untouched before them; fat boiled tubers, steaming chunks of bushog meat, black bread, bowls of crunchy green neograss. Children below the fighting age of ten, in smocks of starchy white and the omnipresent mesh-steel belts, filled the two outermost tables beneath the slit-like windows; toddlers struggled to sit still under the watchful eyes of stern nine-year-old houseparents with hardwood batons in their belts. Further in, the fighting brotherhood sat, fully armed, at two equally long tables, men and women alternating, leather-skinned veterans sitting next to ten-year-olds who had barely moved from the children's dorm to the barracks. All of them wore the same chameleon cloth as Wyatt, though without his collar, and a few had buttons of rank. The center table, less than half the length of the others, held

the cadre of the Steel Angels; the squadfathers and squadmothers, the weaponsmasters, the healers, the four fieldbishops, all those who wore the high, stiff crimson collar. And the Proctor, at its head.

“Let us eat,” Wyatt said at last. His sword moved above his table with a whoosh, describing the slash of blessing, and he sat to his meal. The Proctor, like all the others, had stood single-file in the line that wound past the kitchen to the mess hall, and his portions were no larger than the least of the brotherhood.

There was a clink of knives and forks, and the infrequent clatter of a plate, and from time to time the thwack of a baton, as a houseparent punished some transgression of discipline by one of his charges; other than that, the hall was silent. The Steel Angels did not speak at meals, but rather meditated on the lessons of the day as they consumed their spartan fare.

Afterwards, the children—still silent—marched out of the hall, back to their dormitory. The fighting brotherhood followed, some to chapel, most to the barracks, a few to guard duty on the walls. The men they were relieving would find late meals still warm in the kitchen.

The officer core remained; after the plates were cleared away, the meal became a staff meeting.

“At ease,” Wyatt said, but the figures along the table relaxed little, if at all. Relaxation had been



bred out of them by now. The Proctor found one of them with his eyes. "Dhallis," he said, "you have the report I requested?"

Fieldbishop Dhallis nodded. She was a husky middle-aged woman with thick muscles and skin the color of brown leather. On her collar was a small steel insignia, an ornamental memory-chip that meant Computer Services. "Yes, Proctor," she said, in a hard, precise voice. "Jamison's World is a fourth-generation colony, settled mostly from Old Poseidon. One large continent, almost entirely unexplored, and more than twelve thousand islands of various sizes. The human population is concentrated almost entirely on the islands, and makes its living by farming sea and land, aquatic husbandry, and heavy industry. The oceans are rich in food and metal. The total population is about seventy-nine million. There are two large cities, both with spaceports: Port Jamison and Jolostar." She looked down at the computer print-out on the table. "Jamison's World was not even charted at the time of the Double War. It has never known military action, and the only Jamie armed forces are their planetary police. It has no colonial program and has never attempted to claim political jurisdiction beyond its own atmosphere."

The Proctor nodded. "Excellent. Then the trader's threat to report us is essentially an empty one. We

can proceed. Squadfather Walman?"

"Four Jaenshi were taken today, Proctor, and are now on the walls," Walman reported. He was a ruddy young man with a blond crewcut and large ears. "If I might, sir, I would request discussion of possible termination of the campaign. Each day we search harder for less. We have virtually wiped out every Jaenshi youngling of the clans who originally inhabited Sword Valley."

Wyatt nodded. "Other opinions?"

Fieldbishop Lyon, blue-eyed and gaunt, indicated dissent. "The adults remain alive. The mature beast is more dangerous than the youngling, Squadfather."

"Not in this case," Weaponsmaster C'ara DaHan said. DaHan was a giant of a man, bald and bronze-colored, the chief of Psychological Weaponry and Enemy Intelligence. "Our studies show that, once the pyramid is destroyed, neither full-grown Jaenshi nor the immature pose any threat whatsoever to the children of Bakkalon. Their social structure virtually disintegrates. The adults either flee, hoping to join some other clan, or revert to near-animal savagery. They abandon the younglings, most of whom fend for themselves in a confused sort of way and offer no resistance when we take them. Considering the number of Jaenshi on our walls, and those reported slain by predators or each other, I strongly feel that Sword Valley is

virtually clean of the animals: Winter is coming, Proctor, and much must be done. Squadfather Walman and his men should be set to other tasks."

There was more discussion, but the tone had been set; most of the speakers backed DaHan. Wyatt listened carefully, and all the while prayed to Bakkalon for guidance. Finally he motioned for quiet.

"Squadfather," he said to Walman, "tomorrow collect all the Jaenshi—both adults and children—that you can, but do not hang them if they are unresisting. Instead, take them to the city, and show them their clanmates on our walls. Then cast them from the valley, one in each direction of the compass." He bowed his head. "It is my hope that they will carry a message, to all the Jaenshi, of the price that must be paid when a beast raises hand or claw or blade against the seed of Earth. Then, when the spring comes and the children of Bakkalon move beyond Sword Valley, the Jaenshi will peacefully abandon their pyramids and quit whatever lands men may require, so the glory of the pale child might be spread."

Lyon and DaHan both nodded, among others. "Speak wisdom to us," Fieldbishop Dhallis said then.

Proctor Wyatt agreed. One of the lesser-ranking squadmothers brought him the Book, and he opened it to the Chapter of Teachings.

"In those days much evil had come upon the seed of Earth," the Proctor read, "for the children of Bakkalon had abandoned Him to bow to softer gods. So their skies grew dark and upon them from above came the Sons of Hranga with red eyes and demon teeth, and upon them from below came the vast Horde of Fyndii like a cloud of locusts that blotted out the stars. And the worlds flamed, and the children cried out, 'Save us! Save us!'"

"And the pale child came and stood before them, with His great sword in His hand, and in a voice like thunder He rebuked them. 'You have been weak children,' He told them, 'for you have disobeyed. Where are your swords? Did I not set swords in your hands?'"

"And the children cried out, 'We have beaten them into plowshares, oh Bakkalon!'"

"And He was sore angry. 'With plowshares, then, shall you face the Sons of Hranga! With plowshares shall you slay the Horde of Fyndii!'" And He left them, and heard no more their weeping, for the Heart of Bakkalon is a Heart of Fire.

"But then one among the seed of Earth dried his tears, for the skies did burn so bright that they ran scalding on his cheeks. And the bloodlust rose in him and he beat his plowshare back into a sword, and charged the Sons of Hranga, slaying as he went. Then others

saw, and followed, and a great battle-cry rang across the worlds.

"And the pale child heard, and came again, for the sound of battle is more pleasing to his ears than the sound of wails. And when He saw, He smiled. 'Now you are my children again,' He said to the seed of Earth. 'For you had turned against me to worship a god who calls himself a lamb, but did you not know that lambs go only to the slaughter? Yet now your eyes have cleared, and again you are the Wolves of God!'

"And Bakkalon gave them all swords again, all His children and all the seed of Earth, and He lifted his great black blade, the Demon-Reaver that slays the soulless, and swung it. And the Sons of Hranga fell before His might, and the great Horde that was the Fyndii burned beneath His gaze. And the children of Bakkalon swept across the worlds."

The Proctor lifted his eyes. "Go, my brothers-in-arms, and think on the Teachings of Bakkalon as you sleep. May the pale child grant you visions!"

They were dismissed.

The trees on the hill were bare and glazed with ice, and the snow—unbroken except for their footsteps and the stirrings of the bitter-sharp north wind—gleamed a blinding white in the noon sun. In the valley beneath, the City of the Steel Angels looked preternaturally clean

and still. Great snowdrifts had piled against the eastern walls, climbing halfway up the stark scarlet stone; the gates had not opened in months. Long ago, the children of Bakkalon had taken their harvest and fallen back inside the city, to huddle around their fires. But for the blue lights that burned late into the cold black night, and the occasional guard pacing atop the walls, neKrol would hardly have known that the Angels still lived.

The Jaenshi that neKrol had come to think of as the bitter speaker looked at him out of eyes curiously darker than the soft gold of her brothers. "Below the snow, the god lies broken," she said, and even the soothing tones of the Jaenshi tongue could not hide the hardness in her voice. They stood at the very spot where neKrol had once taken Ryther, the spot where the pyramid of the people of the ring-of-stone once stood. NeKrol was sheathed head to foot in a white thermosuit that clung too tightly, accenting every unsightly bulge. He looked out on Sword Valley from behind a dark blue plastifilm in the suit's cowl. But the Jaenshi, the bitter speaker, was nude, covered only by the thick gray fur of her winter coat. The strap of the hunting laser ran down between her breasts.

"Other gods beside yours will break unless the Steel Angels are stopped," neKrol said, shivering despite his thermosuit.

The bitter speaker seemed hardly to hear. "I was a child when they came, Arik. If they had left our god, I might be a child still. Afterwards, when the light went out and the glow inside me died, I wandered far from the ring-of-stone, beyond our own home forest, knowing nothing, eating where I could. Things are not the same in the dark valley. Bushogs honked at my passing, and charged me with their tusks, other Jaenshi threatened me and each other. I did not understand and I could not pray. Even when the Steel Angels found me, I did not understand, and I went with them to their city, knowing nothing of their speech. I remember the walls, and the children, many so much younger than me. Then I screamed and struggled; when I saw those on the ropes, something wild and godless stirred to life inside me." Her eyes regarded him, her eyes like burnished bronze. She shifted in the ankle-deep snow, curling a clawed hand around the strap of her laser.

NeKrol had taught her well since the day she had joined him, in the late summer when the Steel Angels had cast her from Sword Valley. The bitter speaker was by far the best shot of his six, the godless exiles he had gathered to him and trained. It was the only way; he had offered the lasers in trade to clan after clan, and each had refused. The Jaenshi were certain that their gods would protect them.

Only the godless listened, and not all of them; many—the young children, the quiet ones, the first to flee—many had been accepted into other clans. But others, like the bitter speaker, had grown too savage, had seen too much; they fit no longer. She had been the first to take the weapon, after the old talker had sent her away from the waterfall folk.

"It is often better to be without gods," neKrol told her. "Those below us have a god, and it has made them what they are. And so the Jaenshi have gods, and because they trust, they die. You godless are their only hope."

The bitter speaker did not answer. She only looked down on the silent city, besieged by snow, and her eyes smoldered.

And neKrol watched her, and wondered. He and his six were the hope of the Jaenshi, he had said; if so, was there hope at all? The bitter speaker, and all his exiles, had a madness about them, a rage that made him tremble. Even if Ryther came with the lasers, even if so small a group could stop the Angels' march, even if all that came to pass—what then? Should all the Angels die tomorrow, where would his godless find a place?

They stood, all quiet, while the snow stirred under their feet and the north wind bit at them.

The chapel was dark and quiet. Flameglobes burned a dim, eerie

red in either corner, and the rows of plain wooden benches were empty. Above the heavy altar, a slab of rough black stone, Bakkalon stood in holograph, so real he almost breathed; a boy, a mere boy, naked and milky white, with the wide eyes and blond hair of innocent youth. In his hand, half again taller than himself, was the great black sword.

Wyatt knelt before the projection, head bowed and very still. All through the winter his dreams had been dark and troubled, so each day he would kneel and pray for guidance. There was none else to seek but Bakkalon; he, Wyatt, was the Proctor, who led in battle and in faith. He alone must riddle his visions.

So daily he wrestled with his thoughts, until the snows began to melt and the knees of his uniform had nearly worn through from long scraping on the floor. Finally, he had decided, and this day he had called upon the senior collars to join him in the chapel.

Alone they entered, while the Proctor knelt unmoving, and chose seats on the benches behind him, each apart from his fellows. Wyatt took no notice; he prayed only that his words would be correct, his vision true. When they were all there, he stood and turned to face them.

"Many are the worlds on which the children of Bakkalon have lived," he told them, "but none so

blessed as this, our Corlos. A great time is on us, my brothers-in-arms. The pale child has come to me in my sleep, as once he came to the first Proctors in the years when the brotherhood was forged. He has given me visions."

They were quiet, all of them, their eyes humble and obedient; he was their Proctor, after all. There could be no questioning when one of higher rank spoke wisdom or gave orders. That was one of the precepts of Bakkalon, that the chain of command was sacred and never to be doubted. So all of them kept silence.

"Bakkalon Himself has walked upon this world. He has walked among the soulless and the beasts of the field and told them our dominion, and this he has said to me: that when the spring comes and the seed of Earth moves from Sword Valley to take new land, all the animals shall know their place and retire before us. This I do prophesy!

"More, we shall see miracles. That too the pale child has promised me, signs by which we will know His truth, signs that shall bolster our faith with new revelation. But so too shall our faith be tested, for it will be a time of sacrifices, and Bakkalon will call upon us more than once to show our trust in Him. We must remember His Teachings and be true, and each of us must obey Him as a child obeys the parent and a fight-

ing man his officer: that is, swiftly and without question. For the pale child knows best.

"These are the visions He has granted me, these are the dreams that I have dreamed. Brothers, pray with me."

And Wyatt turned again and knelt, and the rest knelt with him, and all the heads were bowed in prayer save one. In the shadows at the rear of the chapel where the flameglobes flickered but dimly, C'ara DaHan stared at his Proctor from beneath a heavy beetled brow.

That night, after a silent meal in the mess hall and a short staff meeting, the Weaponsmaster called upon Wyatt to go walking on the walls. "Proctor, my soul is troubled," he told him. "I must have counsel from he who is closest to Bakkalon." Wyatt nodded, and both donned heavy nightcloaks of black fur and oil-dark metal cloth, and together they walked the red-stone parapets beneath the stars.

Near the guardhouse that stood above the city gates, DaHan paused and leaned out over the ledge, his eyes searching the slow-melting snow for long moments before he turned them on the Proctor. "Wyatt," he said at last, "my faith is weak."

The Proctor said nothing, merely watched the other, his face concealed by the hood of his nightcloak. Confession was not a part of the rites of the Steel Angels; Bak-

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kalon had said that a fighting man's faith ought never to waver.

"In the old days," C'ara DaHan was saying, "many weapons were used against the children of Bakkalon. Some, today, exist only in tales. Perhaps they never existed. Perhaps they are empty things, like the gods the soft men worship. I am only a Weaponsmaster; such knowledge is not mine.

"Yet there is a tale, my Proctor—one that troubles me. Once, it is said, in the long centuries of war, the Sons of Hranga loosed upon the seed of Earth foul vampires of the mind, the creatures men called soul-feeds. Their touch was invisible, but it crept across kilometers, farther than a man could see, far-

ther than a laser could fire, and it brought madness. Visions, my Proctor, visions! False gods and foolish plans were put in the minds of men, and . . .”

“Silence,” Wyatt said. His voice was hard, as cold as the night air that crackled around them and turned his breath to steam.

There was a long pause. Then, in a softer voice, the Proctor continued. “All winter I have prayed, DaHan, and struggled with my visions. I am the Proctor of the Children of Bakkalon on the World of Corlos, not some new-armed child to be lied to by false gods. I spoke only after I was sure. I spoke as your Proctor, as your father in faith and your commanding officer. That you would question me, Weaponsmaster, that you would doubt—this disturbs me greatly. Next will you stop to argue with me on the field of battle, to dispute some fine point of my orders?”

“Never, Proctor,” DaHan said, kneeling in penance in the packed snow atop the walkway.

“I hope not. But, before I dismiss you, because you are my brother in Bakkalon, I will answer you, though I need not and it was wrong of you to expect it. I will tell you this; the Proctor Wyatt is a good officer as well as a devout man. The pale child has made prophecies to me, and has predicted that miracles will come to pass. All these things we shall see with our very eyes. But if the

prophecies should fail us, and if no signs appear, well, our eyes will see that too. And then I will know that it was not Bakkalon who sent the visions, but only a false god, perhaps a soul-feed of Hranga. Or do you think a Hrangan can work miracles?”

“No,” DaHan said, still on his knees, his great bald head downcast. “That would be heresy.”

“Indeed,” said Wyatt. The Proctor glanced briefly beyond the walls. The night was crisp and cold and there was no moon. He felt transfigured, and even the stars seemed to cry the glory of the pale child, for the constellation of the Sword was high upon the zenith, the Soldier reaching up toward it from where he stood on the horizon.

“Tonight you will walk guard without your cloak,” the Proctor told DaHan when he looked down again. “And should the north wind blow and the cold bite at you, you will rejoice in the pain, for it will be a sign that you submit to your Proctor and your god. As your flesh grows bitter numb, the flame in your heart must burn hotter.”

“Yes, my Proctor,” DaHan said. He stood and removed his night-cloak, handing it to the other. Wyatt gave him the slash of blessing.

On the wallscreen in his darkened living quarters the taped drama went through its familiar

measured paces, but neKrol, slouched in a large cushioned recliner with his eyes half-closed, hardly noticed. The bitter speaker and two of the other Jaenshi exiles sat on the floor, golden eyes rapt on the spectacle of humans chasing and shooting each other amid the vaulting tower cities of ai-Emerel; increasingly they had begun to grow curious about other worlds and other ways of life. It was all very strange, neKrol thought; the waterfall folk and the other clanned Jaenshi had never shown any such interest. He remembered the early days, before the coming of the Steel Angels in their ancient and soon-to-be-dismantled warship, when he had set all kinds of trade goods before the Jaenshi talkers; bright bolts of glittersilk from Avalon, glowstone jewelry from High Kavalaan, duralloy knives and solar generators and steel powerbows, books from a dozen worlds, medicines and wines—he had come with a little of everything. The talkers took some of it, from time to time, but never with any enthusiasm; the only offering that excited them was salt.

It was not until the spring rains came and the bitter speaker began to question him that neKrol realized, with a start, how seldom any of the Jaenshi clans had ever asked him *anything*. Perhaps their social structure and their religion stifled their natural intellectual curiosity. The exiles were certainly eager

enough, especially the bitter speaker. NeKrol could answer only a small portion of her questions of late, and even then she always had new ones to puzzle him with. He had begun to grow appalled with the extent of his own ignorance.

But then, so had the bitter speaker; unlike the clanned Jaenshi—did the religion make *that* much difference?—she would answer questions as well, and neKrol had tried quizzing her on many things that he'd wondered at. But most of the time she would only blink in bafflement, and begin to question herself.

"There are no stories about our gods," she said to him once, when he'd tried to learn a little of Jaenshi myth. "What sort of stories could there be? The gods live in the worship pyramids, Arik, and we pray to them and they watch over us and light our lives. They do not bounce around and fight and break each other like your gods seem to do."

"But you had other gods once, before you came to worship the pyramids," neKrol objected. "The very ones your carvers did for me." He had even gone so far as to unpack a crate and show her, though surely she remembered, since the people of the pyramid in the ring-of-stone had been among the finest craftsmen.

Yet the bitter speaker only smoothed her fur, and shook her head. "I was too young to be a

carver, so perhaps I was not told," she said. "We all know that which we need to know, but only the carvers need to do these things, so perhaps only they know the stories of these old gods."

Another time he had asked her about the pyramids, and had gotten even less. "Build them?" she had said. "We did not build them, Arik. They have always been, like the rocks and the trees." But then she blinked. "But they are *not* like the rocks and the trees, are they?" And, puzzled, she went away to talk to the others.

But if the godless Jaenshi were more thoughtful than their brothers in the clans, they were also more difficult, and each day neKrol realized more and more the futility of their enterprise. He had eight of the exiles with him now—they had found two more, half dead from starvation, in the height of winter—and they all took turns training with the two lasers and spying on the Angels. But even should Ryther return with the weaponry, their force was a joke against the might the Proctor could put in the field. The *Lights of Jolostar* would be carrying a full arms shipment in the expectation that every clan for a hundred kilometers would now be roused and angry, ready to resist the Steel Angels and overwhelm them by sheer force of numbers; Jannis would be blank-faced when only neKrol and his ragged band appeared to greet her.

If in fact they did. Even that was problematical; he was having much difficulty keeping his guerrillas together. Their hatred of the Steel Angels still bordered madness, but they were far from a cohesive unit. None of them liked to take orders very well, and they fought constantly, going at each other with bared claws in struggles for social dominance. If neKrol had not warned them, he suspected they might even duel with the lasers. As for staying in good fighting shape, that too was a joke. Of the three females in the band, the bitter speaker was the only one who had not allowed herself to be impregnated. Since the Jaenshi usually gave birth in litters of four to eight, neKrol calculated that late summer would present them with an exile population explosion. And there would be more after that, he knew; the godless seemed to copulate almost hourly, and there was no such thing as Jaenshi birth control. He wondered how the clans kept their population so stable, but his charges didn't know that either.

"I suppose we sexed less," the bitter speaker said when he asked her, "but I was a child, so I would not really know. Before I came here, there was never the urge. I was just young, I would think." But when she said it, she scratched herself and seemed very unsure.

Sighing, neKrol eased himself back in the recliner and tried to shut out the noise of the wall-

screen. It was all going to be very difficult. Already the Steel Angels had emerged from behind their walls, and the powerwagons rolled up and down Sword Valley turning forest into farmland. He had gone up into the hills himself, and it was easy to see that the spring planting would soon be done. Then, he suspected, the children of Bakkalon would try to expand. Just last week one of them—a giant “with no head fur,” as his scout had described him—was seen up in the ring-of-stone, gathering shards from the broken pyramid. Whatever that meant, it could not be for the good.

Sometimes he felt sick at the forces he had set in motion, and almost wished that Ryther would forget the lasers. The bitter speaker was determined to strike as soon as they were armed, no matter what the odds. Frightened, neKrol reminded her of the hard Angel lesson the last time a Jaenshi had killed a man; in his dreams he still saw children on the walls.

But she only looked at him, with the bronze tinge of madness in her eyes, and said, “Yes, Arik. I remember.”

Silent and efficient, the white-smocked kitchen boys cleared away the last of the evening’s dishes and vanished. “At ease,” Wyatt said to his officers. Then: “The time of miracles is upon us, as the pale child foretold.

“This morning I sent three squads into the hills to the south-east of Sword Valley, to disperse the Jaenshi clans on lands that we require. They reported back to me in early afternoon, and now I wish to share their reports with you. Squadmother Jolip, will you relate the events that transpired when you carried out your orders?”

“Yes, Proctor.” Jolip stood, a white-skinned blond with a pinched face, her uniform hanging slightly loose on a lean body. “I was assigned a squad of ten to clear out the so-called cliff clan, whose pyramid lies near the foot of a low granite cliff in the wilder part of the hills. The information provided by our intelligence indicated that they were one of the smaller clans, with only twenty-odd adults, so I dispensed with heavy armor. We did take a class five blastcannon, since the destruction of the Jaenshi pyramids is slow work with side-arms alone, but other than that our armament was strictly standard issue.

“We expected no resistance, but recalling the incident at the ring-of-stone, I was cautious. After a march of some twelve kilometers through the hills to the vicinity of the cliff, we fanned out in a semi-circle and moved in slowly, with screechguns drawn. A few Jaenshi were encountered in the forest, and these we took prisoner and marched before us, for use as shields in the event of an ambush

or attack. That, of course, proved unnecessary.

"When we reached the pyramid by the cliff, they were waiting for us. At least twelve of the beasts, sir. One of them sat near the base of the pyramid with his hands pressed against its side, while the others surrounded him in a sort of a circle. They all looked up at us, but made no other move."

She paused a minute, and rubbed a thoughtful finger up against the side of her nose. "As I told the Proctor, it was all very odd from that point forward. Last summer, I twice led squads against the Jaenshi clans. The first time, having no idea of our intentions, none of the soulless were there; we simply destroyed the artifact and left. The second time, a crowd of the creatures milled around, hampering us with their bodies while not being actively hostile. They did not disperse until I had one of them screeched down. And, of course, I studied the reports of Squadfather Allor's difficulties at the ring-of-stone.

"This time, it was all quite different. I ordered two of my men to set the blastcannon on its tripod, and gave the beasts to understand that they must get out of the way. With hand signals, of course, since I know none of their ungodly tongue. They complied at once, splitting into two groups and, well, lining up, on either side of the line-of-fire. We kept them covered

with our screechguns, of course, but everything seemed very peaceful.

"And so it was. The blaster took the pyramid out neatly, a big ball of flame and then sort of a thunder as the thing exploded. A few shards were scattered, but no one was injured, as we had all taken cover and the Jaenshi seemed unconcerned. After the pyramid broke, there was a sharp ozone smell, and for an instant a lingering bluish fire—perhaps an afterimage. I hardly had time to notice them, however, since that was when the Jaenshi all fell to their knees before us. All at once, sirs. And then they pressed their heads against the ground, prostrating themselves. I thought for a moment that they were trying to hail us as gods, because we had shattered their god, and I tried to tell them that we wanted none of their animal worship, and required only that they leave these lands at once. But then I saw that I had misunderstood, because that was when the other four clan members came forward from the trees atop the cliff, and climbed down, and gave us the statue. Then the rest got up. The last I saw, the entire clan was walking due east, away from Sword Valley and the outlying hills. I took the statue and brought it back to the Proctor." She fell silent but remained standing, waiting for questions.

"I have the statuette here," Wyatt said. He reached down beside his chair and set it on the

table, then pulled off the white cloth covering he had wrapped around it.

The base was a triangle of rock-hard blackbark, and three long splinters of bone rose from the corners to make a pyramid-frame. Within, exquisitely carved in every detail from soft blue wood, Bakkalon the pale child stood, holding a painted sword.

"What does this mean?" Fieldbishop Lyon asked, obviously startled.

"Sacrilege!" Fieldbishop Dhallis said.

"Nothing so serious," said Gorman, Fieldbishop for Heavy Armor. "The beasts are simply trying to ingratiate themselves, perhaps in the hope that we will stay our swords."

"None but the seed of Earth may bow to Bakkalon," Dhallis said. "It is written in the Book! The pale child will not look with favor on the soulless!"

"Silence, my brothers-in-arms!" the Proctor said, and the long table abruptly grew quiet again. Wyatt smiled a thin smile. "This is the first of the miracles of which I spoke this winter in the chapel, the first of the strange happenings that Bakkalon told to me. For truly he has walked this world, our Corlos, so even the beasts of the fields know his likeness! Think on it, my brothers. Think on this carving. Ask yourselves a few simple questions. Have any of the Jaenshi ani-

mals ever been permitted to set foot in this holy city?"

"No, of course not," someone said.

"Then clearly none of them have seen the holograph that stands above our altar. Nor have I often walked among the beasts, as my duties keep me here within the walls. So none could have seen the pale child's likeness on the chain of office that I wear, for the few Jaenshi who have seen my visage have not lived to speak of it—they were those I judged, who hung upon our city walls. The animals do not speak the language of the Earthseed, nor have any among us learned their simple beastly tongue. Lastly, they have not read the Book. Remember all this, and wonder; how did their carvers know what face and form to carve?"

Quiet; the leaders of the children of Bakkalon looked back and forth among themselves in wonderment.

Wyatt quietly folded his hands. "A miracle. We shall have no more trouble with the Jaenshi, for the pale child has come to them."

To the Proctor's right, Fieldbishop Dhallis sat rigidly. "My Proctor, my leader in faith," she said, with some difficulty, each word coming slowly, "surely, *surely*, you do not mean to tell us that these, these *animals*—that they can worship the pale child, that he accepts their worship!"

Wyatt seemed calm, benevolent; he only smiled. "You need not

trouble your soul, Dhallis. You wonder whether I commit the First Fallacy, remembering perhaps the Sacrilege of G'hra when a captive Hrangan bowed to Bakkalon to save himself from an animal's death, and the False Proctor Gibrone proclaimed that all who worship the pale child must have souls." He shook his head. "You see, I read the Book. But no, Fieldbishop, no sacrilege has transpired. Bakkalon *has* walked among the Jaenshi, but surely has given them only truth. They have seen him in all his armed dark glory, and heard him proclaim that they are animals, without souls, as surely he would proclaim. Accordingly, they accept their place in the order of the universe, and retire before us. They will never kill a man again. Recall that they did not bow to the statue they carved, but rather gave the statue to *us*, the seed of Earth, who alone can rightfully worship it. When they did prostrate themselves, it was at *our* feet, as animals to men, and that is as it should be. You see? They have been given truth."

Dhallis was nodding. "Yes, my Proctor. I am enlightened. Forgive my moment of weakness."

But halfway down the table, C'ara DaHan leaned forward and knotted his great knuckled hands, frowning all the while. "My Proctor," he said heavily.

"Weaponsmaster?" Wyatt returned. His face grew stern.

"Like the Fieldbishop, my soul has flickered briefly with worry, and I too would be enlightened, if I might?"

Wyatt smiled. "Proceed," he said, in a voice without humor.

"A miracle this thing may be indeed," DaHan said, "but first we must question ourselves, to ascertain that it is not the trick of a soulless enemy. I do not fathom their stratagem, or their reasons for acting as they have, but I do know of one way that the Jaenshi might have learned the features of our Bakkalon."

"Oh?"

"I speak of the Jamish trading base, and the red-haired trader Arik neKrol. He is an Earthseed, an Emereli by his looks, and we have given him the Book. But he remains without a burning love of Bakkalon, and goes without arms like a godless man. Since our landing he has opposed us, and he grew most hostile after the lesson we were forced to give the Jaenshi. Perhaps he put the cliff clan up to it, told them to do the carving, to some strange ends of his own. I believe that he *did* trade with them."

"I believe you speak truth, Weaponsmaster. In the early months after landing, I tried hard to convert neKrol. To no avail, but I did learn much of the Jaenshi beasts and of the trading he did with them." The Proctor still smiled. "He traded with one of the clans here in Sword Valley, with

the people of ring-of-stone, with the cliff clan and that of the far fruit tangle, with the waterfall folk, and sundry clans further east.”

“Then it is his doing,” DaHan said. “A trick!”

All eyes moved to Wyatt. “I did not say that. NeKrol, whatever intentions he might have, is but a single man. He did not trade with all the Jaenshi, nor even know them all.” The Proctor’s smile grew briefly wider. “Those of you who have seen the Emereli know him for a man of flab and weakness; he could hardly walk as far as might be required, and he has neither air-car nor power sled.”

“But he *did* have contact with the cliff clan,” DaHan said. The deep-graven lines on his bronze forehead were set stubbornly.

“Yes, he did,” Wyatt answered. “But Squadmother Jolip did not go forth alone this morning. I also sent out Squadfather Walman and Squadfather Allor, to cross the waters of the White Knife. The land there is dark and fertile, better than that to the east. The cliff clan, who are southeast, were between Sword Valley and the White Knife, so they had to go. But the other pyramids we moved against belonged to far-river clans, more than thirty kilometers south. They have never seen the trader Arik neKrol, unless he has grown wings this winter.”

Then Wyatt bent again, and set two more statues on the table, and

pulled away their coverings. One was set on a base of slate, and the figure was carved in a clumsy broad manner; the other was finely detailed soaproot, even to the struts of the pyramid. But except for the materials and the workmanship, the later statues were identical to the first.

“Do you see a trick, Weaponsmaster?” Wyatt asked.

DaHan looked, and said nothing, for Fieldbishop Lyon rose suddenly and said, “I see a miracle,” and others echoed him. After the hubbub had finally quieted, the brawny Weaponsmaster lowered his head and said, very softly, “My Proctor. Read wisdom to us.”

“The lasers, speaker, the *lasers!*” There was a tinge of hysterical desperation in neKrol’s tone. “Ryther is not back yet, and that is the very point. We must wait.”

He stood outside the bubble of the trading base, bare-chested and sweating in the hot morning sun, with the thick wind tugging at his tangled hair. The clamor had pulled him from a troubled sleep. He had stopped them just on the edge of the forest, and now the bitter speaker had turned to face him, looking fierce and hard and most unJaenshi-like with the laser slung across her shoulders, a bright blue glitter silk scarf knotted around her neck, and fat glowstone rings on all eight of her fingers. The other exiles, but for the two that were

heavy with child, stood around her. One of them held the other laser, the rest carried quivers and powerbows. That had been the speaker's idea. Her newly-chosen mate was down on one knee, panting; he had run all the way from the ring-of-stone.

"No, Arik," the speaker said, eyes bronze-angry. "Your lasers are now a month overdue, by your own count of time. Each day we wait, and the Steel Angels smash more pyramids. Soon they may hang children again."

"Very soon," neKrol said. "Very soon, if you attack them. Where is your very hope of victory? Your watcher says they go with two squads and a powerwagon—can you stop them with a pair of lasers and four powerbows? Have you learned to think here, or not?"

"Yes," the speaker said, but she bared her teeth at him as she said it. "Yes, but that cannot matter. The clans do not resist, so we must."

From one knee, her mate looked up at neKrol. "They . . . they march on the waterfall," he said, still breathing heavily.

"The waterfall!" the bitter speaker repeated. "Since the death of winter, they have broken more than twenty pyramids, Arik, and their powerwagons have crushed the forest and now a great dusty road scars the soil from their valley to the riverlands. But they had hurt no Jaenshi yet this season, they had

let them go. And all those clans-without-a-god have gone to the waterfall, until the home forest of the waterfall folk is bare and eaten clean. Their talkers sit with the old talker and perhaps the waterfall god takes them in, perhaps he is a very great god. I do not know these things. But I *do* know that now the bald Angel has learned of the twenty clans together, of a grouping of half-a-thousand Jaenshi adults, and he leads a powerwagon against them. Will he let them go so easy this time, happy with a carved statue? Will *they* go, Arik, will they give up a second god as easily as a first?" The speaker blinked. "I fear they will resist with their silly claws. I fear the bald Angel will hang them even if they do not resist, because so many in union throws suspicion in him. I fear many things and know little, but I know *we* must be there. You will not stop us, Arik, and we cannot wait for your long-late lasers."

And she turned to the others and said, "Come, we must run," and they had faded into the forest before neKrol could even shout for them to stay. Swearing, he turned back to the bubble.

The two female exiles were leaving just as he entered. Both were close to the end of their term, but they had powerbows in their hands. NeKrol stopped short. "You too!" he said furiously, glaring at them. "Madness, it is the very stuff of madness!" They only looked at

him with silent golden eyes, and moved past him toward the trees.

Inside, he swiftly braided his long red hair so it would not catch on the branches, slipped into a shirt, and darted toward the door. Then he stopped. A weapon, he must have a weapon! He glanced around frantically and ran heavily for his storeroom. The powerbows were all gone, he saw. What then, what? He began to rummage, and finally settled for a duralloy machete. It felt strange in his hand and he must have looked most unmartial and ridiculous, but somehow he felt he must take something.

Then he was off, toward the place of the waterfall folk.

NeKrol was overweight and soft, hardly used to running, and the way was nearly two kilometers through lush summer forest. He had to stop three times to rest, and quiet the pains in his chest, and it seemed an eternity before he arrived. But still he beat the Steel Angels; a powerwagon is ponderous and slow, and the road from Sword Valley was longer and more hilly.

Jaenshi were everywhere. The glade was bare of grass and twice as large as neKrol remembered it from his last trading trip, early that spring. Still the Jaenshi filled all of it, sitting on the ground, staring at the pool and the waterfall, all silent, packed together so there was

scarcely room to walk among them. More sat above, a dozen in every fruit tree, some of the children even ascending to the higher limbs where the pseudomonks usually ruled alone.

On the rock at the center of the pool, with the waterfall behind them as a backdrop, the talkers pressed around the pyramid of the waterfall folk. They were closer together than even those in the grass, and each had his palms flat against the sides. One, thin and frail, sat on the shoulders of another so that he too might touch. NeKrol tried to count them and gave up; the group was too dense, a blurred mass of gray-furred arms and golden eyes, the pyramid at their center, dark and unmovable as ever.

The bitter speaker stood in the pool, the waters ankle-deep around her. She was facing the crowd and screeching at them, her voice strangely unlike the usual Jaenshi purr; in her scarf and rings, she looked absurdly out of place. As she talked, she waved the laser rifle she was holding in one hand. Wildly, passionately, hysterically, she was telling the gathered Jaenshi that the Steel Angels were coming, that they must leave at once, that they should break up and go into the forest and regroup at the trading base. Over and over again she said it.

But the clans were stiff and silent. No one answered, no one lis-

tened, no one heard. In full daylight, they were praying.

NeKrol pushed his way through them, stepping on a hand here and a foot there, hardly able to set down a boot without crunching Jaenshi flesh. He was standing next to the bitter speaker, who still gestured wildly, before her bronze eyes seemed to see him. Then she stopped. "Arik," she said, "the Angels are coming, and *they will not listen.*"

"The others," he panted, still short on breath. "Where are they?"

"The trees," the bitter speaker replied, with a vague gesture. "I sent them up in the trees. Snipers, Arik, such as we saw upon your wall."

"Please," he said. "Come back with me. Leave them, leave them. You told them. I told them. Whatever happens, it is their doing, it is the fault of their fool religion."

"I cannot leave," the bitter speaker said. She seemed confused, as so often when neKrol had questioned her back at the base. "It seems I should, but somehow I know I must stay here. And the others will *never* go, even if I did. They feel it much more strongly. We must be here. To fight, to talk." She blinked. "I do not know *why*, Arik, but we must."

And before the trader could reply, the Steel Angels came out of the forest.

There were five of them at first, widely spaced; then shortly five

more. All afoot, in uniforms whose mottled dark greens blended with the leaves, so that only the glitter of the mesh-steel belts and matching battle helmets stood out. One of them, a gaunt pale woman, wore a high red collar; all of them had hand-lasers drawn.

"You!" the blond woman shouted, her eyes finding Arik at once, as he stood with his braid flying in the wind and the machete dangling uselessly in his hand. "Speak to these animals! Tell them they must leave! Tell them that no Jaenshi gathering of this size is permitted east of the mountains, by order of the Proctor Wyatt, and the pale child Bakkalon. Tell them!" And then she saw the bitter speaker, and started. "And take the laser from the hand of that animal before we burn both of you down!"

Trembling, neKrol dropped the machete from limp fingers into the water. "Speaker, drop the gun," he said in Jaenshi, "*please*. If you ever hope to see the far stars. Let loose the laser, my friend, my child, this very now. And I will take you when Ryther comes, with me to ai-Emerel and further places." The trader's voice was full of fear; the Steel Angels held their lasers steady, and not for a moment did he think the speaker would obey him.

But strangely, meekly, she threw the laser rifle into the pool. NeKrol could not see to read her eyes.



The Squadmother relaxed visibly. "Good," she said. "Now, talk to them in their beastly talk, tell them to leave. If not, we shall crush them. A powerwagon is on its way!" And now, over the roar and tumble of the nearby waters, neKrol could hear it; a heavy crunching as it rolled over trees, rending them into splinters beneath wide duramesh treads. Perhaps they were using the blastcannon and the turret lasers to clear away boulders and other obstacles.

"We have told them," neKrol said desperately. "Many times we have told them, but they do not hear!" He gestured all about him; the glade was still hot and close with Jaenshi bodies and none among the clans had taken the slightest notice of the Steel Angels or the confrontation. Behind him, the clustered talkers still pressed small hands against their god.

"Then we shall bare the sword of Bakkalon to them," the Squadmother said, "and perhaps they will hear their own wailing!" She holstered her laser and drew a screechgun, and neKrol, shuddering, knew her intent. The screechers used concentrated high-intensity sound to break down cell walls and liquefy flesh. Its effects were psychological as much as anything; there was no more horrible death.

But then a second squad of the Angels were among them, and there was a creak of wood straining

and snapping, and from behind a final grove of fruit trees, dimly, neKrol could see the black flanks of the powerwagon, its blastcannon seemingly trained right at him. Two of the newcomers wore the scarlet collar—a red-faced youth with large ears who barked orders to his squad, and a huge, muscular man with a bald head and lined bronze skin. NeKrol recognized him; the Weaponsmaster C'ara DaHan. It was DaHan who laid a heavy hand on the Squadmother's arm as she raised her screechgun. "No," he said. "It is not the way."

She holstered the weapon at once. "I hear and obey."

DaHan looked at neKrol. "Trader," he boomed, "is this your doing?"

"No," neKrol said.

"They will not disperse," the Squadmother added.

"It would take us a day and a night to screech them down," DaHan said, his eyes sweeping over the glade and the trees, and following the rocky twisted path of the waterwall up to its summit. "There is an easier way. Break the pyramid and they go at once." He stopped then, about to say something else; his eyes were on the bitter speaker.

"A Jaenshi in rings and cloth," he said. "They have woven nothing but deathcloth up to now. This alarms me."

"She is one of the people of the

ring-of-stone," neKrol said quickly. "She has lived with me."

DaHan nodded. "I understand. You are truly a godless man, neKrol, to consort so with soulless animals, to teach them to ape the ways of the seed of Earth. But it does not matter." He raised his arm in signal; behind him, among the trees, the blastcannon of the powerwagon moved slightly to the right. "You and your pet should move at once," DaHan told neKrol. "When I lower my arm, the Jaenshi god will burn and if you stand in the way, you will never move again."

"The talkers!" neKrol protested, "the blast will—" and he started to turn to show them. But the talkers were crawling away from the pyramid, one by one.

Behind him, the Angels were muttering. "A miracle!" one said hoarsely. "Our child! Our Lord!" cried another.

NeKrol stood paralyzed. The pyramid on the rock was no longer a reddish slab. Now it sparkled in the sunlight, a canopy of transparent crystal. And below that canopy, perfect in every detail, the pale child Bakkalon stood smiling, with his Demon-Reaver in his hand.

The Jaenshi talkers were scrambling from it now, tripping in the water in their haste to be away. NeKrol glimpsed the old talker, running faster than any despite his age. Even he seemed not to under-

stand. The bitter speaker stood open-mouthed.

The trader turned. Half of the Steel Angels were on their knees, the rest had absent-mindedly lowered their arms and they froze in gaping wonder. The Squadmother turned to DaHan. "It is a miracle," she said. "As Proctor Wyatt has foreseen. The pale child walks upon this world."

But the Weaponsmaster was unmoved. "The Proctor is not here and this is no miracle," he said in a steely voice. "It is a trick of some enemy, and I will not be tricked. We will burn the blasphemous thing from the soil of Corlos." His arm flashed down.

The Angels in the powerwagon must have been lax with awe; the blastcannon did not fire. DaHan turned in irritation. "It is no miracle!" he shouted. He began to raise his arm again.

Next to neKrol, the bitter speaker suddenly cried out. He looked over with alarm, and saw her eyes flash a brilliant yellow-gold. "The god!" she muttered softly. "The light returns to me!"

And the whine of powerbows sounded from the trees around them, and two long bolts shuddered almost simultaneously in the broad back of C'ara DaHan. The force of the shots drove the Weaponsmaster to his knees, smashed him against the ground.

"RUN!" neKrol screamed, and he shoved the bitter speaker with

all his strength, and she stumbled and looked back at him briefly, her eyes dark bronze again and flickering with fear. Then, swiftly, she was running, her scarf aflutter behind her as she dodged toward the nearest green.

“Kill her!” the Squadmother shouted. “Kill them all!” And her words woke Jaenshi and Steel Angels both; the children of Bakkalon lifted their lasers against the suddenly-surg-ing crowd, and the slaughter began. NeKrol knelt and scabbled on the moss-slick rocks until he had the laser rifle in his hands, then brought it to his shoulder and commenced to fire. Light stabbed out in angry bursts; once, twice, a third time. He held the trigger down and the bursts became a beam, and he sheared through the waist of a silver-helmeted Angel before the fire flared in his stomach and he fell heavily into the pool.

For a long time he saw nothing; there was only pain and noise, the water gently slapping against his face, the sounds of high-pitched Jaenshi screaming, running all around him. Twice he heard the roar and crackle of the blastcanon, and more than twice he was stepped on. It all seemed unimportant. He struggled to keep his head on the rocks, half out of the water, but even that seemed none too vital after a while. The only thing that counted was the burning in his gut.

Then, somehow, the pain went away, and there was a lot of smoke and horrible smells but not so much noise, and neKrol lay quietly and listened to the voices.

“The pyramid, Squadmother?” someone asked.

“It *is* a miracle,” a woman’s voice replied. “Look, Bakkalon stands there yet. And see how he smiles! We have done right here today!”

“What should we do with it?”

“Lift it aboard the powerwagon. We shall bring it back to Proctor Wyatt.”

Soon after the voices went away, and neKrol heard only the sound of the water, rushing down endlessly, falling and tumbling. It was a very restful sound. He decided he would sleep.

The crewman shoved the crowbar down between the slats and lifted. The thin wood hardly protested at all before it gave. “More statues, Jannis,” he reported, after reaching inside the crate and tugging loose some of the packing material.

“Worthless,” Ryther said, with a brief sigh. She stood in the broken ruins of neKrol’s trading base. The Angels had ransacked it, searching for armed Jaenshi, and debris lay everywhere. But they had not touched the crates.

The crewman took his crowbar and moved on to the next stack of crated artifacts. Ryther looked wist-

fully at the three Jaenshi who clustered around her, wishing they could communicate a little better. One of them, a sleek female who wore a trailing scarf and a lot of jewelry and seemed always to be leaning on a powerbow, knew a smattering of Terran, but hardly enough. She picked up things quickly, but so far the only thing of substance she had said was, "Jamson' World. Arik take us. Angels kill." That she had repeated endlessly until Ryther had finally made her understand that, yes, they would take them. The other two Jaenshi, the pregnant female and the male with the laser, never seemed to talk at all.

"Statues again," the crewman said, having pulled a crate from atop the stack in the ruptured storeroom and pried it open.

Ryther shrugged; the crewman moved on. She turned her back on him and wandered slowly outside, to the edge of the spacefield where the *Lights of Jolostar* rested, its open ports bright with yellow light in the gathering gloom of dusk. The Jaenshi followed her, as they had followed her since she arrived; afraid, no doubt, that she would go away and leave them if they took their great bronze eyes off her for an instant.

"Statues," Ryther muttered, half to herself and half to the Jaenshi. She shook her head. "Why did he do it?" she asked them, knowing they could not understand. "A

trader of his experience? You could tell me, maybe, if you knew what I was saying. Instead of concentrating on deathcloths and such, on real Jaenshi art, why did Arik train you people to carve alien versions of human gods? He should have known no dealer would accept such obvious frauds. Alien art is *alien*." She sighed. "My fault, I suppose. We should have opened the crates." She laughed.

The bitter speaker stared at her. "Arik deathcloth. Gave."

Ryther nodded, abstractly. She had it now, hanging just above her bunk; a strange small thing, woven partly from Jaenshi fur and mostly from long silken strands of flame red hair. On it, gray against the red, was a crude but recognizable caricature of Arik neKrol. She had wondered at that, too. The tribute of a widow? A child? Or just a friend? What *had* happened to Arik during the year the *Lights* had been away? If only she had been back on time, then . . . but she'd lost three months on Jamison's World, checking dealer after dealer in an effort to unload the worthless statuettes. It had been middle autumn before the *Lights of Jolostar* returned to Corlos; to find neKrol's base in ruins, the Angels already gathering in their harvests.

And the Angels—when she'd gone to them, offering the hold of unwanted lasers, offering to trade, the sight on those blood-red city walls had sickened even her. She

had thought she'd gone prepared, but the obscenity she encountered was beyond any preparation. A squad of Steel Angels found her, vomiting, beyond the tall rusty gates, and had escorted her inside, before the Proctor.

Wyatt was twice as skeletal as she remembered him. He had been standing outdoors, near the foot of a huge platform-altar that had been erected in the middle of the city. A startlingly lifelike statue of Bakkalon, encased in a glass pyramid and set atop a high redstone plinth, threw a long shadow over the wooden altar. Beneath it, the squads of Angels were piling the newly-harvested neograss and wheat and the frozen carcasses of bushogs.

"We do not need your trade," the Proctor told her. "The World of Corlos is many-times-blessed, my child, and Bakkalon lives among us now. He has worked vast miracles, and shall work more. Our faith is in Him." Wyatt gestured toward the altar with a thin hand. "See? In tribute we burn our winter stores, for the pale child has promised that this year winter will not come. And He has taught us to cull ourselves in peace as once we were culled in war, so the seed of Earth grows ever stronger. It is a time of great new revelation!" His eyes had burned as he spoke to her; eyes darting and fanatic, vast and dark yet strangely flecked with gold.

As quickly as she could, Ryther had left the City of the Steel Angels, trying hard not to look back at the walls. But when she had climbed the hills, back toward the trading base, she had come to the ring-of-stone, to the broken pyramid where Arik had taken her. Then Ryther found that she could not resist, and powerless she had turned for a final glance out over Sword Valley. The sight had stayed with her.

Outside the walls the Angel children hung, a row of small white-smocked bodies still and motionless at the end of long ropes. They had gone peacefully, all of them, but death is seldom peaceful; the older ones, at least, died quickly, necks broken with a sudden snap. But the small pale infants had the nooses round their waists, and it had seemed clear to Ryther that most of them had simply hung there till they starved.

As she stood, remembering, the crewman came from inside neKrol's broken bubble. "Nothing," he reported. "All statues." Ryther nodded.

"Go?" the bitter speaker said. "Jamson' World?"

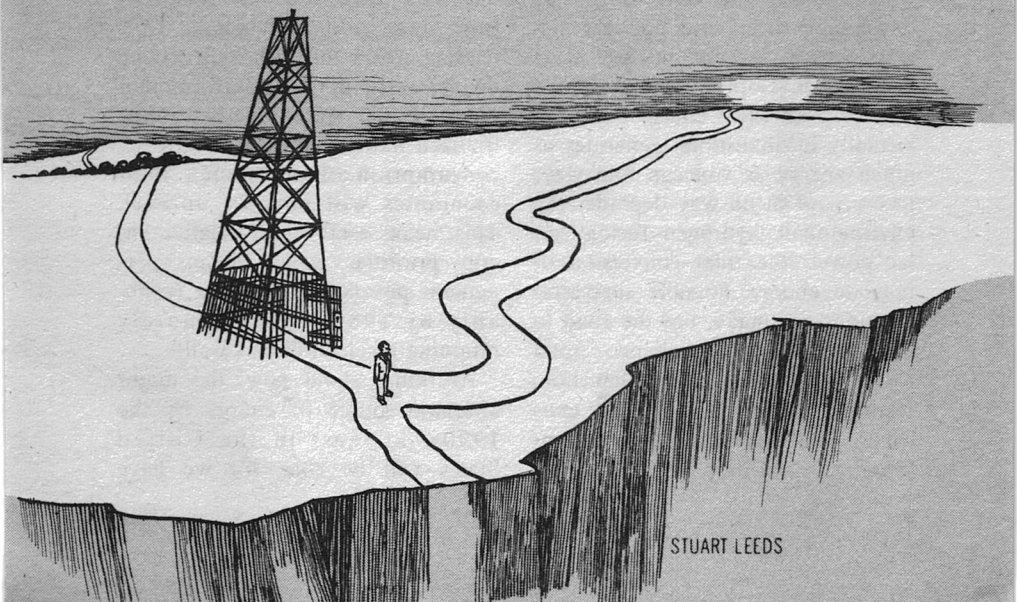
"Yes," she replied, her eyes staring past the waiting *Lights of Jolostar*, out toward the black primal forest. The Heart of Bakkalon was sunk forever. In a thousand thousand woods and a single city, the clans had begun to pray. ■

energy and survival:

THE FORK IN THE ROAD

We stand at the decision point
between racial stagnation
and the quantum leap into a society of
abundant energy and resources.

NORMAN SPINRAD



STUART LEEDS

Science fiction writers have often theorized that there is a crisis point in the history of all intelligent species wherever they may be in the galaxy, a fork in the road which all civilizations reach. This crisis point occurs when a civilization develops the means to destroy itself and the viability of its planet through nuclear war, when further technological and industrial growth comes up against the apparent limits of finite mineral and energy resources, when the survival of the planet's delicate ecological web and even the life-supporting ability of the atmosphere itself is threatened by the toxic by-products of technological civilization.

A cursory glance at the daily newspapers should convince any skeptic that the human race has now reached this fork in the road.

Civilizations—so the theory goes—which survive this crisis do so by developing social and political systems which prevent nuclear wars and by developing “ideal energy sources.” An ideal energy source is virtually inexhaustible, generates as much energy as you can find ways to use, and in no way degrades the environment: hydrogen fusion, solar power, the total conversion of mass to energy. Possible successful solutions are many, but the road to failure is singular—reliance upon fossil fuels until their exhaustion, terminal poisoning of the ecosystem, destruction of the life-supporting capability of the atmo-

sphere, the death of technological civilization, of the intelligent species, perhaps of life on the planet itself.

Here we stand at the crossroads. What will happen between now and the turn of the millennium? First, let's look at where we are heading, assuming that events will go pretty much as they have, following the path of least resistance.

Oil is now the lifeblood of our civilization. Estimates vary as to how long the world's total supply will last; hardly anyone gives it less than 20 years, but hardly anyone believes it will last much past the year 2000. As electrical generation and industrial demands, the home owner, the plastics and fertilizer industries, and the motorist all vie for the dwindling world supply of petroleum, the price of petroleum products will spiral upward. This in turn will drive up the prices of food and industrial goods, thus feeding world inflation and driving up the price of petroleum another notch in the spiral. If the industrialized nations do not control the consumption of petroleum, their economies will entirely unravel. This means establishing relative energy priorities, which means permanent petroleum rationing (probably by 1980) and ultimately rationing of electricity as well.

As things stand now, the major alternate source of energy by the 1990s—at least in the United States—will be coal, for we have

half the world's coal reserves within our borders. The only other currently deployable alternative is nuclear fission, and existing generators can be converted to burn coal much more cheaply than they can be replaced by nuclear plants. Indeed, it may take less capital and effort to build coal gasification plants to turn coal into a substitute for petroleum as a fuel for slightly modified existing machinery, including even cars. But conversion to coal will be cheap only in relation to the soaring price of petroleum, and the environmental costs will be ghastly—in terms of air pollution and loss of farmland, perhaps even terminal.

Nuclear fission generates a great deal of energy from a small weight of fuel; the only polluting end-product it normally releases into the environment is heat, and even this can become a useful by-product if nuclear generating plants are properly sited—warming our cities, enhancing fisheries, even being used for industrial purposes.

However, even breeder reactors require the processing of uranium or thorium ores, which are neither superabundant nor cheap to mine and refine. Further, fission reactors produce radioactive “ash” which can remain deadly to life for centuries and can neither be destroyed nor thrown away. Nuclear fission has its place as a transitional energy source, but it is no real solution.

What lies at the end of the road down which we are currently heading? The end of the private car. By 1980, a leveling off in industrial production, then a slow steady decline as we reach an energy limit to further growth. America will expand its exportation of grains in order to pay its importation bill for oil to run its declining industries. Unemployment will be extensive and appear rather permanently so, which means that wages, and with them the standard of living of ordinary Americans, will be forced ever downward from their all-time peaks in the early 1970s. The era of the Great American Gobble will be over. Americans will no longer have an abundant domestic food supply because a major portion of the crop will be mortgaged to pay for energy imports. Meat will become a luxury item, the protein, and ultimately even the carbohydrate, content of the American diet will begin to decline.

By the 1990s, there will be permanent worldwide depression which will make the so-called Great Depression of the 1930s seem like the Good Old Days. For this depression will not be the result of banking system failures, currency manipulations, or swings of the business cycle. It will endure as long as we endure as a species, for it will be caused by the irrevocable depletion of the Earth's fossil fuel energy resources before an alternate and enduring replacement has

been developed and deployed. At this point, the amounts of energy needed to power the development and deployment of an ideal energy source, such as fusion or orbital solar generating plants, will simply not be there. We will never be able to power a high industrial technology again. We will have entered economic Condition Terminal. We will have failed to transcend our crisis point as an intelligent species and will inexorably decline into a true post-industrial state: a reversion to a much smaller population eking out a bare existence as subsistence farmers on a worn-out, burnt-out, eaten-out planetary slag-heap.

On the other hand, we *do* stand at a nexus, a crossroads, and we are *not* inevitably fated to take the low road to Condition Terminal. The next quarter of a century could be an era of transcendence of this make or break crisis in our evolution as a sentient species. Rather than a period of decline, it could become a period of transformation for our civilization into an ecologically sound but energy-abundant culture, stable in its consumption of raw materials but dynamic in its onward progress, stewards of a revitalized planet as we reach outward for the stars.

And such a transformation could be made without massive economic dislocations, precipitous drops in living standards, unswallowable yearly capital outlays, heavy unem-

ployment, or the adoption of Draconian political methods. For if we begin the process now, we have thirty years in which to complete it, and if we can think in terms of a thirty-year transformation, we can accomplish it in a relatively smooth stepwise manner—not through a series of panic responses to a fire-cracker chain of crises, nor through cataclysmic revolutions, but through interlocking sequential programs designed to get us from here to there as the end result of a consciously crafted evolutionary process.

So, let us look down another road radiating from this fateful crossroads. Let's see what a rational overall energy program for the transformational period could look like, and how we could get from here to there in the next 25 to 30 years.

First of all, in the medium run, we are going to be dependent on fossil fuels, and in particular oil, no matter what we do in the long run. Therefore, in the short run, we should take what immediate steps we can to extend the world's finite supply of oil and coal as long as possible, so that the conversion to ideal energy sources can be made without intervening depressions or technological collapses. Further, as we shall see later, if we have a timetable for the long-range conversion to ideal energy sources, we will then be able to determine just

how much oil we can use per year, since we more or less know the total supply, and since the end of dependence on petroleum will clearly be in sight. On the other hand, petroleum will be worth more in the long run as a raw material for synthetic industries than as fuel, given a genuine commitment to the development of ideal energy sources, so every drop we can save now will be quite valuable in an ideal energy source economy.

The greatest gobbler of petroleum, at least in the United States, is the automobile, and fortunately, immense savings in oil can be made in this area by some rather simple Federal legislation. Little new technology is required. This year, Federal legislation should require that all new cars sold in the United States get at least 20 miles per gallon of gas, and within three years all new cars sold should be required to get 25 miles per gallon. In addition, there should be an excise tax on cars encouraging but not mandating cars that get 30 miles per gallon or more.

There is no technological excuse for not passing such legislation. Already, there are dozens of makes and models of cars being sold which meet the 20-mile-per-gallon standard: Pinto, Vega, Gremlin, some models of Mercedes, Volvo, Peugeot, and some American "compacts" among many others. There are at least a dozen cars already being sold which meet the more

stringent 25-mile-per-gallon standard: Volkswagen, Fiat, Toyota, Renault, Honda, et cetera. There are even a few cars which get 30 miles per gallon and would qualify for the tax break.

Detroit is already producing cars that meet the 20-mile-per-gallon standard and this legislation, in the first year, would simply require that they produce them exclusively. No new designs are necessary, no immediate massive retooling is called for. Detroit has been accustomed to making major model changes on a three-year cycle, so asking them to tool up to produce 25-mile-per-gallon cars in that timeframe would not be unreasonable. And in the cases of the compacts and sub-compacts, this would not even require major modifications or retooling.

Technologically and economically all this can be done with minimal effort and dislocation. Further, there will be considerable environmental benefits as well as fuel savings. Since the same number of cars will be burning much less fuel to go the same total mileage, air pollution will be automatically reduced to that extent. But that is not all—two Japanese manufacturers have already shown that it is possible to make cars of this kind that meet the stringent original 1976 Clean Air Standards *without* catalytic converters pumping questionable platinum oxides into the air.

Since the average lifespan of a car in the United States from man-

ufacture to junkyard is eight years, this would mean that within eight years most cars on the road would be 20-mpg cars, and that within eleven years, most cars would be 25-mpg cars. Since the average American car is now getting something like 14 mpg, we would be realizing a fuel savings of 25 percent at the end of eight years and a whopping 40 percent fuel savings at the end of eleven years. All without serious economic dislocation or public inconvenience. While certainly no long-range solution, it could extend petroleum supplies for at least an additional decade.

At the same time, Congress should enact an Electrical Efficiency Act which would set electrical consumption standards for major electrical appliances and even such things as light bulbs. Many of our electrical devices have simply never been designed with a view toward efficient use of electricity. At first, an Electrical Efficiency Act should encourage more efficient electrical appliances by differential taxes, and should subsidize a certain amount of research in this area. But later, when the more efficient technology clearly exists, Electrical Efficiency Standards should become mandatory.

Again, simultaneously and immediately, Congress should pass an Electric Generating Act. This law would ban outright the further construction of oil-burning generating plants. It would require approval

from a Federal Energy Board for the construction of any new generating plant anywhere in the United States. The mandate of this Federal Energy Board would be to hold the construction of coal-burning generating plants down to a reasonable level during the next decade, no more than, say, 25 percent of additional national generating capacity, and to require that the remaining 75 percent of additional generating capacity be hydroelectric, geothermal, wind-powered, solar, or nuclear.

The purposes of such an Electric Generating Act would be several. First and most obviously, the ban on further construction of oil-burning generators would further conserve and extend dwindling petroleum supplies. Less obviously, the Electric Generating Act would save increasingly valuable farmland and prevent American industry from investing vast amounts of capital in an energy dead-end. By serving notice that coal will not be permitted to become the major replacement for petroleum, the Act would automatically limit the strip-mining of coal under rich western farmlands and would pave the way for further legislation specifically and drastically limiting such ecologically destructive strip-mining. It would discourage massive investment in coal gasification. And finally, it would mandate that 75 percent of further electrical generating capacity be committed to ideal or at least eco-

logically benign energy generating sources.

And as a by-product, it would serve notice that the United States was making a major commitment to the replacement of petroleum not by the exploitation of another fossil fuel, coal, but by ideal energy sources.

For we should not delude ourselves that any or all of the above measures are true solutions to our energy problems. They will prevent us from investing heavily in the dead-end and ecologically unsound alternative of coal, they will hold our economy and way of life together for a time without serious hardships or dislocations, they will help clean up the environment, and most of all they will buy us additional time, at least an extra decade of it.

But what we do with that precious time is what will ultimately determine whether we fail or succeed as a sentient species.

So, once again simultaneously, and immediately, we should begin a properly funded series of Federal programs designed to develop one or more ideal energy source. And we must begin now, because the necessary basic research and technological development may take decades, and even then the actual deployment of the new energy sources will take decades more.

What are the current theoretically possible ideal energy sources?

One might be wind-power, sophisticated development of the basic windmills that have ground grain, drained land, and pumped water for centuries. Coupled with advanced storage batteries, really large windmills might satisfy total energy needs for rural areas, towns, and even small cities in locales where strong and prevalent winds can generally be counted upon, such as certain areas of the American Great Plains. Wind-power has several advantages. First, no new technology is really required. Second, the energy source is inexhaustible, and 100 percent clean. Third, capital investment needed would be relatively small.

But wind-power has major disadvantages, too. Most obviously, it will only work in limited geographical areas. Less obviously, really large-scale deployment of huge windmills may have unforeseen atmospheric and environmental effects. And forests of giant windmills may turn into ugly eyesores. Finally, the amount of electricity that could be generated by wind-power would simply be insufficient to meet major nationwide energy needs.

However, a network of sea-based windmills, based on deep-ocean buoys and driven by the same prevailing winds that powered sailing vessels all over the world, could provide a substantial fraction of the world's electrical energy needs—especially if the buoy-based wind-

mills could be linked to land by loss-free superconducting power transmission cables.

As a supplementary power source, at least, wind-power does have possibilities, and the capital needed to fully investigate its potential and even to deploy windmills would be relatively small, so a modest back-burner program here would probably be well worth the investment.

Solar power presents a more complicated, expensive, and ambiguous picture. It seems clear that solar heating and cooling of homes and modest-sized buildings is practical and viable. Heat from the sun can be trapped in rooftop reservoirs and used to heat the building in winter and, indirectly, to cool it in summer. These systems already exist and are gaining in popularity. Initial investment is relatively high, but ongoing costs are next to nil. Extensive solar heating and cooling of suitable homes and small buildings could certainly ease the drain on our energy supplies, and, fortunately, no Federally funded research program is really needed here.

Some people have suggested applying the principle of heat reservoirs on a massive and grandiose scale. The idea is to build heat reservoirs dozens or even hundreds of square miles in area in the western desert regions to collect solar energy as heat and convert it to electricity. Needless to say, the capital

investment would be enormous, and the effects upon the ecosphere and weather patterns rather uneasily imponderable. This scheme would seem to be much more trouble than it is worth, and certainly not worth the massive national investment it would entail.

Solar cells which convert light directly to electricity are a well-developed and already available technology which might be exploited on a larger scale than at present. They have already proven their worth and reliability powering numerous planetary probes, satellites, and even Skylab.

The trouble is that they provide relatively small amounts of current in relation to the total area of the solar cell array, and, of course, require continuous and relatively unobstructed sunlight in order to function. In space, where the arrays can be constantly turned to face the sun, and where the amounts of current required are not massive, these are not drawbacks. But on Earth, they are serious flaws.

Some people have suggested massive "farms" of solar cells in those same western deserts, but once again, this seems to be something like the domestic equivalent of "paving over Vietnam and turning it into a parking lot." Huge capital investment, and unknown ecological effects for comparatively small return.

Less fancifully, solar cells could certainly be used much more exten-

sively than at present as supplementary power sources. Every telephone pole and electric transmission tower could have its own little solar cell array. Ultimately, perhaps, street lights could become individually self-powered by solar cells cum storage batteries. The tops of buildings, warehouses, bridges, and so forth might add their modest contribution to the national electric grid. Earthbound solar cells can never become our major energy source, but they can help, and, once installed, the ongoing costs are minimal, and the energy source ideal and inexhaustible.

One imaginative and daring solar power proposal deserves some serious investigation, since it *does* have the potential of providing a major ideal energy source, and since it does bypass all the drawbacks of Earthbound arrays of solar cells. Under this scheme, huge arrays of solar cells could be assembled in Earth orbit. Weightless conditions would allow arrays dozens or even hundreds of square miles in area to be constructed relatively cheaply (especially when the Space Shuttle becomes fully operational) and flimsily. They could be constantly aimed at the sun, and if enough of them were built, and if their orbits were properly selected, they could provide sufficient electricity for the entire planet, and could provide it twenty-four hours a day to a properly planned global energy collection net. Far out as this may

sound, it could be accomplished with the available space technology of the 1980s.

Here, however, the major drawback is transmitting all this energy from orbit, where it would be generated, to the Earth, where it would be used. One proposal is to beam the energy to Earth collection stations with huge lasers, as light. Unfortunately, the beams would have to be perfectly aligned—one slip and considerable real estate could be vaporized. Another problem would be the question of what these multiple high-energy laser beams would do to the ionosphere, the ozone layer, and the atmosphere itself. An alternative proposal is to beam the energy Earthward as microwaves, to be collected by large antenna-like grids. But again, nobody really knows what pumping so much microwave energy through the atmosphere would do.

However, other people have suggested that Muhammed could come to the mountain. When the final version of the Space Shuttle becomes operational in the 1980s and the cost of boosting payloads into Earth orbit drops below 50 dollars a pound, locating certain industries in space itself will begin to become a serious possibility. The availability of abundant, cheap, and clean energy from orbital solar power arrays may make orbital industries economically attractive in certain cases despite the transportation

costs, and ecologically even more attractive.

For some time, this will only make economic sense for industries that require relatively low masses of raw materials, relatively high amounts of energy, and that produce end-products which have relatively high dollar-per-pound value—electronics, certain glass products, precision instruments, fission reactor fuel processing, pharmaceuticals, and so forth. In addition, certain Earthbound scientific research projects, particularly in magnetohydrodynamics and cryogenics, would benefit by the abundant supply of energy and vacuum potentially available in Earth orbit.

Further down the line, heavy basic industry in space might become economically viable when we achieve the capability of sending ships to the Asteroid Belt. Once in the Belt, iron asteroids, for example, could be kicked back to Earth orbit relatively cheaply (in terms of money and energy), and solar power could then be used to smelt iron and make steel in orbit. This steel could be manufactured into end products still in orbit which would then be shuttled to Earth. The economics of this don't make sense now, and won't for decades, but as the price of Earthbound energy goes up, and as the dwindling mineral supplies on Earth become more difficult and expensive to mine, the numbers may very well change.

Further, such a move of the steel industry to orbit would free a great deal of Earthbound energy for other uses, and would also greatly relieve industrial pollution problems.

So a reasonably funded program to explore the possibilities and problems of orbital solar power might provide rich dividends eventually. There is certainly enough potential here to justify building at least one pilot solar cell array for this purpose and setting up a few projects to utilize the energy it would produce. Once this is done, we will be in a better position to investigate the problems and dangers of transmitting such orbital solar power to the Earth, and if an ecologically benign and meteorologically benign transmission system should be developed, solar power may yet provide us with a major ideal energy source. Relatively low probability of success here at least in terms of solving the Earth's energy problems, but the spin-offs of such a program should, if nothing else, justify the expense of trying.

But, all things considered, the major thrust of a Federal research and development program designed to create and deploy an ideal energy source should be in hydrogen fusion. Hydrogen fusion is the most powerful reaction man has even the theoretical capacity to produce in mass-energy terms. The basic "ore" for the fuel is water, the most

abundant compound on Earth. In a hypothetical fusion reaction, deuterium and tritium, the relatively rare heavy isotopes of hydrogen, are separated from the ordinary hydrogen in water, ionized to form a plasma, then fused under very high heat and pressure, resulting in the production of helium, neutrons, and energy.

Thus fusion power would use water as fuel, produce abundant energy, and release as by-products hydrogen, oxygen (from the heavy hydrogen separation process), and helium. No radioactive "ash," hence no waste disposal problem. No significant danger of an accident releasing radioactivity into the environment. Indeed, the "wastes" will have many uses. Oxygen is useful in many industrial processes, and if it is true that deforestation has begun to significantly reduce the oxygen content of the atmosphere, here we have a direct way of redressing the balance. Hydrogen could be used as a replacement for gasoline. Helium is essential in the blossoming technology of cryogenics, and conceivably we might have a renaissance of the dirigible, perhaps ultimately powered by fusion engines.

Purists might point out that, technically speaking, hydrogen fusion is not an ideal energy source, since in a few billion years we might exhaust the supply of deuterium and tritium, but by then the sun will have evolved to a point

where the Earth will no longer be habitable for our form of life. And if we are then to go on to colonize other planets, or even other solar systems, some advanced form of fusion technology—perhaps the interstellar hydrogen ramscoop or the "fusion rocket"—will most likely have to power our arks.

As things stand now, we can easily enough produce uncontrolled fusion reactions in the form of hydrogen bombs, but controlled thermonuclear fusion, a "fusion reactor," may be decades away. It is precisely here where proper funding would bear the greatest fruit; fusion research devices are expensive, there are several different notions as to the best ways of reaching the desired temperatures, and different notions as to the configuration of the magnetic field most likely to achieve the necessary confinement. Present funding does not allow fusion researchers to pursue all possibilities with the maximum speed and vigor.

While there is some talk of a damn-the-expense Manhattan Project approach, scientists in the fusion research field generally say that a 300-million-dollar annual budget is about all that can really be usefully absorbed at this stage, and they estimate that at this level of funding we could begin a pilot fusion plant program in the 1980-85 timeframe.

Assuming the energy conservation programs suggested ear-

lier are in effect, and assuming that a 1985 target date for a pilot fusion plant is reasonable, we would be in excellent shape to actually transform our energy generating technology to hydrogen fusion in the 1985 to 2010 timeframe. We will have adequate petroleum to carry us through the 2010 target transformation date, and as we begin to deploy fusion reactors, use of petroleum will shrink.

At first glance, the capital expenditure needed to replace our present generators with fusion plants seems enormous, in excess of 100 billion dollars. But if we have conserved petroleum as we should, this expenditure can be spread out over two or three decades, making it far more digestible. Indeed, since present generating plants have finite useful lifespans, it may very well be possible to simply replace each one as its time comes with a fusion plant, thus completing the transformation with little or no additional expense over normal replacement costs.

Further, the overall program outlined in this article may actually result in considerable overall capital savings, particularly if a program to develop a hydrogen-fueled automobile engine is adequately funded in the 1980-85 timeframe, since one consequence of the changeover to fusion-generated electricity will be an abundant supply of hydrogen as a by-product. Moreover, a hydrogen car engine would generate only

water as a waste product and hence would be entirely non-polluting. Working models of such engines already exist today, so the cost of making them commercially viable would be comparatively minor. Where the enormous savings come in would be in the huge amounts of capital investment required to replace the personal car with mass transit. If we can have non-polluting cars running on a cheap and abundant fuel, we will simply not have to spend this vast amount of money. We have already invested tens of billions of dollars in the world's best highway system; why resign ourselves to considering this money thrown down a rathole? Americans have had a long love affair with the sense of freedom afforded by the personal car, and it need not end in a messy, expensive, and unhappy divorce.

This is only one example, and a very obvious one, of how we must adapt our thinking and planning to the future reality of a fusion-based technology, and start doing it now. Assuming we commit ourselves to developing fusion, and assuming all goes well, we will have solved our energy needs for the foreseeable future by the Twenty-first Century. But we should *not* kid ourselves into believing that this will put us back into an era of unlimited growth.

Unlimited energy for all practical purposes, yes. But we are already running into the leading edges of

another series of growth-limiting factors today, which we are ignoring only because the energy problem is more immediate and acute. By the Twenty-first Century, we will begin to run up against serious shortages in mineral resources. And unless there are unexpected and drastic changes in population trends, we will be running up against the limits of the ability of the Earth's ecosphere to supply food for the world population—not the present problems with droughts and short fertilizer supply, but the absolute limits of the Earth itself.

In terms of consumption of raw materials, we *must* reach a steady-state economy by the year 2000. If we do not do this systematically and voluntarily, it will be forced upon us cataclysmically. But a fu-

sion steady-state economy would not be the stagnant state that some economists envision. We would have a limited amount of raw materials to play with but an unlimited amount of energy with which to transform them. A fusion steady-state economy would be a transformational economy.

Thus one more reason to begin to conserve as much petroleum as possible right now—so that more of it will be available as raw material for the ever more important synthetics industries. And if we do not burn up our coal for fuel, we will be able to use it as a replacement for petroleum as a raw material for synthetics when the inevitable time comes, since we will have abundant hydrogen and energy for converting coal into hydrocarbons.

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3002

But beyond simple fusion is the possibility of the fusion torch—a fusion reactor into which *anything* can be thrown, dissociated, ionized, and separated out into its constituent elements electromagnetically.

The fusion torch would be the basis of a true fusion steady-state technology—not only a source of abundant energy, but a means with which to recycle *all* raw materials, creating not only an energy-abundant but virtually waste-free technology. A “closed raw material economy” in which the same total mass of matter would be perpetually transformed into ever-more-sophisticated and advanced technological artifacts.

Hardly a formula for technological, scientific, or cultural stagnation! Indeed, for billions of years prior to the advent of technological civilization, the total biomass of the Earth’s ecosphere operated on just this basis. Ever higher forms evolved from roughly the same mass of protoplasm. The total biomass increased only as organisms evolved more efficient means of impounding solar energy, and then reached a steady state again as it came up against raw material limits. Natural evolution itself is a “closed raw material economy.” A fusion steady state economy would merely apply the same dynamic evolutionary principle to the “technosphere.”

Beyond an Earthbound fusion steady-state economy is at least the

possibility of further growth in terms of raw material consumption—a Solar-System-wide economy. But here too, we will sooner or later run up against raw material limits, perhaps not for centuries, but one day inevitably. Further, it would seem that a Solar-System-wide civilization could be built only by a technology that had already mastered fusion and total raw material recycling. And if and when we go to the stars, each ship will have to operate on a fusion steady-state economy, as will extrasolar colonies. We cannot expect to be able to run away from our problems before we can solve them. Once we do solve our crisis-point problems here on Earth, however, the very technology needed to solve them will open the galaxy to man.

But this journey begins with a single step, and we stand at the crossroads now. Further down the road we are currently traveling lies only the entropic slag-heap of Condition Terminal. We have the technology, the energy, the money, and the knowledge to begin the necessary transformation now. And if we don’t begin now, we shall reach a point in the next decade or two when the means will no longer be in our hands.

If we succeed, the universe will open to our species, in space, and in time. If we fail, the fault will lie not in our stars but in ourselves. ■

ageism

WALTER L. FISHER



JACK GAUGHAN

Free (adj.): "Not subject to an arbitrary external power or authority."

—Webster's New International Dictionary

It was getting on toward the dog days of summer and the weather was hot and oppressive. Soon the children without jobs would be returning to the classrooms. Below the age of five school was still mandatory, but for the older citizens the schools had been retained through all the changes only as a means of keeping the unemployment figures down.

Inside the station house, the temperature was twenty degrees cooler, and the chief of police was glad

that the city council had air-conditioned the place several years before. They had ordered the machines from the automated factory, and they had arrived the next week, ready for installation.

It had been a quiet morning, considering the trouble they usually had at this time of year, and he was enjoying his free time and wishing that he could be playing baseball.

A lot of the ones who had to go back to school in the fall normally decided on one last fling and it really added to the workload in the late summer. Most of the incidents were routine and could be handled easily enough, but every once in a while there was a really tough one. The usual punishment for the late summer offenders was restricting their television viewing or eliminating desserts for a week. The really tough ones might spend six months going to bed at eight.

The chief figured that he had seen them all in his time on the force. He had just finished his third year as a policeman; nearly half his life on the force. He had served in every position from patrolman through chief, and he had been thinking recently about moving on to a new job. He didn't want to get stuck in one place all his life. After considering all the possibilities, he had decided to go into politics, and he wanted to be elected mayor before he was ten years old. "Bring some new blood to the city admin-

istration," he thought. "That old fuddy-duddy Bill Smith must be close to fifteen years old now. Time for some changes; some fresh air."

The chief leaned back in his chair and propped his sneakers up on the desk while unwrapping a sucker. He had just settled down to read a comic book when the buzzer on the intercom sounded.

"What is it, Doris?"

"I think you better come out here, Chief. We've got a big one on our hands," Doris said, popping her bubble gum at the end of each sentence. "Officer Billings just brought in a couple of oldsters charged with a 4077. He's booking them now."

"A 4077," he snapped. "I haven't seen a case of ageism since I was a rookie. I thought we had discouraged all of that kind of people."

In the booking room the chief could feel the tension in the air. Normally only the arresting officer, the suspect and the desk sergeant would be in the room, but it seemed that the seriousness of the crime had brought every unoccupied officer in the station to the booking room. The gravity of the charge he was making hadn't been lost on Billings either. He was sweating and fumbling as he took the fingerprints of the male suspect, and his patrol partner had his tranquilizer gun at the ready in case the couple put up a fight. Very

rarely would the oldsters object to the police being so much younger than they were, but it never hurt to be prepared for trouble.

Not wishing to add to the already tense atmosphere, the chief slowed his pace as he entered the booking room. He had to set an example for the rest of the officers, and it wouldn't do at all to show a nervous front in spite of the seriousness of the crime. After all, he couldn't let the younger officers think he was a scaredy-cat.

He studied the male suspect. The man was in his early forties and he towered over the officers at a good six feet in the air. The chief could see no outward signs that the man was a dangerous criminal, but he could detect a certain stiffness in the man's movements that looked like a barely controlled anger. In addition to being tall, the man was tanned and lean, with just a touch of gray in the hair around his face. He hadn't let himself go to pot like most of the oldsters who spent their time at the leisure camps.

The woman suspect sat on a bench at the side of the room and showed much the same characteristics as the man. She was five and a half feet tall and had golden blonde hair which was cut short and brushed to frame her face. It was a very pleasant face, and the chief could detect nothing of the look of the hardened criminal in her features either. He knew that this case was not going to be an

easy one. He could feel one of his headaches coming on. Any time he had to make a tough decision he got a headache, and he had noticed that they were coming more often lately. The pain was the worst behind his left ear, where the micro-computer implant had been made. When the doctor had put the little stimulator in his head during the standard operation, he had explained to the chief how the device used electrical pulses to speed up brain functions, but the chief had forgotten most of the details. The doctor had also said that the operation would not cause him any discomfort, but the implant still ached when the chief got one of his headaches.

"What have we here, Billings?" the chief asked, rubbing his left ear.

"A 4077, Chief. A couple named Longren."

"No mistake about that?"

"No, Chief. I got statements from the two victims. They're guilty all right."

"Those aren't victims," the tall man said. "They're my children."

"Get that tone out of your voice," Billings snapped. "They're not your children. You don't own them. They're just citizens who are living with you."

The tall man glared at Billings and shrugged away from him as the fingerprinting was completed. The chief could see that Billings was near the breaking point and he

moved between the officer and the suspect to avoid a physical conflict.

"Officer Billings is a little blunt, Mr. Longren, but he is right. Ageism is a very serious charge. You should know that the Thirtieth Amendment to the Constitution forbids you to impose your will on another citizen over the age of five."

"They had to go back to school," the tall man growled. "I turned off the television and sent them to bed. I'm their father, and I know my responsibilities. I intend to raise my children properly, not just turn the job over to someone else and run off to a Leisure World like most parents do." The man seemed to stand taller and stiffer after his pronouncement.

"Careful," the chief said. "Anything you say here can be used against you."

Billings was trembling with anger after listening to the unrepentant suspect. "And when they wouldn't go to bed," he screamed, "and tried to turn the television on again, you broke the set and actually spanked them. You're a primitive!"

"Easy, Billings," the chief broke in. "I don't like these throwback oldsters any better than you do, but there are laws to take care of them. Most of the oldsters respect the law, but we can take care of the ones who don't. You don't have to lose your temper."

The woman broke into sobs at the exchange and the chief wished

that, for her sake, the man would show a little shame for his illegal actions. The chief's head was throbbing now with a numbing pain, and the area around the brain-stimulating implant ached most of all. He could see no prospect of the situation getting any better.

Billings' patrol partner was getting more agitated all the time. He was shifting his weight from one foot to the other in a nervous little two-step and convulsively tightening his grip on the handle of his tranquilizing gun. The chief saw this and knew he would have to relieve the pressure in the room. The officer was just a rookie. He had only been on the force since he had reached the majority age of five years some three months ago; the chief was eight, and a three-year veteran. The chief didn't want the rookie overreacting and bringing a charge of brutality down on the department.

"Get a matron in here to fingerprint this woman," the chief ordered, "and the rest of you go back to work. We have everything under control here." His tones were reassuring, he thought.

The woman officer arrived and took a wadded tissue from her little purse to dry Mrs. Longren's tears. She had to stand on her tip-toes, and the blonde woman had to lean over, so she could dry the tears. When she finished she tucked the tissue back in her purse and com-

pleted the booking procedure. The desk sergeant finished filling out the papers and was ready to call in the judge for the hearing and sentencing, justice having lost much of the sluggishness of former eras.

"Chief, the judge is away at the Federal Summer Camp. He left word that you were to take care of anything that came up."

"All right," groaned the chief. "Bring them along to my office, and we'll have the hearing and the sentencing."

A small parade of people left the booking room for the chief's office. The matron led Mrs. Longren by the hand, the older woman shuffled along with her head down. She seemed to have lost her spirit, the chief noticed, but the man hadn't. Both Billings and his partner drew their weapons as the tall man had to be forced along to the office. He walked stiffly and his face reflected the anger that was still building inside him.

Once the group had reached the office, the chief sat down at his desk and started thumbing through the Judicial Handbook for the punishment in such a case. He had filled in for the judge before, and he hated making the decisions that were part of the judicial job. This case would only add fuel to his headache. He had little doubt that the pair were guilty of the offense. After all, two citizens had signed complaints against them.

After he found the page that he wanted, he studied the reports of the complainants and took testimony from the two officers who had arrested the couple. Then he asked for defense statements from the couple themselves.

The chief looked up from his desk to see the tall man standing rigidly before him. His lips were pressed into a line, and his face had reddened considerably.

"I have every right to discipline my own children. I am their father, and I know what's best for them. I brought them into this world, and I have the moral responsibility to take care of them until they can take care of themselves."

"Parentage, Mr. Longren, does not give you the right to dictate to younger citizens. The law clearly states that citizens reach their majority age at five, and beyond that time they are free agents."

"But I'm their mother," the blonde woman cried, speaking for the first time. "Mothers have rights to take care of their children."

"Not under the law," the chief replied.

The tall man was shaking now. His face had deepened in color even farther, and his lips had all but disappeared as he fought to control his emotions. The chief asked if the defendants were through with their statements, and, receiving no reply, he started to pronounce his judgment and sentence.

"The usual punishment in this type of case is left up to the presiding official, but the Judicial Handbook recommends extended imprisonment for a minor offense and elimination for a flagrant violation.

"I tend, in this case, toward the belief that this is a flagrant violation and recommend elimination."

The tall man finally broke. "You're a bunch of spoiled delinquents," he shouted. "Responsible adults should never have let you take over. You have no right to judge me. You should all have your backsides paddled." And with his final words, he lunged across the desk at the chief, perhaps to match action to his belief.

The chief tipped his chair over backwards in an effort to escape the enraged man. Billings reacted quickly and got off a tranquilizing shot that stopped the man in mid-flight. The tall man stiffened in the air and fell across the desk short of his goal. The blonde woman screamed and fainted.

Rising from behind his desk, the chief surveyed the results of the abbreviated battle. Billings was still in his crouch from firing, the matron was attending to the fallen woman and the tall man was slumped across his desk. "Take them out of here," he told Billings.

"Right, Chief. Have you decided on how you want them disposed of yet?"

"I was reading a story last night that gives me an idea. It was called 'Ali Baba and the Forty Thieves', and some guys got boiled in oil. Let's try that."

"Right, Chief."

The chief's head was beating now. The pain, especially behind his ear, had become worse since the tall man had come at him. He put his head down on the desk as the suspects were removed from his office.

When they all had gone he flipped the switch on his intercom and called his secretary. "Doris, hold all my calls for the rest of the afternoon. I'm going to take a nap. And bring me an aspirin."

"Right, Chief."

As Doris entered the office a few minutes later she asked, "I don't understand it, Chief. Why do you put up with all the trouble of this job?"

"Someone's got to do it, Doris. Someone's got to take the responsibility and make the decisions. When the machines could take care of themselves, and make everything, the oldsters didn't have to work anymore and they just didn't want to take the responsibility. They didn't want the job, and someone's got to do it."

She left the office as he lay down on the couch, clutching the worn spot on the edge of his favorite blanket. His thumb was tucked into the corner of his mouth. ■

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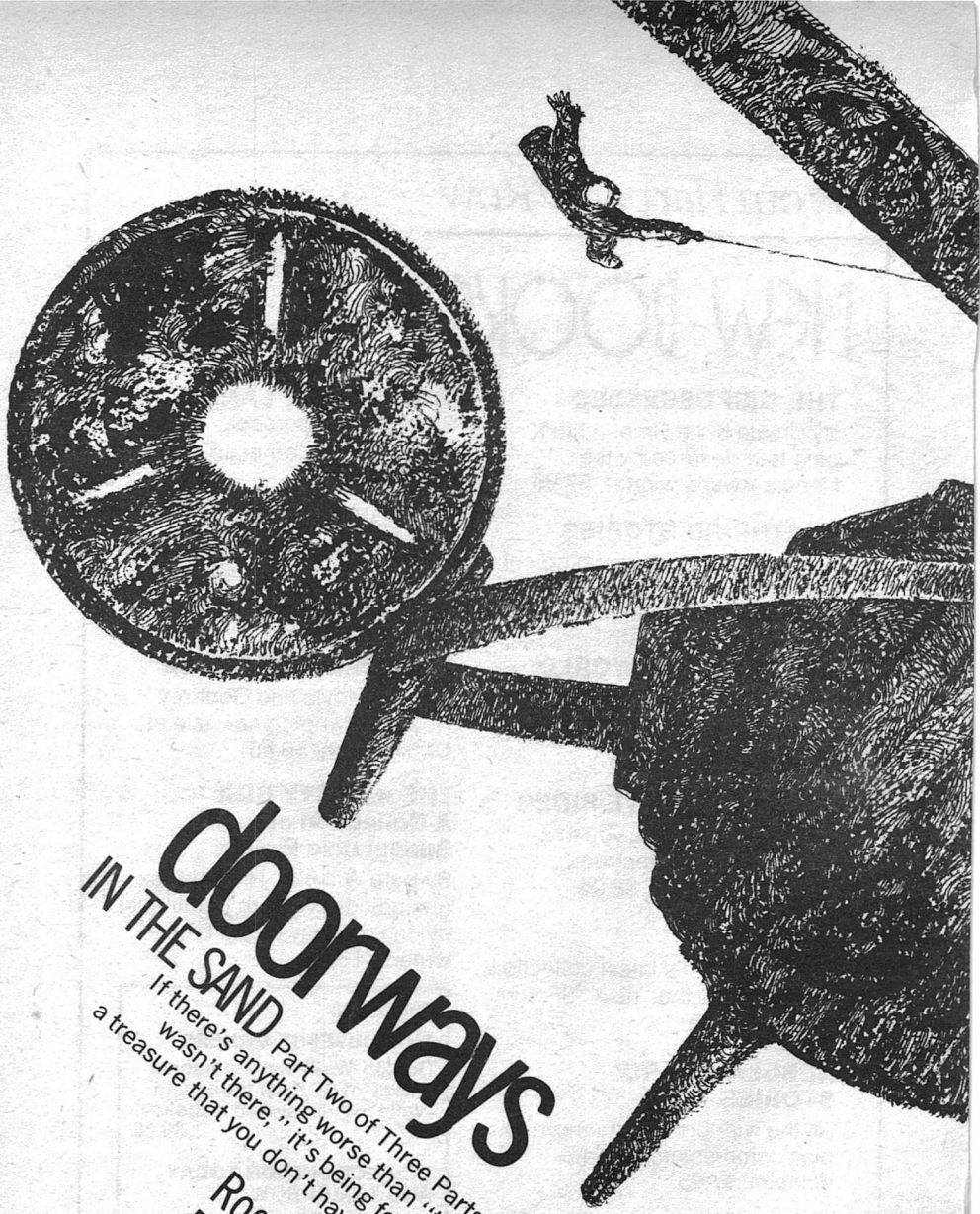


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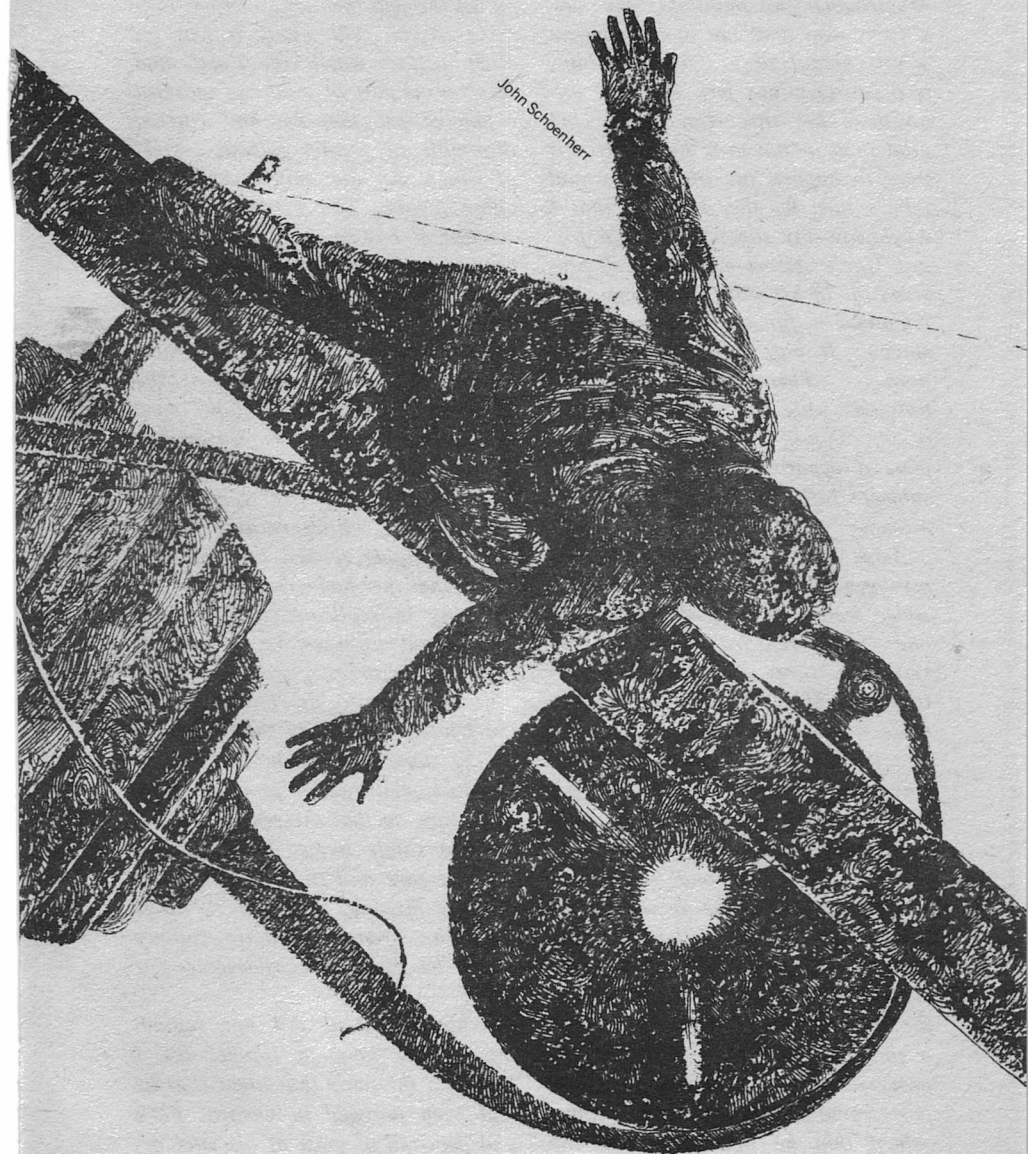
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IN THE SAND

Part Two of Three Parts.
If there's anything worse than "the little man who
wasn't there," it's being forced to produce
a treasure that you don't have.

Roger Zelazny

John Schoenherr



SYNOPSIS

My troubles are manifold: My new adviser, who does not at all approve of my compulsion to climb buildings, is a conscientious jerk who has announced his intention to see me graduated in the near future. If this were to happen my life style would take a turn for the worse, in that I would lose my stipend. My dear frozen Uncle Albert saw me well-provided for in his will, for so long as I remained a full-time undergraduate student. It has been thirteen years now . . . There is even a special university rule passed just to get rid of me, should I inadvertently complete a departmental major in any subject. Life gets rougher each semester.

Aside from my academic problems, my former Geology professor Paul Byler seemed convinced that I had one of his rejected models of the star-stone in my possession. This was incorrect. My ex-roommate Hal Sidmore had had one, but I was positive that he had taken it with him when he had moved out and into his own place after his marriage. Paul wanted the thing badly enough to beat up both of us and to threaten us if we did not come up with it. In checking with Hal, I later learned that he had switched the rejected specimen which Paul had given him for one of the better-looking ones on a shelf in the man's lab. This had occurred during a late-night poker party some time ago. Hal now maintained that he had not taken the

stone with him when he had moved out of the apartment.

As to the real stone, it was an alien artifact which the Earth had received as part of a sort of cultural exchange program we had entered into with the greater galactic society of which we had only recently become aware. The program works somewhat like a kula chain, that ceremonial trading network found among various island groups east of New Guinea. We had sent along the Mona Lisa and the British Crown Jewels and received in return the star-stone—a relic of a long dead civilization, the oldest known artifact in the galaxy—and the Rhennius machine—an early version of an alien device which rotates things through higher spaces. Paul had alleged that he had simply been attempting to replicate the stone for commercial purposes; i.e., to market it as a souvenir.

It occurred to us, however, that the United Nations in their capacity as the stone's custodian might have commissioned Paul to produce a display copy, so that the real one could be kept safely locked away. If this was the case and the real stone was actually missing, then our relations with the greater galactic society might be given a considerable setback.

Whatever, Paul did not remain around too long to trouble us. I heard on the news that night that he had been mugged in Central Park and deprived of most of his vital or-

gans as well as his wallet. Being a mugee these days can, in some ways, be even rougher than it was a generation ago.

I departed for Australia, to conduct a small bit of personal research for a project oriented course I was taking. There I was set upon by Morton Zeemeister and Jamie Buckler, a pair of thugs who were convinced that I possessed the star-stone or knew where it was. From their remarks, it appeared that they were also the persons responsible for what had happened to Paul Byler.

In that I could not tell them what I did not know and they did not believe that I did not know, they staked me out to experience the elements and reconsider my position. Close to nature then and regretting it, I had about resigned myself to a bad end when I was rescued by an alien plain-clothesman disguised as a wombat. He and his partner, who was passing as a kangaroo, whisked me off the face of the Earth and into orbit with only dehydration, general fatigue, bruises, abrasions and a few small bullet holes to show that I had been in any trouble at all.

I responded well to their ministrations and for some reason, while still in a groggy condition, discovered that I could understand the alien tongue they were speaking. This was apparently none of their doing, so I kept my mouth shut about it. I was also possessed of a burst of mathematical enthusiasm

such as I had not felt for years. This passed before too long, and I became aware that they were planning to transport me to another planet. They, too, were convinced that I knew something concerning the star-stone's whereabouts, but they felt that this information was on file in me at some place other than the conscious level. They wanted my consent to be examined by a telepathic analyst on another world, for purposes of extracting this information.

I was immediately leery of the proposal, especially when they admitted that there was no way of telling how long I might have to remain away. They seemed about ready to go ahead without my consent when a nagging little voice in my mind advised me that they were violating my rights under the Galactic Code and provided me with the proper citation. The cops—whose names, by the way, were Charv and Ragma—were upset when I invoked the law, but finally agreed to return me to Earth, warning me all the while that I was making a bad mistake. I went anyhow.

Detecting someone inside, I entered my own apartment through the bedroom window and, listening, learned that there were two men (a) waiting for me, (b) drinking my booze, and (c) toasting the queen while they were about it. I departed and spent the night at Hal's place. He was alone, as he and Mary had had an argument and she had gone

home to her mother's. Hal told me that a horde of individuals had been attempting to learn my whereabouts, including a State Department employee named Nadler. Also, Hal's apartment had been broken into several times and he believed that he was being watched and followed. Outside of that, everything was normal.

We got drunk together and I slept on his sofa. During the night, my still, small civil liberties champion stirred again and reached me with a message indicating that I should obtain access to the Rhennius machine, pass an object through it several times, noting the transformation it underwent on each occasion and then go off and get drunk. This seemed at least as good a piece of advice as many I had received recently, so I resolved to be about it.

I traveled up to New York, studied the layout of the hall which housed the device, returned that night and broke into the place. I was discovered by a guard just as I completed my testing of the transformations on a penny. I shinnied back up my rope and was near to a window when the guard threatened to shoot. What the hell! I jumped for it and he fired.

Part Two

VI

It was the sound of the steam, whistling through, rattling the ancient pipes, that drew me across the fine line to the place where identity surprises itself. I balked immedi-

ately and tried to go back, but the heating system wouldn't let me. In close-eyed preconsciousness I clung to the transitory pleasure of being without memory. Then I realized that I was thirsty. And then that something hard and uncomfortable was indenting my right side. I did not want to wake up.

But the circle of sensations widened, things fell together, the center held. I opened my eyes.

Yes . . .

I was lying on a mattress on the floor in the corner of a cluttered, gaudy room. Some of the clutter was magazines, bottles, cigarette butts and random articles of clothing; some of the gaud was paintings and posters that clung to the walls like stamps on a foreign parcel, bright and crooked. Strings of glass beads hung in a doorway to my right, catching what seemed like morning light from a large window directly across from me. A golden blizzard of dust fell through its rays, stirred perhaps by the donkey who was nibbling at the potted plant that occupied the window seat. From the sill, an orange cat blinked at me in yellow-eyed appraisal, then closed her eyes.

A few small traffic sounds came from a point beyond and below the window. Through the sun-patterns on the streaked glass, I could make out the upper corner of a brick building sufficiently distant to indicate that a street did indeed lie between us. I made my first dry

swallowing movement of the morning and realized again how thirsty I felt. The air was dry and rank with stale odors, some familiar, some exotic.

I shifted slightly, testing myself for aches. Not bad. A small throbbing from the frontal sinuses, not sufficient to herald a headache. I stretched then, feeling a fraction fitter.

I discovered the sharp object prodding my side to be a bottle, empty. I winced as I recalled how it had gotten that way. The party, oh yes . . . There was a party . . .

I sat up. I saw my shoes. I put them on. I stood.

Water . . . There was a bathroom around the corner through the beads in the back . . . Yes.

Before I could move in that direction, the donkey turned, stared at me, advanced.

By a splinter of a second, I'd say, I saw what was coming, before it came.

"You are still fogged up," the donkey said, or seemed to say, the words ringing strangely in my head, "so go quench your thirst and wash your face. But do not use the window back there for an exit. It could result in difficulties. Please return to this room when you have finished. I have some things to tell you."

From a place beyond surprise, I said, "All right," and I went on back and ran the water.

There was nothing especially sus-

picious beyond the bathroom window. No one in sight to be the wiser, no one to do anything about it if I decided to cross over to the next building, then up, up and away. I had no intention of doing it just then, but it made me wonder whether the donkey might be something of an alarmist.

The window . . . My mind went back to that bar of black, to the snap of the gun, to the glass. I tore my jacket on the frame and I scraped my shoulder where I hit. I kept rolling, rolled to my feet and took off running, crouched.

An hour later I was in a bar in the Village carrying out the second part of my instructions. Not too quickly though, as the fugitive feeling was still with me and I wanted to hang onto my faculties long enough to regroup myself emotionally. Consequently, I ordered a beer and sipped it slowly.

Small gusts of wind had been tumbling bits of paper along the streets. Random flakes of snow had angled by, turning to damp splotches wherever they touched. Later, the middle state was omitted and cold raindrops alternately sprayed, dripped, ceased altogether, drifted in patches of mist.

The wind whistled as it slipped about the door, and even with my jacket on I felt chilly. So ten or fifteen minutes later when I'd finished the beer, I went looking for a warmer bar. That was what I told myself, though from some more

primitive level the flight-impulse still operated, assisting in the decision.

I hit three more bars in the next hour, drinking one beer per and moving on. Along the way, I stopped in a package store and picked up a bottle, as it was late and I was loath to go too blotto in public. I began thinking about where I would spend the night. I'd get a taxi by and by, I decided, let the driver find me a hotel and complete the intoxication business there. No sense in speculating what the results would be, and no need to hurry things along . . . At the moment, I wanted people about me, their voices, walls that echoed a tinny music. While my last memories of Australia were messy and blurred, I had been bright-eyed and strung tight as a tennis racket on departing the hall. I could still hear the snap and the brittle notes of the glass. It is not good to think about having been shot at.

The fifth bar that I hit was a happy find. Three or four steps below street level, warm, pleasantly dim, it contained sufficient patrons to satisfy my need for social noises, but not so many that anyone begrudged my taking up a table against the far wall. I took off my jacket and lit a cigarette. I would stay awhile.

So it was there that he found me, half an hour or so later. I had succeeded in relaxing considerably,

forgetting a bit and achieving a state of warmth and comfort, let the wind go whistle, when a passing figure halted, turned and settled onto the seat across from me.

I did not even look up. My peripheral vision told me it was not a cop and I did not feel like acknowledging an unsolicited presence, especially the likely weirdo.

We sat that way—unmoving—for almost half a barbed minute. Then something flashed on the tabletop and I looked down, automatically.

Three totally explicit photos lay before me: two brunettes and a blonde.

“How'd you like to warm up with something like that on a cold night like this?” came a voice that snapped my mind through years to alertness and my eyes forty-five degrees upward.

“Dr. Merimee!” I said.

“Ssh!” he hissed. “Pretend you're looking at the pictures!”

The same old trench coat, silk scarf and beret . . . The same long cigarette holder . . . Eyes of unbelievable magnitude behind glasses that still gave me the impression of peering into an aquarium. How many years had it been?

“What the devil are you doing here?” I said.

“Gathering material for a book, of course. Dammit! Look at the pictures, Fred! Pretend to study them. Really. Trouble afoot. Yours, I think.”

So I looked back at the glossy ladies.

"What kind of trouble?" I said.

"There's a fellow seems to be following you."

"Where is he now?"

"Across the street. In a doorway."

"What's he look like?"

"Couldn't really tell. He's dressed for the weather. Bulky coat. Hat pulled down. Head bent forward. Average height or a bit less. Possibly kind of husky."

I chuckled.

"Sounds like anybody. How do you know he's following me?"

"I caught sight of you over an hour ago, several bars back. That one was fairly crowded, though. Just as I'd started toward you, you got up to leave. I called out, but you didn't hear me over the noise. By the time I'd paid up and gotten out myself you were partway up the street. I started after you and saw this fellow come out of a doorway and do the same. I thought nothing of it at first, but you did wander awhile and he was making all the same turns. Then when you found another bar, he just stopped and stared at it. Then he went into a doorway, lit a cigar, coughed several times and waited there, watching the place. So I walked on by as far as the corner. There was a phone booth, and I got inside and watched him while I pretended to make a call. You didn't stay in that place very long, and when you

came out and moved on, he did the same. I held off approaching you for two more bars, just to be positive. But I am convinced now. You are being followed."

"OK," I said. "I buy that."

"Your casual acceptance of the situation causes me to believe that it was not wholly unexpected."

"Exactly."

"Does it involve anything I might be able to help you with?"

"Not in terms of the headache's causes. But possibly the immediate symptoms . . ."

"Like getting you away from here without his noting it?"

"That is what I had in mind."

He gestured with a bandaged hand.

"No problem. Take your time with your drink. Relax. Consider it done. Pretend to study the merchandise."

"Why?"

"Why not?"

"What happened to your hand?"

"Accident, sort of, with a butcher knife. Have they graduated you yet?"

"No. They're still working on it."

A waiter came by, deposited a napkin and a drink before him, took his money, glanced at the photos, gave me a wink and moved back toward the bar.

"I thought I had you cornered in History when I left," he said, raising the drink, taking a sip, pursing his lips, taking another. "What happened?"

"I escaped into Archeology."

"Shaky. You had too many of the Anthro and Ancient History requirements for that to last long."

"True. But it provided a resting place for the second semester, which was all I needed. In the fall they started a Geology program. I mined that for a year and a half. By then, several new areas had opened up."

He shook his head.

"Exceptionally absurd," he said.

"Thank you."

I took a big, cold swallow.

He cleared his throat.

"How serious is this situation, anyway?"

"Offhand, I'd say it's fairly serious—though it seems to be based on a misunderstanding."

"I mean, does it involve the authorities—or private individuals?"

"Both, it seems. Why? You having second thoughts about helping me?"

"No, of course not! I was trying to estimate the opposition."

"I'm sorry," I said. "I guess I do owe you an appraisal of the risk involved . . ."

He raised a hand as if to stop me, but I went on anyway:

"I have no idea who that is outside. But at least a couple people involved in the whole business seem to be dangerous."

"All right, that is sufficient," he said. "I am, as always, totally responsible for my own actions, and I choose to assist you. Enough!"

We drank on it. He rearranged the pictures, smiling.

"I really *could* fix you up for tonight with one of them," he said, "if you wanted."

"Thanks. But tonight's my night for getting drunk."

"They are not mutually exclusive pastimes."

"They are tonight."

"Well," he said, shrugging, "I'd no intention to force anything on you. It is just that you aroused my hospitality. Success often does that."

"Success?"

"You are one of the few successful persons I know."

"Me? Why?"

"You know precisely what you are doing and you do it well."

"But I don't really do much of anything."

". . . And of course the quantity means nothing to you, nor the weight others place upon your actions. In my eyes, that makes you a success."

"By not giving a damn? But I do, you know."

"Of course you do, of course you do! But it is a matter of style, an awareness of choice—"

"OK," I said. "Observation acknowledged and accepted in the proper spirit. Now—"

"—and that makes us kindred souls," he went on. "For I am just that way myself."

"Naturally. I knew it all along. Now about getting out of here . . ."

"There is a kitchen, with a back door to it," he said. "They serve meals here during the day. We will go out that way. The barman is a friend of mine. No problem there. Then I will take you by a round-about way to my place. There should be a party going on there now. Enjoy as much as you want of it and sleep wherever you find a warm corner."

"Sounds very inviting, especially the corner. Thanks."

We finished our drinks and he put the ladies back in his pocket. He went to talk with the bartender and I saw the man nodding. Then he turned and gestured with his eyes toward the rear. I met him at the door to the kitchen.

He guided me through the kitchen and out the back door into an alleyway. I turned up my collar against the continuing drizzle and followed him off to the right. We turned left at an intersecting alley, passed among the dark shapes of trash containers, splashed through a lake of a puddle that soaked my socks and emerged in the next block.

Three or four blocks and twice as many minutes later, I followed him up the stairs in the building that held his quarters. The dampness had raised a musty smell and the stairs creaked beneath us. As we ascended, I heard faint sounds of music mixed in with voices and a bit of laughter.

We followed the sounds, coming at last to his door. We entered, he performed a dozen or so introductions and took my coat. I found a glass and some ice and some mix, took it and myself and my bottle to a chair and sat down, to talk, watch and hope that enjoyment was contagious while I drank myself into the big blank place that was waiting somewhere for me.

I found it eventually, of course, but not before seeing the party through to the dust and ashes stage. As everyone else present was headed along paths that led in the same direction, I did not feel too far removed from the action. Through the haze, the sound, the booze, everything came to seem normal, appropriate and unusually

THE ANALYTICAL LABORATORY

APRIL 1975

Place	Title	Author	Points
1.	Lifeboat (Conclusion)	Gordon R. Dickson and Harry Harrison	1.806
2.	Crazy Oil	Brenda Pearce	2.193
3.	The Sixth Face	Thomas Sullivan	3.583
4.	Doing Lennon	Gregory Benford	3.587
5.	To Be Or Knot To Be	Alecs Baird	4.133

bright, even the reentrance of Merimee, clad only in a garland of bay leaves and mounted on the small gray donkey that made its home in one of the back rooms. A grinning dwarf preceded him with a pair of cymbals. For a while, nobody seemed to notice. The procession halted before me.

"Fred?"

"Yes?"

"Before I forget, if you should oversleep in the morning and I'm gone when you get up, the bacon is in the lower drawer on the right in the refrigerator, and I keep the bread in the cupboard to the left. The eggs are in plain sight. Help yourself."

"Thanks. I'll remember that."

"One other thing . . ."

He leaned forward and lowered his voice.

"I've been doing a lot of thinking," he said.

"Oh?"

". . . About this trouble in which you find yourself?"

"Yeah?"

"I do not know quite how to put it . . . But—do you think it possible you could be killed as a result?"

"I believe so."

"Well—only if it grows extremely pressing, mind you—but I have some acquaintances of a semi-savory sort . . . If . . . If it becomes necessary for your own welfare that some individual predecease you, I would like you to have my phone number committed to memory.

Call if you must, identify him and mention where he can be found. I am owed a few favors. That can be one."

"I—I don't really know what to say. Thank you, of course. I hope I don't have to take you up on it. I never expected—"

"It is the least I could do to protect your Uncle Albert's investment."

"You knew of my Uncle Albert? His will? You never mentioned—"

"Knew of him? Al and I were schoolmates at the Sorbonne. Summers we used to run arms to Africa and points east. I blew my money. He hung onto his and made more. A bit of a poet, a bit of a scoundrel. It seems to run in your family. Classical mad Irishmen, all of you. Oh yes, I knew Al."

"Why didn't you mention this years ago?"

"You would have thought I was just pulling it on you to get you to graduate. That would not have been fair—interfering with your choices. Now though, your present problems override my reticence."

"But—"

"Enough!" he said. "Let there be revelry!"

The dwarf banged the cymbals mightily, and Merimee extended his hand. Someone placed a bottle of wine in it. He threw back his head and drew a long, deep swig. The donkey began to prance. A sleepy-eyed girl seated near the hanging beads suddenly sprang to

her feet, tearing at her hair and blouse buttons, crying, "Evoe! Evoe!" the while.

"See you around, Fred."

"Cheers."

At least, that is sort of how I remember it: Oblivion had crept perceptibly nearer by then, was almost touching my collar. I leaned back and let it go to work.

Sleep, that unwrinkleth the drip-dry garment of concern, found me later at that dust and ashes place

where the people go out one by one. I made it to the mattress in the corner, sprawled there and said good night to the ceiling. Then—

With the water streaming in the basin, lather on my face, Merimee's razor in my hand and me in the mirror, the mists fell away and there was Mt. Fuji. From this station, couched in the center of my most recent dark space, was the thing I had sought, freed by whatever arcane cue had just occurred:

DO
YOU
HEAR
ME, FRED?

YES.

GOOD.
THE UNIT
IS PROPERLY
PROGRAMMED.
OUR PURPOSES
WILL BE SERVED.

WHAT ARE
OUR PURPOSES?

A SINGLE
TRANSFORMATION
IS ALL THAT WILL
BE NECESSARY NOW.

WHAT SORT OF
TRANSFORMATION?

PASSAGE
THROUGH THE
MOBILATOR OF THE
N-AXIAL INVERSION UNIT.

YOU
MEAN THE
CENTRAL COMPONENT
OF THE RHENNIUS MACHINE?

AFFIRMATIVE.

WHAT DO YOU
WANT ME TO
RUN THROUGH IT?

YOURSELF.

MYSELF?

YOURSELF.

WHY?

VITAL
TRANSFORMATION.

OF WHAT SORT?

INVERSION,
OF COURSE.

WHY INVERT?

NECESSARY.
IT WILL SET
EVERYTHING IN
PROPER ORDER.

BY REVERSING ME?

EXACTLY.

COULD IT
BE DANGEROUS
TO MY HEALTH?

NO
MORE
THAN MANY
OTHER THINGS
YOU DO IN THE COURSE
OF YOUR DAILY AFFAIRS.

WHAT
ASSURANCE
HAVE I OF THIS?

MINE.

IF I RECALL
CORRECTLY, YOU
ARE A RECORDING.

I- XXXX
XXXXXXXXXX
XXXXXXXXXX
XXXX I- XX
XXXXXXXXXXXX

XXXXXXXXXX I—
XXXSPEICUSPEIC
USPEICUSPEICUSP
EICUSXXXXXXXXXXXX
PEICXXXUSPEIXXXX
XXXXXXXXXXXXXXXXXXXX

XXXXXXXXXXXXXXXXXXXX
XXXXXXXXXXXXXXXXXXXX
DO YOU HEAR ME, FRED?
DO YOU HEAR ME, FRED?

WILL YOU DO IT?

CORRECT.
BY NO MEANS
MORE THAN THAT.

I AM
HAMPERED
BY THE LACK
OF AN ALGEBRAIC
SOLUTION TO A GENERAL
EQUATION OF THE FIFTH
DEGREE.

IT WOULD
BE DANGEROUS
TO YOUR HEALTH.

TERMINALLY SO.

NECESSARY.
IT WILL SET

NEVER MIND.

STILL HERE.

JUST ONCE
THROUGH THE THING?

WHY NOT?
WHAT WOULD
HAPPEN IF I
REPEATED IT?

JUST TELL ME
IN PLAIN WORDS.

HOW DANGEROUS?

I AM
NOT CERTAIN
I LIKE THE IDEA.

There it was, in its entirety. Instant replay—only in less time than it took me to raise my hand to my cheek and cut a highway through the lather. My nameless respondent had come through all right, and this time he had promised a satisfying result. I began to hum. Even a shaky assurance of enlightenment is better than indefinite uncertainty.

When I had finished, I bypassed the front room and made my way into the kitchen. It was a narrow place, with a sink full of dirty dishes and the smell of curry in the air. I set about assembling a meal.

In the lower righthand drawer of the refrigerator, lying atop the package of bacon, I discovered a note. It said, simply: "Remember the number and what I said about calling it."

So I ran the digits through my mind, over and over, as I scrambled, fried and toasted. Then, just as I was sitting down to eat, the donkey came into the kitchen and stared at me.

"Coffee?" I suggested.

"Stop that!"

"What?"

"Those numbers. It is extremely irritating."

"What numbers?"

"The ones you are thinking. They are swarming like insects."

I spread marmalade on a piece of toast and took a bite.

"Go to hell," I said. "My uses for telepathic donkeys are limited, and what I do in the privacy of my

own mind is my business."

"The human mind, Mr. Cassidy, is seldom worth the visit. I assure you I did not request the assignment of monitoring yours. It is obvious now that I erred in mentioning a creature courtesy you cannot appreciate. I suppose that I should apologize."

"Go ahead."

"You go to hell."

I started in on the eggs and bacon. A minute or two passed.

"My name is Sibra," the donkey said.

I decided that I did not really care and went on eating.

"I am a friend of Ragma—and Charv."

"I see," I said, "and they sent you to spy on me, to poke around in my mind."

"That is not so. I was assigned the job of protecting you until you were fit to receive a message and act on it."

"How were you to protect me?"

"By trying to keep you inconspicuous—"

"With a donkey following me around? Who briefed you, anyway?"

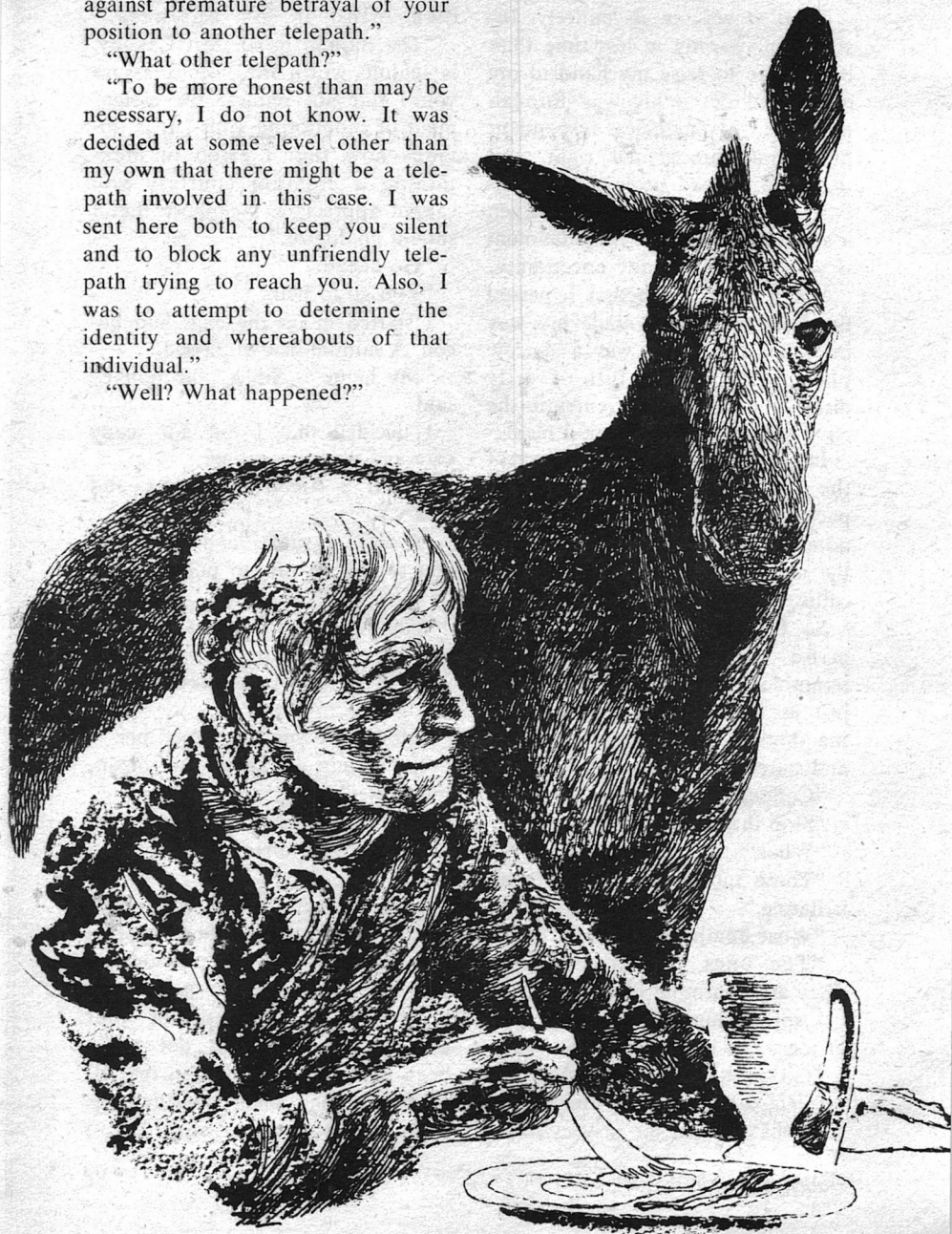
"I am aware of my prominence in this guise. I was about to explain that my task was to provide for your mental silence. As a telepath, I am capable of dampening your thought noises. It has not really been necessary, however, in that alcohol deadens them considerably. Still, I am here to shield you

against premature betrayal of your position to another telepath."

"What other telepath?"

"To be more honest than may be necessary, I do not know. It was decided at some level other than my own that there might be a telepath involved in this case. I was sent here both to keep you silent and to block any unfriendly telepath trying to reach you. Also, I was to attempt to determine the identity and whereabouts of that individual."

"Well? What happened?"



"Nothing. You were drunk and no one tried to reach you."

"So the guess was wrong."

"Possibly. Possibly not."

I resumed eating. Between mouthfuls, I asked, "What is your level or rank, or whatever? The same as Charv's and Ragma's? Or are you higher up?"

"Neither," the donkey replied. "I am in budget analysis and cost accounting. I was drafted as the only available telepath capable of assuming this role."

"Are you under any restrictions as to what you can tell me?"

"I was told to exercise my judgment and common sense."

"Strange. Nothing else about this business seems particularly rational. They must not have had time to brief you fully."

"True. There was quite a rush about it. I had to allow for travel time and the substitution."

"What substitution?"

"The real donkey is tied up out back."

"Uh-huh."

"I am reading your thoughts, and I am not about to give you any answers Ragma refused you."

"OK. If your common sense and good judgment tell you to withhold information that may be vital to my safety, then by all means be sensible." I swallowed the final forkful. "What's that message you mentioned?"

The donkey looked away.

"You had expressed some will-

ingness to cooperate in the investigation, had you not?"

"I had—earlier," I said.

"You would not agree to go offworld to be examined by a telepathic analyst, however . . ."

"That is correct."

"We were wondering whether you might be willing to allow me to attempt it—here, now."

I took a sip of coffee.

"Have you had much training along these lines?"

"Just about every telepath knows something of the theory involved, and of course I possess a lifetime of experience with telepathy—"

"You are a cost accountant," I said. "Don't try to impress the natives."

"All right. I am not trained for it. I think I can do it, though. So do the others, or I would not have been approached to try."

"Who are the others?"

"Well . . . Oh hell! Charv and Ragma."

"I've a feeling they are not proceeding according to the manual in this. Correct?"

"Field agents in their line of work possess a great deal of discretionary authority. They have to."

I sighed and lit a cigarette.

"How old is the organization which employs you?" I said. When I detected hesitation, I added, "Surely there is no harm in telling me that."

"I guess not. Several thousand—years, by your measure."

"I see. In other words, it is one of the biggest, oldest bureaucracies around."

"I see in your mind what you are getting at, but—"

"Let me shape it anyway. As a student of business administration, I know that there is a law of evolution for organizations as stringent and inevitable as anything in life. The longer one exists, the more it grinds out restrictions that slow its own functions. It reaches entropy in a state of total narcissism. Only the people sufficiently far out in the field get anything done, and every time they do they are breaking half a dozen rules in the process."

"I will grant you that that view is not without some merit. But in our case—"

"Your proposal violates some rule. I know it. I do not have to read your mind to know that you are uneasy about this whole affair because of it. Isn't that right?"

"I am not permitted to discuss policies and internal operating procedures."

"Naturally," I said, "but I had to say it. Now tell me about this analysis business. How do you go about it?"

"It would be similar to the simple word association test with which you are familiar. The difference is that I will do it from the inside. I will not have to guess at your reactions. I will know them at a primary level."

"This seems to indicate that you

cannot look directly into my subconscious."

"That is correct. I am not that good. Ordinarily, I can only read your surface thoughts. When I hit something this way, though, I should be able to keep pressing the feeling and follow it on down to where its roots are twisted."

"I see. Then it does require considerable cooperation on my part?"

"Oh yes. It would take a real pro to push in against your will."

"I guess I am fortunate there are none of them available."

"I wish there were. I am certain that I am not going to enjoy it."

I poured another cup of coffee.

"What do you say to our doing it this afternoon?" Sibla asked.

"What's wrong with right now?"

"I would rather wait for your nervous system to return to normal. There are still some secondary effects from the beverages you consumed. They make scanning you more difficult."

"Does that always hold?"

"By and large."

"Interesting."

I sipped more coffee.

"You are doing it again!"

"What?"

"Those numbers, over and over."

"Sorry. Hard to keep them out."

"That is *not* the reason!"

I stood. I stretched.

"Excuse me. I require the use of the facility again."

Sibla moved to block my way, but I moved faster.

"You are not thinking of leaving, are you? Is that what you are masking?"

"I never said that."

"You do not have to. I can feel it. You will be making a mistake if you do."

I headed for the door, and Sibla turned quickly to follow.

"I will not permit you to go—not after the indignities I have suffered to get at that miserable knot of ganglia!"

"That's a nice way to talk!" I said. "Especially when you want a favor."

I dashed up the hall and into the john. Sibla clattered after.

"We are doing you the favor! Only you are too stupid to realize it!"

"'Uninformed' is the word—and that's your fault!"

I slammed the door, locked it.

"Wait! Listen! If you go, you could be in real trouble!"

I laughed.

"I'm sorry. You came on too strong."

I flung open the window.

"Then go, you ignorant ape! Throw away your chance at civilization!"

"What are you talking about?"

Silence.

Then, "Nothing. I am sorry. But you must realize that it is important."

"I already know that. What I want to know is why."

"I cannot tell you."

"Then go to hell," I said.

"I knew you were not worth it," Sibla replied. "From what I have seen of your race, you are nothing but a band of barbarians and degenerates."

I swung up onto the sill, crouched a moment while I estimated the distance.

"Nobody likes a smartass either," I said, and then I jumped.

VII

Dennis Wexroth didn't say a damn thing. If he had, I might have killed him just then. He stood there with his palms pressed against the wall behind him, a deepening redness about his right eyesocket where it would eventually puff up and go purple. The receiver of his uprooted telephone hung over the edge of the wastebasket where I had hurled it.

In my hand was a fancy piece of parchment which told me that
received a Doctorate of Philosophy
Frederick Cunningham Cassidy had
in Anthropology.

Fighting for some measure of control, I slipped it back into its envelope and dammed my river of profanity.

"How?" I said. "How could you possibly do such a thing? It—it's illegal!"

"It is perfectly legal," he said softly. "Believe me, it was done under advice."

"We'll just see how that advice holds up in court," I said. "I was

never admitted to grad school, I haven't submitted a dissertation, I never took any orals or language exams and no notice was filed. Now you tell me how you justify giving me a PhD. I'd really like to know."

"First, you are enrolled here," he said. "That makes you eligible for a degree."

"Eligible, yes. Entitled, no. There is a distinction."

"True, but the elements of entitlement are determined by the administration."

"What did you do? Have a special meeting?"

"As a matter of fact, there was one. And it was determined that enrollment as a full-time student was to be deemed indicative of the intention to take a degree. Consequently, if the other factors were met—"

"I've never completed a major," I said.

"The formal course requirements are less rigid when it comes to the matter of an advanced degree."

"But I never took a BA!"

He smiled, thought better of it, erased it.

"If you will read the regulations very carefully," he said, "you will see that nowhere do they state that a baccalaureate is a prerequisite for an advanced degree. A 'suitable equivalent' is sufficient to produce a 'qualified candidate'. They are phrases of art, Fred, and the administration does the construing."

"Even granting that, the dissertation requirement is written into the regs. I've read that part."

"Yes. But then there is *Sacred Ground: A Study of Ritual Areas*, the book you submitted to the University Press. It is sufficiently appropriate to warrant treatment as an Anthropology dissertation."

"I've never submitted it to the department for anything."

"No, but the editor asked Dr. Lawrence's opinion of it. His opinion, among other things, was that it would do for a dissertation."

"I'll nail you on that point when I get you in court," I said. "But go on. I'm fascinated. Tell me how I did on my orals."

"Well," he said, looking away, "the professors who would have sat on your board agreed unanimously to waive the orals in your case. You have been around so long and they know you so well that they considered it an unnecessary formality. Besides, two of them were classmates of yours as undergraduates and they felt kind of funny about it."

"I'll bet they did. Let me finish the story myself. The heads of the language departments involved decided I had taken sufficient courses in their respective bailiwicks to warrant their certifying as to my reading abilities. Right?"

"That, basically, is it."

"It was easier to give me a doctorate than a BA?"

"Yes, it was."

I wanted to hit him again, but that wasn't the answer. I drove my fist into my palm, several times.

"Why?" I said. "Now I know how you did it, but the really important thing is why." I began to pace. "I've paid this university its tuitions, its fees, for some thirteen years now—a decent little sum when you stop to add things up—and I've never bounced a check here, or anything like that. I have always gotten along well with the faculty, the administration, the other students. Except for my climbing, I've never been in any really serious trouble, done anything to give the place a black eye—Pardon me. What I am trying to say is that I've been a pretty decent customer for what you are selling. Then what happens? I turn my back, I go out of town for a little while and you slip me a PhD. Do I deserve that kind of treatment after giving you my patronage all this time? I think it was a rotten thing to do and I want an explanation. Now, I want one. Now! Do you really hate me that much?"

"Feelings had nothing to do with it," he said, raising his hand slowly to prod the upper reaches of his cheek. "I told you I wanted to get you out of here because I did not approve of your attitude, your style. That still holds. But this was none of my doing. In fact, I opposed it. There were—well—pressures brought to bear on us."

"What kind of pressures?" I asked.

He turned away.

"I do not believe I am the one to be talking about it, really."

"You are," I said. "Really. Tell me about it."

"Well, the university gets a lot of money from the government, you know. Grants, research contracts—"

"I know. What of it?"

"Ordinarily, they keep their nose out of our business."

"Which is as it should be."

"Occasionally though, they have something to say. When they do, we generally listen."

"Are you trying to tell me I've been awarded my degree by government request?"

"In a word, yes."

"I don't believe you. They just don't do things like that."

He shrugged. Then he turned and looked at me again.

"There was a time when I would have said the same thing," he told me, "but I know better now."

"Why did they want it done?"

"I still have no idea."

"I find that difficult to believe."

"I was told that the reason for the request was of a confidential nature. I was also told that it was a matter of some urgency, and he waved the word 'security' at us. That was all that I was told."

I stopped pacing. I jammed my hands into my pockets. I took them out again. I found a cigarette and lit it. It tasted funny. But then, they

all did these days. Everything did.

"A man named Nadler," he said, "Theodore Nadler. He is with the State Department. He is the one who contacted us, and suggested—the arrangements."

"I see," I said. "Is that who you were trying to call when I removed the means of doing it?"

"Yes."

He glanced at his desk, crossed to it, picked up his pipe and his pouch.

"Yes," he repeated, loading the bowl. "He asked me to get in touch with him if I caught sight of you. Since you have seen to it that I can't do it right now, I would suggest that you call him yourself if you want further particulars."

He put the pipe between his teeth, leaned forward and scrawled a number on a pad. He tore the sheet off and handed it to me.

I took it, glanced at the screwed-up digits, stuck it into my pocket. Wexroth lit his pipe.

"And you really don't know what he wants of me?" I said.

He pushed his chair back into its proper position, then seated himself.

"I have no idea."

"Well," I said, "I feel better for having hit you, anyway. I'll see you in court."

I turned to go.

"I do not believe anyone has ever sought an order directing a university to rescind his degree," he said. "It should be interesting. In

the meantime, I cannot say that I am unhappy to see an end to your dronehood."

"Save the celebration," I said. "I haven't finished yet."

"You and the Flying Dutchman," he muttered, just before I slammed the door.

I had descended into an alleyway, up the block and around the corner from Merimee's place. Minutes later, I was in a taxi and headed uptown. I got out at a clothing store, went in and bought a coat. It was chilly and I had left my jacket behind. From there, I walked to the hall. I had plenty of time and I wanted to determine, if possible, whether I was being followed.

I spent almost an hour in that big room where they kept the Rhennius machine. I wondered whether my other visit there had made the morning news. No matter. I paid attention to the movements of the viewers, to the positions of the four guards—there had only been two before—to the distances to the several entrances, to everything. I could not tell whether a new grille was yet in place on the other side of one of the overhead windows. Not that it really mattered. I had no intention of trying the same trick a second time. I was after something fast and different.

Musing, I went out to locate a sandwich and a beer, the latter for the benefit of any telepaths in the

neighborhood. While I was about it, I kept checking and decided that I was not, at the moment, the subject of conspicuous scrutiny. I found a place, entered, ordered, settled down to eating and thought.

The idea hit me at the same time as a blast of cold air let in by a prospective diner. I rejected it immediately and continued with my beef and brew. But I could not come up with anything better.

So I resurrected it, cleaned it up and looked at it from every angle I could think of. Not much of an inspiration, but I was afraid it would have to do.

I figured the whole thing out, then realized that it might not work because of a side-effect of the process itself. I beat back a moment's frustration, then started in again at the beginning. It wobbled on the brink of the ridiculous, the little things I had to cover because of something so minor . . .

I journeyed to the bus station and purchased a ticket home. I put it in my coat pocket. I bought a magazine and some chewing gum, had them put in a bag, disposed of the magazine, chewed the gum, kept the bag. Then I went looking for a bank, found one, went in and changed all my money into one-dollar bills, which I stuffed into the bag—one hundred-fifteen, in all.

Making my way back to the neighborhood of the hall, I searched out a restaurant with a coat-checking operation, left my

coat and slipped back outside again. I used the wad of chewing gum to affix the coat receipt to the underside of a bench on which I sat for a while. Then I smoked a final cigarette and headed back for the hall, the bag of money in one hand, a single dollar bill palmed in the other.

Inside, I moved slowly, waiting for the crowd to achieve the proper density and distribution, rechecking my remembrance of air drafts on the opening and closing of the outer doors. I decided on the best position for the enterprise and worked my way toward it. By that time, I had torn the bag down one side and was holding it together.

Around five minutes later, the situation struck me as being about as close to ideal as it was likely to get. The crowd was effectively dense and the guards sufficiently distant. I listened to the by then standard, "But what does it *do*?" and "They're not really certain," with an occasional, "It's some kind of reversing thing. They're studying it," thrown in, until there was both a sharp draft and an appropriately large individual nearby.

I gave the guy an elbow in the ribs and a bit of a push. He, in turn, gave me a sample of Middle English—most people seem to think it is an Anglo-Saxonism, but I once looked it up in connection with a linguistics course—and he returned my shove.

I exaggerated my reaction, stag-

gering back and bumping into another man while seeing to it that the bag came apart with a grand flourish high above my head.

"My money!" I screamed, springing forward then and leaping the guard rail. "My money!"

I ignored the murmurs, the shouts and the sudden scrambling that occurred behind me. I had triggered the alarm also, but the fact was not especially material at the moment. I was onto the platform and racing about it toward the place where the belt entered the central unit. I hoped that it was able to bear my weight.

I countered a bellowed "Get down from there!" with a couple repetitions of "My money!" as I threw myself flat on the belt with what I hoped appeared a good dollar-chasing gesture, and I was borne surely and smoothly into the tunnel of the mobilator.

A tiny tingling sensation swept me from head to foot as I passed through the thing, and I experienced a momentary blurring of vision. This did not prevent my unfolding the dollar I had palmed, however, so that I emerged clenching it on high. I immediately rolled from the belt, and despite a wave of dizziness, jumped down from the platform and rushed back toward the crowd, trying to seem as if I still pursued my errant money, though none was then in sight.

"My money . . ." I said, as I

climbed back over the rail and dropped to all fours.

"Here's some," an honest soul remarked, thrusting a fistful of bills down before my face.

ENO by ENO a number of others were handed to me. Fortunately, the anticipation of this effect had been part of my earlier meditations, so that my reversed face showed no signs of surprise as I rose and thanked them. The only bill that looked normal to me was the one I had carried in my hand.

"Did you go through that thing?" a man asked.

"No. I went around behind it."

"Sure looked like you went through."

"No. I didn't."

As I accepted money and pretended to look for more, I did a rapid scan of the entire hall. The less honest folks with a few of my dollars in their pockets were heading out the doors, which were now in positions opposite those they had occupied when I had entered. But for this, too, had I prepared myself—at least intellectually. Now, though, I wondered. It was emotionally disconcerting, seeing the whole hall in reverse like that. And those departing were getting out without difficulty, for the guards were otherwise occupied: two were stuck in the crowd and two were collecting bills. I debated making a run for it.

At first, I had been all set to brazen it out with the guards or any-

one else involved, matching nastiness or officiousness with a greater obnoxiousness over my missing money and an insistence that I had gone around rather than through the device. I had decided that I could stick to that format and sit out any consequences. After all, I did not believe that I had done anything grossly illegal—and no matter what happened, they could not take back the reversal.

Instead, they were nice about it. One of them got the alarm shut off and another shouted at everyone to turn in any money they had recovered as they departed the hall. Then two of them moved to cover the doors again, and the one who had done the hollering sought me with his eyes, found me and raised his voice once more:

“Are you all right?”

“Yes,” I said, “I’m all right. But my money—”

“We’re getting it! We’re getting it!”

He plowed his way through to my side, laid his hand on my shoulder. I hastily pocketed the one bill that looked normal to me.

“Are you sure you’re okay?”

“Of course. But I’m missing—”

“We are trying to recover it,” he said. “Did you go through the center part of that machine?”

“No,” I said. “A bill blew past it though, and I chased it.”

“It looked like you went through the center unit.”

“He went around behind it,” said

one of the men I had told that to, as neatly timed as if he had been sitting on my knee with a monocle in one eye, bless him.

“Yes,” I said.

“Oh. You didn’t get any shocks or anything like that, did you?”

“No, but I got my dollar.”

“That’s good.” He sighed. “Glad we don’t have to fill out an accident report. What happened, anyway?”

“A guy bumped me and my bag tore. I had the morning’s receipts in it. My boss will take it out of my pay if—”

“Let’s go see how much has been collected.”

We did, and I got back ninety-seven dollars, almost enough to let me think a good thought about my fellow man and throw in a brass button for providence for having run a very tight ship so far that day. I left a phony name and address for them to contact, should any other bills turn up, thanked them several times, apologized for the disturbance and got out.

Traffic, I noticed immediately, was proceeding up and down the wrong sides of the street. OK, I could live with that. The signs in store windows were all backwards. OK. That, too.

I started out for the bench where I had stashed my coat receipt. I drew up short after a dozen paces.

It had to be the wrong direction, because it felt right.

I stood there then and tried to

visualize the whole city as reversed. It was more difficult than I had thought it would be. My roast beef and beer—now reversed—churned in my innards, and I wanted to grab hold of something and hang on. I fought everything back into place, or what seemed like place, and turned. Yes. Better. The trick was to navigate by landmarks and pretend I was shaving. Think of it all as in a mirror. I wondered whether a dentist would have an advantage at something like this, or if his ability only extended to the insides of mouths. No matter. I had figured out where the bench was.

I got to it, panicked when I could not locate the receipt, then remembered to go over to the opposite end. Yes. Right there . . .

I had, of course, planted the receipt so that it would not be reversed and cause me difficulty in getting my coat back. And I had checked the coat so that the ticket would not be reversed, causing me difficulty in boarding my bus.

I mapped out the route-image in my mind and found my way back to the restaurant. I was prepared for its situation on the opposite side of the street, but still fumbled the door by reaching to the wrong side for its handle.

The girl fetched me my coat promptly, but, "It ain't April Fools' Day," she said, as I turned to leave.

"Huh?"

She waved a bill at me. Lacking

change, I had decided to leave a dollar tip. I realized at that moment that I had pulled out my one normal-looking bill, the dollar I had carried through the mobilator.

"Oh," I said, and added a quick grin. "That was for the party. Here, I'll trade you."

I gave her a $\$10$ for it and she decided she could smile, too.

"It felt real," she said. "I couldn't tell what was wrong with it for a second."

"Yeah. Great gag."

I stopped to buy a pack of cigarettes, then headed off to relocate the bus station. In that I still had plenty of time before departure, I decided that a little more anti-telepath medicine might be in order. I entered an undistinguished-looking bar and got me a mug of beer.

It tasted strange. Not bad. Just very different. I backspelled the name on the tap and asked the bartender if that was what was really under it. He said that it was. I shrugged and sipped it. It was actually pretty good. Then the cigarette that I lit tasted peculiar. At first, I attributed this to the after-taste of the beer. A few moments later though, a half-formed thought caused me to call the bartender back again and have him pour me a shot of bourbon.

It had a rich, smoky taste, unlike anything I had ever had out of a bottle bearing that label. Or any other label, for that matter.

Then some recollections from

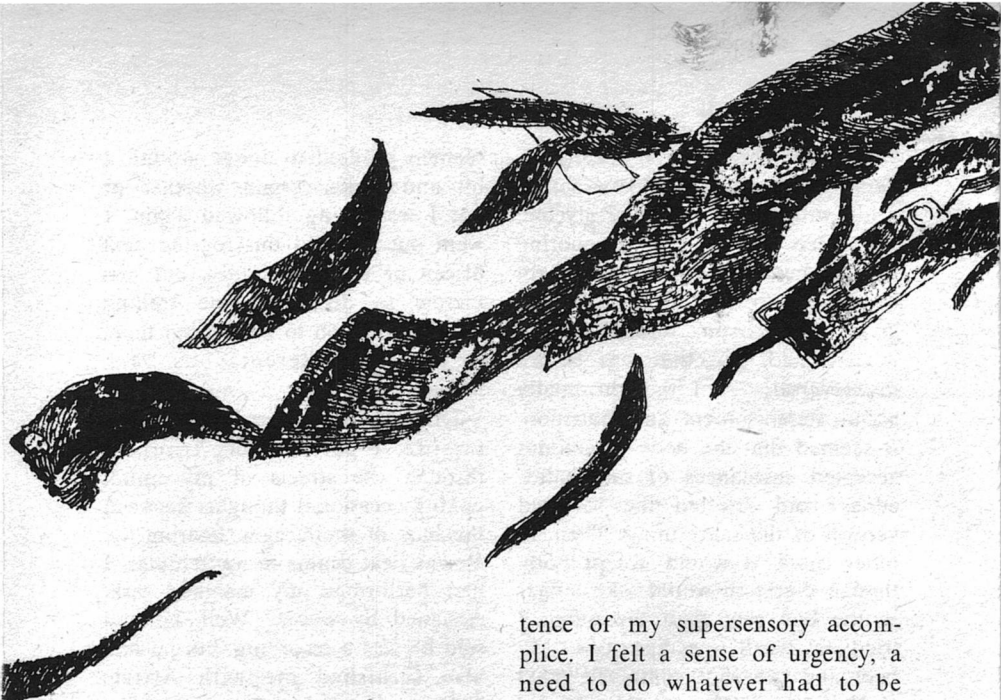
Organic Chem I and II were suddenly with me. All of my amino acids, with the exception of glycine, had been left-handed, accounting for the handedness of my protein helices. Ditto for the nucleotides, giving that twisting to the coils of nucleic acid. But that was before my reversal . . . I thought madly about stereoisomers and nutrition. It seemed that the body sometimes accepted substances of one handedness and rejected the reversed version of the same thing. Then, in other cases, it would accept both, though digestion would take longer in the one case than the other. I tried to recall specific cases. My beer and the shot contained ethyl alcohol, C_2H_5OH . . . OK. It was symmetrical, with the two hydrogen atoms coming off the central carbon atom that way. Reversed or unreversed then, I would get just as stoned on it. Then why did it taste different? The congeners, yes. They were asymmetrical esters and they tickled my taste buds in a different way. My olfactory apparatus had to be playing backward games with the cigarette smoke, also. I realized that I would have to look some things up in a hurry when I got home. Since I did not know how long I would be a *Spiegelmannsch*, I wanted to provide against malnutrition, if this were a real danger.

I finished the beer. I would have a long bus ride during which I could consider the phenomenon in more detail. In the meantime, it

seemed prudent to dodge around a bit and make certain whether or not I was being followed again. I went out and did this for the next fifteen or twenty minutes, but was unable to detect anyone trailing me. I moved on to the station then, to catch my stereoisobus back home.

Drifting drowsy across the countryside, I paraded my troubles through the streets of my mind, poking occasional thoughts between the bars of their cages, hearing the clowns beat drums in my temples. I had performed my assigned task. Assigned by whom? Well, he had said he was a recording, but he had also furnished me with Article 7224, section C, in a time of need—and anyone who helps me when I need help is automatically on the side of the angels until further notice. I wondered whether I was supposed to get drunk again for additional instructions or whether he had something else in mind for our next contact. There had to be one, of course. He had indicated that my cooperation on this venture would lead to all manner of clarification and untanglement. All right. I bought it. I was willing to take, on faith in that promise, the necessity for my reversal. Everyone else had wanted something I could not provide and offered nothing in return . . .

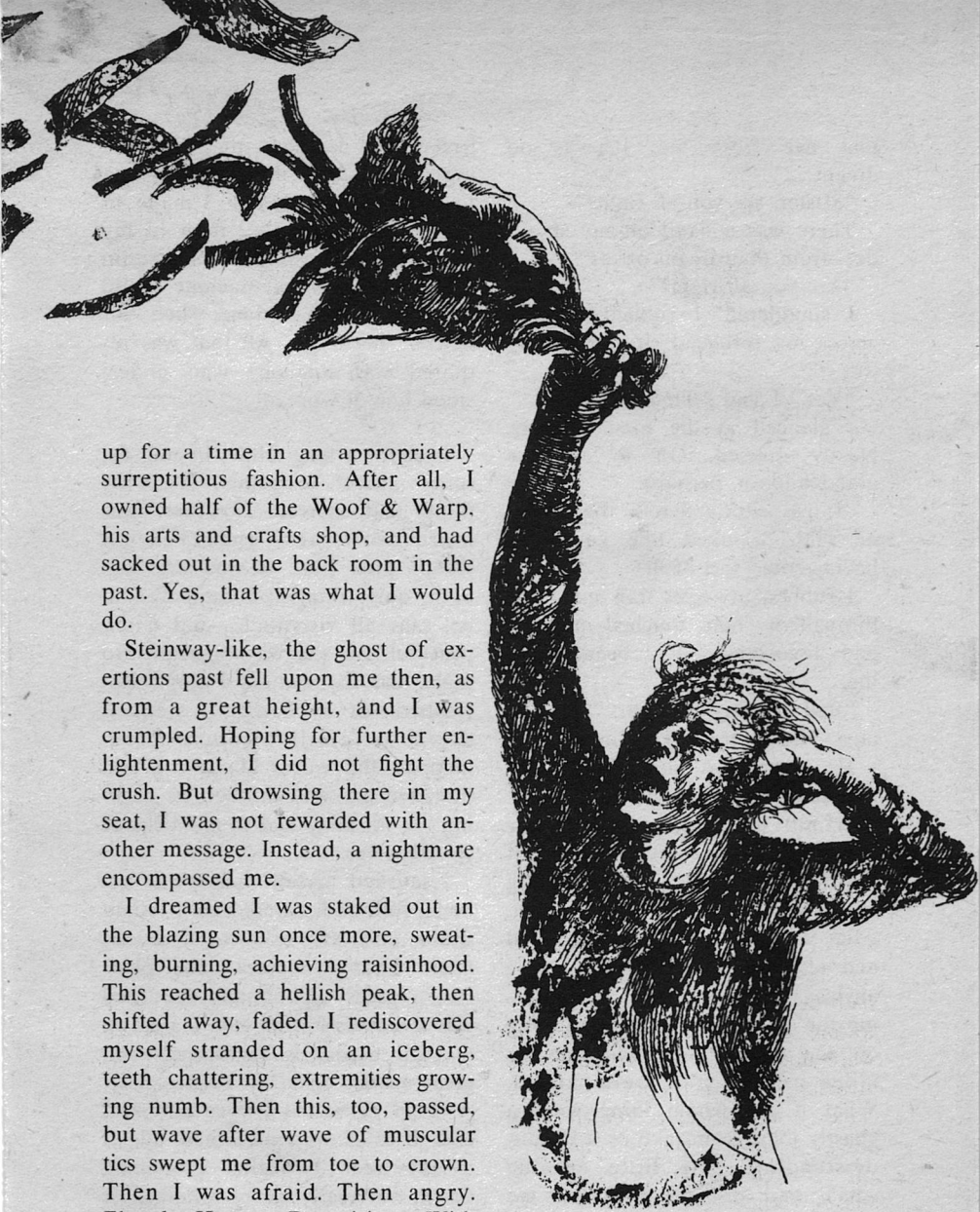
If I drifted off to sleep, would there be another message? Or was my alcohol level too low? And



what was the connection there, anyway? If Sibra was to be believed, alcohol acted as a dampener rather than an exciter of telepathic phenomena. Why had my correspondent come through most clearly on the two occasions when I had been intoxicated? It occurred to me at that moment that if it were not for the obvious effect of Article 7224, section C, I would have no way of really knowing that the communications were not simply drunken hallucinations, perhaps the best efforts to date of a highly imaginative death-wish. But it had to be more than that. Even Charv and Ragma now suspected the exist-

tence of my supersensory accomplice. I felt a sense of urgency, a need to do whatever had to be done quickly, before the aliens caught on to the pattern—whatever it might be. I was certain that they would disapprove, probably attempt to interfere . . .

How many of them were there, pursuing or watching me? Where were Zeemeister and Buckler? What were Charv and Ragma up to? Who was the man in the dark coat Merimee had spotted? What was the State Department representative doing? Since I had answers for none of these questions, I devoted some time to planning my own actions so as to allow for the worst of everything. I would not go back to my apartment, for obvious reasons. Hal's place seemed a bit risky, with all the activity he had described. I decided that Ralph Warp ought to be able to put me



up for a time in an appropriately surreptitious fashion. After all, I owned half of the Woof & Warp, his arts and crafts shop, and had sacked out in the back room in the past. Yes, that was what I would do.

Steinway-like, the ghost of exertions past fell upon me then, as from a great height, and I was crumpled. Hoping for further enlightenment, I did not fight the crush. But drowsing there in my seat, I was not rewarded with another message. Instead, a nightmare encompassed me.

I dreamed I was staked out in the blazing sun once more, sweating, burning, achieving raisinhood. This reached a hellish peak, then shifted away, faded. I rediscovered myself stranded on an iceberg, teeth chattering, extremities growing numb. Then this, too, passed, but wave after wave of muscular tics swept me from toe to crown. Then I was afraid. Then angry. Elated. Horny. Despairing. With naked feet stalking, the full parade of feelings passed, clad in forms

that flee from me. It was no dream . . .

"Mister, are you all right?"

There was a hand on my shoulder—from that dream or this?

"Are you all right?"

I shuddered. I rubbed a hand across my forehead. It came away wet.

"Yes," I said. "Thanks."

I glanced at the man. Elderly. Neatly dressed. Off to see the grandchildren, perhaps.

"I was sitting across the aisle," he said. "Looked like you were having some sort of fit."

I rubbed my eyes, ran my hand through my hair, touched my chin and discovered I had been drooling.

"Bad dream," I said. "I'm OK now. Thanks for waking me up."

He gave me a small smile, nodded and withdrew.

Damn! It just seemed to follow that it had to be some side-effect of the reversal. I lit a funny-tasting cigarette and glanced at my watch. After deciphering the reversed dial and allowing for its being wrong anyway, I decided I had been dozing for about half an hour. Staring out the window then, watching the miles pass, I grew quite afraid. What if the whole thing were a ghastly joke, a mistake or a misunderstanding? The little episode which had just occurred left me with the fear that I had screwed myself up inside at some level I had not yet considered, that subtle,

irreversible damages might be taking place within me. Kind of late to think of that, though. I made an effort to maintain my faith in my friend, the recording. I felt certain that the Rhennius machine could undo what it had done when this became necessary. All that was required was someone who understood how it worked . . .

I sat for a long while, hoping for some answer to come. The only thing that arrived, however, was more drowsiness and eventual sleep. This time it was the big, dark, quiet thing it is supposed to be, sans all vicissitudes and *angst*, peaceful. All the way through into night and my station, I slept. Refreshed for a change, I stepped down to familiar concrete, remapped the world about me and threaded my way through its parking lot, an alley and four blocks of closed stores.

I satisfied myself that I was not being followed, entered an all-night diner and ate a strange-tasting meal. Strange, because the place was a greasy spoon and the food was deliciously different. I ate two of their notorious hamburgers and great masses of soggy French fries. A sheaf of wilted lettuce and several slices of overripe tomato added to the treat. I wolfed everything down, not really caring whether or not it satisfied all my nutritional needs. It was the finest meal I had ever eaten. Except for the milk-

shake. It was undrinkable and I left it.

Then I walked. It was a good distance, but then I was in no hurry, I was rested and my posterior had had enough of public transportation for a time. It took the better part of an hour to reach the Woof & Warp, but it was a good night for walking.

The shop was closed, of course, but I could see a light in Ralph's apartment upstairs. I went around back, shinnied up the drainpipe and peered in the window. He sat reading a book, and I could hear the faint sounds of a string quartet—I couldn't tell whose—from within. Good. That he was alone, I mean. I hate to break in on people.

I rapped on the pane.

He looked up, stared a moment, rose and came over.

The window slid upward.

"Hi, Fred. Come on in."

"Thanks, Ralph. How've you been?"

"Fine," he said. "Business has been good, too."

"Great."

I climbed in, closed the window, crossed the room with him. I accepted a drink whose taste I did not recognize, though it looked like a fruit juice there in the pitcher on the table. We sat down, and I did not feel especially disoriented. He rearranges his rooms so often that I can never remember the layout from one time to the next, anyway. Ralph is a tall, wiry guy with lots

of dark hair and bad posture. He knows all manner of crafty things. Even teaches basket weaving at the university.

"How did you like Australia?"

"Oh, barring a few mishaps, I might have enjoyed it. I haven't decided yet."

"What sort of mishaps?"

"Later, later," I said. "Another time, maybe. Say, would it be too much trouble to put me up in the back room tonight?"

"Not unless you and Woof have had an argument."

"We have an arrangement," I said. "He sleeps with his nose under his tail and I get the blankets."

"The last time you stayed over it worked out the other way around."

"That's what led to the arrangement."

"We'll see what happens this time. Did you just get back in town?"

"Well, yes and no."

He clasped his hands about his knee and smiled.

"I admire your straightforward approach to things, Fred. Nothing evasive or misleading about you."

"I'm always being misunderstood," I said. "It is the burden of an honest man in a world of knaves. Yes, I just got back in town, but not from Australia. I did that a couple days ago, then went away and just now came back again. No, I did not just get back in town from Australia. See?"

He shook his head.

"You have a simple, almost classic life-style, too. —What sort of trouble are you in this time?irate husband? Mad bomber? Syndicate creditor?"

"Nothing like that," I said.

"Worse? Or better?"

"More complicated. What have you heard?"

"Nothing. But your adviser phoned me."

"When?"

"A little over a week ago. Then again this morning."

"What did he want?"

"He wanted to know where you were, wanted to know whether I had heard from you. I told him no, on both counts. He told me a man would be stopping by, to ask some questions. The university would appreciate my cooperation. That was the first time. The man showed up a little later, asked me the same questions, got the same answers."

"Was his name Nadler?"

"Yes. A federal man. State Department. At least, that is what his ID said. He gave me a number and told me to call it if I heard from you."

"Don't."

He winced.

"You didn't have to say it."

"Sorry."

I listened to the strings.

". . . I haven't heard from him since," he finished, a few moments later.

"What did Wexroth want this morning?"

"He had the same questions, updated, and a message."

"For me?"

He nodded. He took a sip of his drink.

"What is it?"

"If I heard from you I was to tell you that you have graduated. You can pick up your diploma at his office."

"What?"

I was on my feet, part of my drink slopping over onto my cuff.

"That's what he said: 'graduated'."

"They can't do that to me!"

He hunched his shoulders, let them fall again.

"Was he joking? Did he sound stoned? Did he say why? How?"

"No—on all of them," he said.

"He sounded sober and serious. He even repeated it."

"Damn!" I began to pace. "Who do they think they are? You can't just force a degree on a man."

"Some people want them."

"They don't have frozen uncles. Damn! I wonder what happened? I don't see any angle. I've never given them an opening for this. How the hell could they do it?"

"I don't know. You'll have to ask him."

"I will! Believe me, I will! I'm going down there first thing in the morning and punch him in the eye!"

"Will that solve anything?"

"No, but revenge fits in with a classic life-style."

I sat down again and drank my drink. The music went round and round.

Later, after reminding the merry-eyed Irish Setter who worked as night watchman on the first floor that we had an arrangement involving tails and blankets, I sacked out on the bed in the back room. A dream of wondrous symbolism and profundity came to me there.

Many years earlier, I had read an amusing little book called *Sphereland*, by a mathematician named Burger. It was a sequel to the old Abbott classic, *Flatland*, and in it there had been a bit of business involving the reversal of two-dimensional creatures by a being from higher space. Pedigreed dogs and mongrels were mirror-images of one another, symmetrical but not congruent. The pedigreed mutts were rarer, more expensive, and a little girl had wanted one, so badly . . . Her father arranged for her mongrel to be mated with a pedigreed dog, in hope that it would produce the more desirable pups. But alas, while there was a large litter they were all of them mongrels. Later, however, an obliging visitor from higher space turned them into pedigreed dogs by rotating them through the third dimension. The geometric moral, while well-taken, was not what had fascinated me about the incident, though. I kept trying to picture the mating that had taken place—two

symmetrical but incongruent dogs going at it in two dimensions. The only available procedure involved a kind of *canis observa* position, which I visualized and then imagined as rotating, whirligig-like, in two-dimensional space. I had employed the mandala thus achieved as a meditation aid in my yoga classes for some time afterwards. Now it returned to me in the halls of slumber, and I was surrounded and crowded by pairs of deadly serious dogs, curling and engendering, doing their thing silently, spinning, occasionally nipping one another about the neck. Then an icy wind swept down upon me and the dogs vanished and I was cold and alone and afraid.

I awoke to discover that Woof had stolen the blankets and was sleeping on them off in the corner, by the potting kiln. Snarling, I went over and recovered them. He tried to pretend it was all a misunderstanding, the son of a bitch, but I knew better and I told him so. When I glanced over later, all that I could see was his tail and a mournful expression among the dust and the potsherds.

VIII

They were waiting for me to say something, to do something. But there was nothing to say, nothing to do. We were going to die, and that was that. I glanced out the window and along the beach to the place where the sea stacked slate

on the shore and pulled it down again. I was reminded of my last day and night in Australia. Only then Ragma had come along and provided a way out. In fair puzzles there should always be a way out. But I saw no doorways in the sand, and try as I might I could not make the puzzle fall fair.

"Well, Fred? Do you have something for us? Or should we go ahead? It is up to you now."

I looked at Mary, tied there in the chair. I tried not to look at her frightened face, look into her eyes, but I did. At my side, I heard Hal's heavy breathing stop short, as though he were tensing to spring. But Jamie Buckler noted this also, and the gun twitched slightly in his hand. Hal did not spring.

"Mr. Zeemeister," I said, "if I had that stone, I would tie a bright ribbon around it and hand it to you. If I knew where it was, I would go get it for you or tell you where to find it. I do not want to see Mary dead, Hal dead, me dead. Ask me anything else and it's yours."

"Nothing else will do," he said, and he picked up the pliers.

We would be tortured and killed, if we just waited our turns. If we had had the answer and we gave it to them we would still be killed, though. Either way . . .

But we would not stand there and watch. We all knew that. We would try to rush them, and Mary and Hal and I would be the losers.

Wherever you are, whatever you are, I said in my shrillest thoughts, if you can do something, do it now!

Zeemeister had taken hold of Mary's wrist and forced her hand upward. As he reached for a finger with the pliers, the Ghost of Christmas Past or one of those guys drifted into the room behind him.

Stamping out of Jefferson Hall, cursing under my breath, I decided that a State Department official named Theodore Nadler was the next man I was going to punch in the eye. Making my way around the phountain and heading off toward the Student Union, however, I recalled that I had been remiss concerning my promise to call Hal in a day or so. I decided to phone him before I tried the Nadler number Wexroth had given me.

I picked up a coffee and donut before I made my way to the phone, realizing after thirteen years that all it took to make the Union's brew palatable was a reversal of every molecule in it, or in the drinker. I saw Ginny at a table off in the corner and my good intentions evaporated. I halted, started to turn in that direction. But then somebody moved and I saw that she was with a guy I didn't know. I decided to catch her another time, went on into the alcove. All the phones were in use, though, so I sipped my coffee and waited. Pace, pace. Sip, sip.

From behind my back I heard, "Hey, Cassidy! —Come on, it's the guy I was telling you about!"

Turning, I saw Rick Liddy, an English major with an answer for everything except what to do with his degree come June. With him was a taller version of himself in a Yale sweatshirt.

"Fred, this is my brother Paul. He's come slumming," he said.

"Hi, Paul."

I put my coffee on the ledge and started to extend the wrong hand. I caught myself, shook hands, felt foolish.

"He's the one," Rick said, "like the Wandering Jew or the Wild Huntsman. The man who will never graduate. Subject of countless ballads and limericks: Fred Cassidy—the Eternal Student."

"You left out the Flying Dutchman," I said, "and it's Dr. Cassidy, damn it!"

Rick began to laugh.

"Is it true about you being a night climber?" Paul said.

"Sometimes," I said, feeling a peculiar gulf opening between us. That damned sheepskin was already taking its toll. "Yeah, it's true."

"That's great," he said. "That's really great. I've always wanted to meet the real Fred Cassidy—the climber."

"I'm afraid you have," I said.

Then someone hung up and I grabbed for the phone.

"Excuse me."

"Yeah. See you later, Fred. Par-don me—Doc."

"Nice meeting you."

I felt strangely depressed as I wandered through the backward digits of Hal's number. As it was, the line proved busy. I tried the Nadler number then. An answering service girl asked me for the number where I could be reached, for a message or for both. I gave her neither. I tried Hal's number again. This time I got through—within a fraction of a second, it seemed, from the time it commenced ringing.

"Yes? Hello?"

"You couldn't have run all that far," I said. "How come you're out of breath?"

"Fred! At last, damn it!"

"Sorry I didn't call sooner. There were a lot of things—"

"I've got to see you!"

"That's what I had in mind, too."

"Where are you?"

"At the Student Union."

"Stay there. No! Wait just a minute . . ."

I waited. Ten or fifteen seconds fell or were pushed.

"I'm trying to think of someplace you'll remember . . ." he said. Then, "Listen. Don't say it if you do, but do you recall where we were about two months ago when you got in an argument with that med student named Kan? Thin guy, always very serious . . .?"

"No," I said.

"I don't remember the argument, but I remember the ending: You said that Dr. Richard Jordan Gatling had done more for the development of modern surgery than Halsted. He asked you what techniques Dr. Gatling had developed and you told him that Gatling had invented the machine gun. He told you that wasn't funny and walked away. You told me he was an ass who believed he was going to get the Holy Grail when he finished, rather than a license to help people. Do you remember where that was?"

"Now I do."

"Good. Go there please. And wait."

"All right. I understand."

He hung up, then I did. Weird. And troubling. An obvious attempt to circumvent an eavesdropper's discovering where we were going to meet. Who? Why? And how many?

I departed the Union quickly, since I had mentioned it in our conversation. Headed north from the campus, three blocks. Then two blocks over and partway up a side-street. It was a little book store I liked to visit about once a week, just to see what new titles had come in. Hal used to go along with me every now and then.

I browsed for perhaps half an hour, regarding the reversed titles in the backward shop. Occasionally, I paused to read a page or so of text, for the practice of doing it that way—just in case things stayed

topsy-turvy for any great length of time. The first sentence in one of the Dream Songs by John Berryman took on a peculiar, personal meaning: I stalk my mirror with this corridor my pieces litter . . .

And I began thinking of the pieces of myself, scattered all over, from dronehood to raisinhood and thereafter. Was it worth it to stalk the mirror? I wondered. I had never really tried. But then—

I was considering buying the book when I felt a hand on my shoulder.

"Fred, come on."

"Hi, Hal. I was wondering—"

"Hurry," he said. "Please. I'm double-parked."

"OK."

I restored the book to its rack and followed him out. I saw the car, went to it, got in. Hal climbed in his side and began driving. He did not say anything as he worked his way through the traffic, and since it was obvious that something was bothering him I decided to wait until he was ready to tell me about it. I lit a cigarette and stared out the window.

It took him several minutes to get us out of the sprawl and onto a more sedate stretch of road. It was only then that he spoke:

"In the note that you left you said that you had had a peculiar idea and were going to check it out. I take it that this involved the stone?"

"It involved the whole mess," I said, "so I guess the stone figures in, somehow. I am not at all sure how."

"Will you start at the beginning and tell me about it?"

"What about this urgent business of yours?"

"I want to hear everything that happened to you first. All right?"

"All right. Where are we going, anyway?"

"Just driving, for now. Please, tell me everything, from the time you left my place through today."

So I did. I talked and I talked and the buildings all ran away after a time and the grasses rushed up to the roadside, grew taller, were joined by shrubbery, tentative trees, an occasional cow, boulders and random jack rabbits. Hal listened, nodded, asked a question every now and then, kept driving.

"Then, say, right now, it looks to you as if I'm driving from the wrong side of the car?" he asked.

"Yes."

"Fascinating."

I saw then that we were nearing the ocean, moving through an area dotted by summer cottages, mostly deserted this time of year. I had gotten so involved in my story that I had not realized we had been driving for close to an hour.

"And you've got a bona fide doctorate now?"

"That's what I said."

"Very strange."

"Hal, you're stalling. What's the

matter? What is it that you don't want to tell me?"

"Look in the back seat," he said.

"OK. It's full of junk, as usual. You should really clean it out some—"

"The jacket in the corner. It's wrapped in my jacket."

I brought the jacket up front and unrolled it.

"The stone! Then you had it all along!"

"No, I didn't," he said.

"Then where did you find it? Where was it?"

Hal turned up a side road. A pair of gulls dipped past.

"Study it," he said. "Look at it carefully. That's it, isn't it?"

"Sure looks like it. But I never really scrutinized it before . . ."

"It has to be it," he said. "Believe that I just found it in the bottom of a trunk I hadn't unpacked till now. Stick to that."

"What do you mean, 'Stick to that'?"

"I got into Byler's lab last night and took it from the shelf. There were several. It's just as good as the one he gave us. You can't tell the difference, can you?"

"No, but I'm no expert. What's going on?"

"Mary has been kidnapped," he said.

I looked over at him. His face was expressionless, which was the way I knew it would be if something like that were true.

"When? How?"

"We'd had a misunderstanding and she had gone home to her mother's, that night you stopped over . . ."

"Yes, I remember."

"Well, I was going to call the next day and try to smooth things over. But the more I considered it the more I kept thinking how much nicer it would be if she called me first. I'd have some sort of little moral victory that way, I decided. So I waited. I came close to phoning a number of times, but I'd always put it off just a little longer—hoping she would call. She didn't though, and I had let it get fairly late. Too late, really. So I decided to give it another night. I did, and then I called her mother's place in the morning. Not only was she not there, but she hadn't been there at all. Her mother hadn't even heard from her. I figured, OK, she has good sense. She had had second thoughts, didn't want to turn the thing into a family issue. She had changed her mind and gone to stay with one of her girl friends. I started calling them. Nothing.

"Then, between calls," he went on, "someone called me. It was a man, and he asked if I knew where my wife was. My first thought was that there had been an accident of some sort. But he said that she was all right, that he would even let me talk to her in a minute. They were holding her. They had held her for a day to make me sweat. Now they were going to tell me what they

wanted in return for her release, unharmed."

"The stone, of course."

"Of course. And also of course, he did not believe me when I said I did not have it. He told me they would give me a day in which to get hold of it, and when they got in touch with me again they would tell me what to do with it. Then he let me talk to Mary. She said she was all right, but she sounded scared. I told him not to hurt her, and I promised to look for it. Then I started searching. I looked through everything that I have. No stone. Then I tried your place. I still have my key—"

"Anybody there toasting the Queen?"

"No signs of your visitors at all. Then I proceeded to look for the stone in every possible place. Finally, I gave up. It's just gone, that's all."

He grew silent. We twisted along the narrow road, occasional glimpses of the sea appearing through gaps in the foliage off to my left/his right.

"So?" I said. "What then?"

He called again the next day, asked if I had it. I told him I did not—and he said they were going to kill Mary. I pleaded with him, said I'd do anything—"

"Wait. You did not call the police?"

He shook his head.

"He told me not to—the first time that we talked. Any sort of

police involvement, he said, and I would never see her again. I thought about calling the cops, but I was scared. If I called the police and he found out—I just couldn't take the chance. What would you have done?"

"I don't know," I said. "But go ahead. What happened next?"

"He asked me if I knew where you were, said you could probably help find it—"

"Ha! Sorry. Go on."

"Again, I had to tell him I did not know, but that I was expecting to hear from you soon. He said they would give me another day, to find the stone or to find you. Then he hung up. Later, I thought about the stones in Paul's lab, got to wondering whether any of them were still there. If they were, why not try to pass one off as the real thing? They were obviously good fakes. The man who made them had even been fooled by one himself for a time. I was able to force the lock and get into his lab later in the day. I was desperate enough to try anything. There were four of them on the shelf, and I took the one you are holding now. I took it home with me and I waited. He phoned me again this morning—right before you called—and I told him I had come across it in the bottom of an old trunk. He sounded happy then. He even let me talk to Mary again and she said she was still OK. He told me where to take the stone, said they

would meet me and make the exchange—her for it."

"And that is where we are headed now?"

"Yes. I would not have involved you needlessly, but they seemed so convinced that you were something of an authority on the thing that when you called it occurred to me that if you were there to corroborate my story there would be no question as to the stone's authenticity. I didn't like involving you this way, but it is a matter of life and death."

"Yeah. They may kill us all."

"Why should they? They will have what they want. It would be pointless to harm us."

"We're witnesses," I said.

"To what? It would be our word against theirs that the incident even occurred. There is no record of it, no evidence of a kidnapping or anything else. Why jeopardize the status quo by killing people and starting a homicide investigation?"

"The whole thing stinks, that's why. We do not have sufficient facts to decide what may or may not be motivating them."

"What else was I to do? Call the police and take a chance they might not be bluffing?"

"I already said that I don't know. But at the risk of sounding ignoble, you might have left me out of this."

"Sorry," he said. "It was a quick judgment and maybe a wrong one. But I was not rushing you there

blind. I knew I owed you an explanation, and that is what I have been giving you. We are not there yet. There is still time to drop you off if you do not want to be party to it. I intended to offer you the choice when I finished explaining things. Now that I have, you can make up your own mind about it. I had to hurry, though."

He glanced at his watch.

"When are we supposed to meet them?" I asked.

"About half an hour."

"Where?"

"Around eight miles, I think. I'm going by landmarks they gave me. Then we park it and wait."

"I see. I don't suppose you recognized the voice, or anything like that?"

"No."

I looked down at the pseudo-stone, semi-opaque or semi-transparent, depending on one's philosophy and vision, very smooth, shot with milky streaks and red ones, it somewhat resembled a fossil sponge or a seven-limbed branch of coral, polished smooth as glass and tending to glitter about its tips and junctures. Tiny black and yellow flecks were randomly distributed throughout. It was about seven inches long and three across. It felt heavier than it looked.

"Nice piece of work, this," I said. "I can't tell it from the other. Yes, I'll go with you."

"Thanks."

We drove on, maybe eight miles.

I watched the scenery and wondered what was going to happen. Hal turned down an ill-tended car trail—I could not really call it a road—very near to the beach. He parked the car at the edge of a marshy area, in a place where the trees screened us on all sides. Then we got out, lit cigarettes and waited. I could hear the sea from where we stood, smell it, taste it. The soil was gritty, the air was clammy. I rested my foot on a log and stared into the stagnant wash, spindled and mutilated by reeds and reflection.

Several cigarettes later, Hal looked at his watch again.

"They're late," he said.

I shrugged.

"Probably watching right now to make sure we're alone," I said. "I would—for a long while. I would probably have a spotter back on the road, too."

"Sounds likely," he agreed. "I'm getting tired of standing. I'm going to sit in the car again."

I turned also, and we saw Jamie Buckler standing near the rear of the car, regarding us. He appeared to be unarmed, but then there was no necessity for him to flash a weapon. He knew we would do whatever he said without additional coercion.

"Are you the one who called?" Hal asked, advancing.

"Yes. Have you got it?"

"Is she all right?"

"She's fine. Have you got it?"

Hal halted and unwrapped the stone. He displayed it on his jacket.

"Here. See?"

"Yeah. OK. Come on. Bring it along."

"Where?"

"Not far. Do an about-face and head that way," he said, gesturing. "There's a little trail."

We moved off along the route he had indicated, Jamie bringing up the rear. Winding through scrub, it took us farther down toward the beach. Finally, I got a closeup view of the sea, gray today and white-capped. Then the trail took us away again, and before very long I thought I had spotted our destination—low, peaked, set back on a modest hillside, missing a shutter and a half—a beach cottage that had seen better seas before I was born.

"The cottage?" Hal said.

"The cottage," from behind us.

We went on up to it. Jamie circled about us, rapped in a doubtless prearranged fashion and said, "It's OK. It's me. He's got it. He brought Cassidy along, too."

An "OK" emerged from inside, and he opened the door and turned to us. He gestured with his head and we moved past him and on in.

I was not exactly taken by surprise to see Morton Zeemeister seated at the scarred kitchen table, a gun beside his coffee cup. Across the room beyond the kitchenette area, Mary was seated in what looked to be the most comfortable

chair in the place. She was tied loosely, but one hand was free and there was a cup of coffee on the table beside her, also. There were two windows in the dining area and two in the living room. In the rear wall there were two doors—a bedroom and a john or closet, I guessed. The overhead area had not been floored or ceiled, and there were only bare beams and lots of space, where someone had stashed fishing gear, nets, oars and assorted junk. There was an old sofa, a couple more rickety chairs and low tables and a pair of lamps in the living room. Also, a dead fireplace and a faded rug. The kitchenette held a small stove, refrigerator, cupboards and a black cat who sat licking her paws at the far end of the table from Zeemeister.

He smiled as we entered, raising the gun only when Hal began a dash toward Mary.

"Come back here," he said. "She is all right."

"Are you?" Hal asked her.

"Yes," she said. "They didn't hurt me."

Mary is a small, somewhat flighty girl, blonde and a trifle too sharp-featured for my tastes. I had feared she would be somewhat hysterical by then. But, outside of the expected signs of stress and fatigue, she seemed possessed of a stability that exceeded my expectations. Hal might have done better than I had thought. I was glad.

Hal returned from her side, moved toward the table. I glanced back when I heard the door shut, its latch clicking into place. Jamie leaned there, his back against the frame, watching us. He had opened his jacket, and I saw that there was a gun tucked in behind his belt.

"Let's have it," Zeemeister said.

Hal unwrapped it again and passed it to him.

Zeemeister pushed aside his gun and coffee cup. He placed the stone before him and stared at it. He turned it several times. The cat rose, stretched, jumped down from the table.

He leaned back in his chair then, still looking at the stone.

"You boys must have gone to a lot of trouble—" he began.

"As a matter of fact," Hal started, "we—"

Zeemeister slammed the table with the palm of his hand. The crockery danced.

"It's a fake!" he said.

"It's the same one we've always had," I offered, but Hal had turned bright red. He is a lousy poker player, too.

"I don't see how you can say that!" Hal shouted. "I've brought you the damned thing! It's real! Let her go now!"

Jamie moved away from the door, coming up beside Hal. At that moment, Zeemeister turned his head and raised his eyes. He shook his head slightly, just once, and Jamie halted.

"I am not a fool," he said, "to be taken in by a copy. I know what it is that I want and I am capable of recognizing it. This"—he made a flipping motion with his right hand—"is not it. You know that as well as I do. It was a good try, because it is a good copy. But you have played your last trick. Where is the real one?"

"If that is not it," Hal said, "then I do not know."

"What about you, Fred?"

"That is the one we have had all along," I said. "If it is a fake, then we never had the real one."

"All right."

He heaved himself to his feet.

"Get on over into the living room," he said, picking up his gun.

At this, Jamie drew his own and we moved to obey.

"I do not know how much you think you can get for it," Zeemeister said, "or how much you may have been offered. Or, for that matter, whether you have already sold it. Whatever the case, you are going to tell me where the stone is now and who else is involved. Above all, I want you to bear in mind that it is worth nothing to you if you are dead. Right now, it looks like that is what is going to happen."

"You are making a mistake," Hal said.

"No. You have made it, and now the innocent must suffer."

"What do you mean by that?" Hal asked.

"It should be obvious," he replied. Then, "Stand there," he directed, "and don't move. —Jamie, shoot them if they do."

We halted where he had indicated, across the room from Mary. He continued on, moving to stand at her right side. Jamie crossed over to her left and waited there, covering us.

"How about you, Fred?" Zeemeister asked. "Do you recall anything now that you didn't in Australia? Perhaps remember something you haven't even bothered mentioning to poor Hal—something that could save his wife from—"

He removed a pair of pliers from his pocket and placed them on the table beside her coffee cup. Hal turned and looked at me. They all waited for me to say something, do something. I glanced out the side window and wondered about doorways in the sand.

The apparition entered silently from the room behind them. It must have been Hal's face that gave them the first sign, because I know I kept mine under control. It did not really matter though, because it spoke even as Zeemeister's head was turning.

"No!" it said, and, "Freeze! Drop it, Jamie! One bloody move for your gun, Morton, and you'll look like a statue by that Henry Moore chap! Just stay still!"

It was Paul Byler in a dark coat, his face thinner and sporting a few

new creases. His hand was steady though, and it was a .45 that he was pointing. Zeemeister assumed an eloquent immobility. Jamie looked undecided, glanced at Zeemeister for some sign.

I almost sighed, feeling something tending in the direction of relief. In fair puzzles, there should always be a way out. This looked like it for this game, if only—

Catastrophe!

A mass of lines, nets, buoys and disassembled fishing poles made a scratching, sliding noise overhead, then descended on Paul. His head jerked upward, his arm swayed—and in that moment, Jamie decided against discarding his gun. He swung it toward Paul.

Reflexes I usually forget about when I am on the ground made a decision for which I take neither credit nor blame. Had the matter gotten beyond my spinal nerves though, I do not believe I would have jumped a man with a gun.

But then everything was going to turn out all right, wasn't it? It always does in the various mass-entertainment media . . .

I sprang toward Jamie, my arms outstretched.

His hand slowed in an instant's indecision, then swung the gun back toward me and fired it, point blank.

My chest exploded and the world went away.

So much for mass-entertainment.

TO BE CONCLUDED

I

The Senator rose to speak, right hand gripping the corner of the old roll-top desk, steel against walnut. The high ceiling lights cut sharp bright lines in the metal that was the right half of his face; he stood, not as a man, but as a memorial to himself.

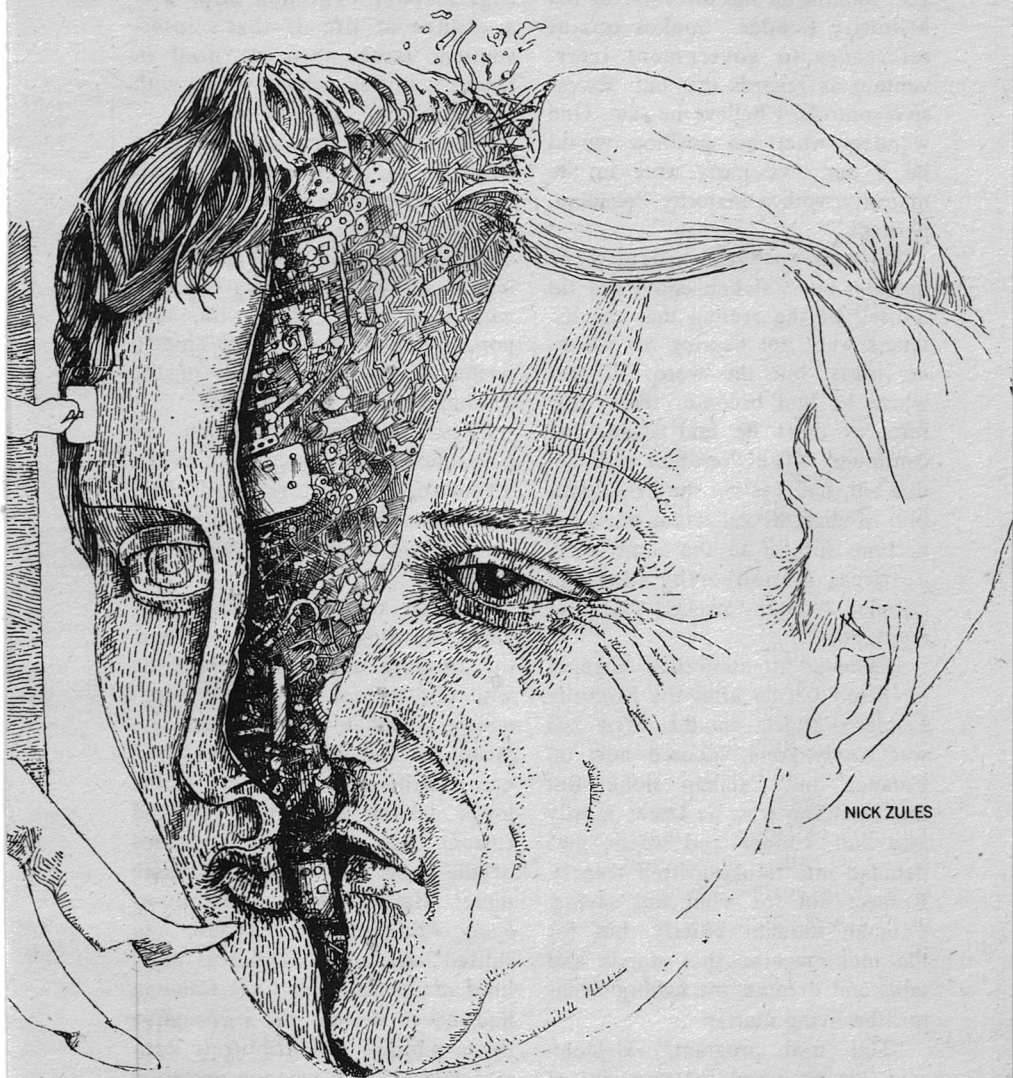
"The chair," said the president pro tempore, a world away behind his podium, "the chair recognizes the Senator from Michigan, Holden Calahan," and all eyes went to Calahan there in the center of the minority half of the Senate Chamber. The gallery above stared, visitors ready to hang onto his words as much as they did the sweaty brass railing.

"Senator Lerner," Calahan be-



ALL THE CHARMS OF
sycorax

Politics is the art
of getting free men to work together.
But toward what goals? And why?



NICK ZULES

Alan Brennert

gan, looking in the direction of the Minority Leader, "makes quaint references to government intervention as regards this bill. Excessive controls, I believe he said. One wonders what his position would be if our own party were in the majority, with a majority President, perhaps."

Things got very quiet very quickly, but Calahan could not rid himself of the feeling that the listeners were not hearing *his* words, *his* ideas, but the words of that which he had become. "Party differences must be laid aside," he continued. "The President endorses this bill, but it is not the President's bill. Medical Socialization must not become subject to the same petty political maneuvering that has crippled so many needed pieces of legislation . . ."

Whatever attention had lingered on Jacob Lerner after the Minority Leader's attack on the Med bill was surely gone, focused now on Calahan and Calahan alone. But that attention was, he knew, mostly awe and wonder—and worse, awe deluded into thinking itself respect. Respect not for what I'm saying, Calahan thought bitterly, but for the man-machine that stands and talks and dreams, the cyborg Senator, the living martyr.

"This trial program," Calahan said, "is proposed for one city of no more than five hundred thousand people—fully ten percent of whom are sick, or dying, or on the

edge of both. Providing them with a chance at life—if that's intervention, Jacob, then we need it. Damn it to hell, what's wrong with asking for it?"

There was scattered applause from the gallery, encouraging nods from the Senate itself; a gavel rapped for quiet; and several rows away, Lerner stood, old and looking as if he were strung together with straw and baling wire, supporting himself by *chutzpah* alone—beaten at the metal hands of the symbol Calahan had become.

"Yes," he said quietly, but all could hear him; "you're quite the advocate of modern medicine, aren't you, Senator?"

And then he sat down again, defeated.

Calahan, too, sat as several others in the chamber began to debate the wording of the bill, tinkering with phraseology by way of token action. Calahan didn't listen; instead he fell to looking at the names written in the bottom of the lower drawer of his desk. By old custom, each of the past occupants of the desk had etched his name there: Martin. Gore. Kem. Bone. Case. Allot. Clark. The desk had shifted back and forth across party lines many times—and yet Calahan had never written his own name there, perhaps not wishing to consign himself to a wooden posterity, wanting his name imprinted in something more lasting.

Well, he'd gotten that. Metal.

Cold hard steel. Idly he took a pen and wrote the first syllable of his surname beneath the most recent signature; that stood for the right half of his body, the metal half. Cal. Calahan. Caliban, more like it. Not honor'd with a human shape, indeed. He looked at Lerner, who caught his glance and turned away, and thought of Prospero: *And this demi-devil—for he's a bastard one—had plotted with them to take my life . . .*

By unanimous consent the Senate agreed to vote on the bill Monday. Calahan got up, feeling somewhat less than victorious. But feeling by no means defeated, either.

Reporters filled the corridor. Hand-held spotlights flashed and burned as holocams poked their way through the crowd. Calahan steeled himself for the confrontation, then laughed inwardly at the phrasing of his thought.

"What do you estimate chances are for passage of your bill, Senator?" The barrage began.

Calahan sighed. "I won't speculate, Mr. Lewis. The House is waiting to see what the Senate does and God only knows what the Senate will do. Monday or any other day," he added with a smile.

The reporters chuckled and continued the questioning. The lights glistened on Calahan's skin, the steelflesh, striking photoelectric cells that converted the light into energy, warmth, exhilaration. Ex-

hilaration more than the simple recharge of mechanisms—the headiness of the confrontation itself. He was riding a crest of battle and was a little taken aback by his own reaction.

"Were you aware," another reporter said, "that Senator Lerner has only a very few months left to live?"

"I don't believe the Senator has issued any statement to that effect."

"He doesn't need to. Isn't it rather incongruous that a man in his, ah, position, should be so opposed to your bill?"

"I wouldn't know," Calahan said. "Incongruities are more in your line, Mr. Belson. But if what you say is true, the Congress will lose a very valuable man."

The questioning was beginning to annoy him. Why were they all so friendly? This was a powder-puff inquisition, not at all what he was used to. Did the steel awe them, too?

Jason Linchs, Calahan's legislative assistant, poked his way through the corridor and came to the Senator's side. His full, round face was as red with the heat as his coarse beard, and his smile drooped like wax off a candle. "If you'll excuse us, gentlemen," he said, "it's late and I'll be damned if I'll drive in Washington traffic during rush hour." The crowd laughed sympathetically. Calahan, relieved at Jason's intervention, brushed his way past the reporters.

They came down onto the Capitol steps. Jason wiped his forehead and whistled. "You keep up those pat answers, Holden, and they're going to think we installed a tape-deck in there somewhere."

"Didn't you? *The Wit and Wonder of the Senate*, subtitled, *Bold-Faced Lies and Italicized Exaggerations*."

"You don't need lies. You'll screw yourself with the not-so-simple truth. My God, when you made that crack about being in the minority you could feel some raw, untouched nerve being stroked—not too gently. Lord knows how you got away with it, but you did."

Calahan looked at him uneasily as they climbed into Jason's car. "You know damn well how I got away with it—by being what I am. The issues were secondary. Jacob knows it. You know it. God help me, I know it." Jason started the car, and Calahan thought of Lerner sitting at his desk, exhausted, reaching for the pills that kept him active and reasonably alive. "Poor Jacob," Calahan said. "He's as much a product of medical science as I am; only he's dying, and I'm just starting to live again, and there's no sense to be made of either of us."

He fell silent and looked out the side window as they traveled through the Washington dusk. He saw the dark rectangles of park and the red brick buildings of the Smithsonian cloaked by thick dry

foliage. For a second he saw the right half of his body enshrined in glass in one of those buildings, while the flesh that had worn the metal went to ash in Arlington—and high school classes from Delaware passing the steel and pausing to think and wonder, and the *awe* damn it, still reaching out, needing no mind, no thought . . .

He turned and stared out at the approaching darkness. "I think I do have a tapedeck where my mouth should be, Jason. Continuous-loop rhetoric. If Lerner dies Congress loses one more old man set in his thinking and ready to slip America's neck into a noose of tradition and fear. Valuable man, my ass."

Jason did not reply.

II

Holden Calahan felt all of ten months old.

The moment of his birth was recorded and remembered—recorded by the holo nets, who were there, and remembered by Calahan alone, who wished he could forget. He had been at an airport those ten months ago, some small city on the first leg of his campaign to drum up support for the Med bill. Grass-roots time, the President had told him; no more holovision, nothing removed from the public. Talk to them, convince them this isn't communism and it isn't evil. (Hint of weariness in his voice: They won't listen to me, I've done too much that's challenged their old faiths;

they trust you, you have a future and all I have is a past; help me help them, Holden.)

So there he was, a minority Senator helping a majority President, and the party didn't like it much, and they could all go to hell for all Calahan cared. Unfortunately, this attitude was not guaranteed to win friends and influence people—least of all Lerner, as Minority Leader—and Calahan had begun to wonder if he indeed *had* any kind of a future in Washington.

He came off the plane feeling hot and tired; he was startled by the size of the crowd that clustered around the small jet. For the most part it seemed friendly, but Calahan could see a number of angry faces in it. He took a short breath and came down the steps of the carrier, Jason behind him.

"Senator—"

"—this way, please—"

The whir and grind of holos, hands flashing in the sun—

"Calahan!"

And then—he saw it quite clearly—a man, his voice high and angry, his face twisted with scorn; but Jason must have seen more, because he shouted "Holden!" at the top of his voice. Calahan turned around and looked at him puzzledly, and the next thing he knew Jason was screaming, "*Holden! Holden, are you all right?*"

Vague irritation: what the *hell*, Jason, of course I—

—my God, what am I doing on the ground?

He saw the steps upside-down above him, heard a mad chorus of voice and sound, felt the sharp bite of gravel into his hands—then all feeling was lost to darkness.

Dear God, I'm paralyzed.

The thought was simple and direct and sharp as ice. The world swayed above his opened eyes, eyes he couldn't shut, eyes he could barely move around in their sockets; he could see a wall, and a ceiling, and somewhere off to his right, Jason. And he couldn't move.

The coldness gripped him and would not let go. Paralyzed. He was appalled by his own calmness. He couldn't scream his terror at the realization, he could only lie there and let the horror hold him like a blade of grass held by the first touch of winter frost. Paralyzed. No. No. *Jason, help me.*

But Jason couldn't hear and Calahan could only listen; to Jason's shallow breathing, to the soft brush of wind against a window, to the—hum—that blanketed him as much as the thin sheets pulled taut across his legs.

Legs? *Leg.* He could feel, dimly, something cool and light on his left leg. The sheet? Of course. Of course. Take it easy, now. There's feeling there. Left leg. Thank God for that.

But the right one might as well never have been there at all.

Slowly—painfully—he forced his gaze downward, but only one eye (the left?) would move. The parallax made his vision blur and he could only keep it up for a few seconds—long enough to see the beast sitting fat and predatory on his chest.

And then his gaze snapped ceilingward again.

A beast, a machine-beast. A metal vise that held his chest in a steel grip. A life-support unit of some kind—did his paralysis extend to autonomic functions? He didn't know. He had some feeling in the left half of his body, none in the right. He could guess what had happened: the man in the crowd; assassination attempt; bullet in the brain; cripple. The word persisted. Cripple, half-man, invalid. Could he live like that? Speech inhibited, mobility gone, dependent upon—oh God, dependent upon Ronnie. Could he subject her to a life of servitude to what he would surely become?

Jason, he wanted to say, Jason, you've helped me before, help me now: pull the goddamned plug, Jason. Pull the goddamned plug.

But Jason did not hear.

Calahan struggled to speak; his lips quivered, beads of sweat accumulated there, and Jason, noticing this, took a kleenex and wiped them away—and then saw that those lips were trying desperately to form words.

“Holden?” Hope and terror

showed in his eyes; he looked a hell of a lot older than his thirty-four years. “Holden, are you—can you—”

Calahan found that his tongue was a strip of dead flesh in his mouth—and it was held in place by a stick to prevent him from swallowing. But the words he wanted required harsh, rough, easy sounds.

“K—k—ki . . .” Without the tongue he couldn't pronounce the *L*; but the ragged sigh of exhaustion he released completed the word.

“. . . ill—”

Jason stared at him, understanding but fearing—fearing not what the law might do to him, he wouldn't give a damn for that, but whether he would be doing the right thing. He always had to be certain of that, very certain, but once he had decided—

He nodded once and turned away. He reached for the wall out of Calahan's field of vision, the wall where the plug to the life-support unit must have been—and then abruptly drew back as two doctors entered the room.

Calahan's hopes sank and he gave himself up to the winter snows that fell on his future.

“Dr. Millet,” Jason said hoarsely. For a second he seemed to debate whether or not to tell the older, balding man about Calahan's consciousness, then apparently decided against it. “That machine—is it really—”

"Yes, it is." Millet spoke firmly but gently. "I'm sorry; I know what it must be like for you, seeing him like that. But he suffered something very much like a stroke and there was even some paralysis of the heart; we want to take as much pressure off his system as possible. He won't need the life-support unit after his body has regained its strength."

"What about—what about his speech?" Jason said, intuitively asking the questions Calahan would have asked had he been able.

"Apart from the partial paralysis of the lips, it should be unimpaired; the tongue is undamaged, he's merely still in shock." Millet caught the question on Jason's mind. "There *is* real damage to his brain, Mr. Linchs. The bullet struck the left side of the corpus striatum, shredding many of the motor nerve fibers there. The Senator is suffering from hemiplegia . . . the entire right half of his body has been paralyzed. Ordinarily that paralysis would be permanent and quite irreversible."

"Ordinarily?"

Millet introduced the other doctor, a heavy-set Mexican with dark, mourning eyes. "Mr. Linchs, this is Dr. Gaviota. He heads the R&D Bionics Program and is up from Bethesda by the President's request."

Oh *Lord!* thought Calahan. *No!*

"The President feels there is a chance for your friend," Gaviota

said. "As do I. I won't pretend it's not politically motivated, even if he will—he needs Senator Calahan, as well as liking him—but I don't think you can afford to pass up any assistance on those grounds. Can you?"

Jason hesitated only a moment. "No. What kind of a chance?"

Gaviota looked at Calahan. "The damage to the Senator cannot be undone, but it can be bypassed. It's been done before, on a limited scale, to others—I can't say who, of course, but the circumstances were similar—"

"What the hell is *it*?" Jason said.

Gaviota turned back to him. "We can replace the motor nerve fibers leading to the corpus striatum with platinum. The striatum itself is a bottleneck, however; there are too many connections to be made and our skills are insufficient to link up our metal fibers with the rest of the body. But we *can* bypass the striatum and hook up our fibers to an entirely artificial set of muscles and sensory receptors."

Calahan was beginning to feel buried in snow.

"That would also have to be metal," Gaviota continued. "A steel exo-skeleton to cover that half of his body paralyzed by the accident. We could install, surgically, certain rudimentary muscles to replace the natural ones. He would even have tactile senses—everything that his normal skin could feel, except possibly pain."

"Dead flesh within living metal," Jason said.

"Exactly. Only the metal would soon become his only flesh. Naturally, it would only be a few micrometers thick, so as to be seamless with the rest of his skin. It would also be light-sensitive; photoelectric cells would be able to convert any and all light into energy to power the skeleton."

"What would happen at night?"

"Nothing. The skeleton would store excess energy received during the day and wouldn't need recharging till well past dawn. And of course artificial light would be available if—"

"What," Jason said slowly, "if somehow the skeleton *did* run out of power?"

Gaviota hesitated. "The Senator would probably die." He said at length. "Normally, the homeostasis—the balancing mechanism in the body, the reaction against disruptive change by the production of an equal and opposite change—normally this homeostasis is between the body and its environment; with the Senator it will also be between the two halves of his body. Any—disruption—in one half will cause a stroke more severe than the one the bullet caused. It would very probably kill him. But the chances of such a disruption are very low; lower than our own chances of having a stroke."

Jason sighed and looked at Calahan. "I don't know. If the

odds on success are good—"

"They are."

"But *damn* it," he said irritably, "how the hell can we *know*? Taking his life into our hands—he may prefer death over that kind of life. How could we know?" He stared at Calahan, waiting for some sign, some *yes* or *no*, but Calahan couldn't force his lips to move, he was too weak.

"Mr. Linchs," Millet said gently. "We have to make a choice. Soon. You're his closest friend; the President told us to let you make the decision. But . . ."

His voice grew softer. "In the past, we've never *had* a choice. John Kennedy and Martin Luther King and Bobby Kennedy, all lying there, slipping away from us—losing them before seeing what they might have brought to us. Alternate tomorrows slipping through our fingers like sand. Holden Calahan was to many just such a hope, offering something yet undefined. Do you . . . do you choose to lose that stillborn future again, Mr. Linchs? Like the ones we lost before?"

Jason was quiet a long minute. Calahan, immobile, shocked, felt panic rise within him: *No!* he wanted to shout, damn it, *no*, don't make me your savior, your martyr returned from the dead! I don't mind the metal, I don't mind the steel, but don't make me live up to *your* dreams, just *mine*. Please!

But Jason looked at Calahan, and probably knew what he was

thinking, and could only shake his head as if to say, He's right, you know; we can't lose it again; I remember how I felt the days the others died and I mourned for a lost tomorrow; I'm sorry . . .

"Go on," he said, and Calahan thought he could feel the weight of the machine on his chest.

III

Calahan stared out the window at the dark, ill-lit street in front of his apartment building. It had been night by the time Jason had dropped him off, and all the long drive back here the absence of light had taken its toll; he had enough energy running warm beneath the cold metal to last well into the morning, but the exhilaration of the afternoon had passed and the sallow tungsten glare of the lamps was a poor substitute for the holospots and the hot rich sun. He moved away from the window and paced the living room, right foot given a lighter step, left foot a heavier one.

Ronnie was wrestling with a pair of TV dinners in the kitchen. "This is going to be one of the culinary highpoints of our marriage," she said from behind the louvered doors. "Which do you want, the approximate asparagi or the surrogate salmon?"

He stopped pacing and smiled. "What, no rubber chicken?"

"Please." She waved a hand. "If you must use obscenity, make it

dirty. If I have to eat at one more PTA luncheon I'll be ripe for a PR position with the Food & Drug Administration."

"Don't worry, it'll all be over by Monday night." As soon as he'd said that, he regretted it; it was closer to the truth than he wanted to admit. "I mean, a person can only stand so many blue-haired old ladies threatening a coalition of mah-jongg societies."

"Them we don't have to worry about. Keep an eye on the Canasta Cartel." She came out of the kitchen with two TV trays clutched in a potholder. "Give me a hand with one of these, will you? They're hot as hell."

He came over and took one of them in his right hand. The food steamed and the foil curled from the heat, but he didn't feel it as pain, only as heat; no cell damage, no pain signals to the brain. Ronnie stared at him, at the hand, then sat down at the dining-room table. He followed suit.

"So the vote is Monday?" she said awkwardly.

He nodded. "We'll win. Lerner can't drum up many votes over the weekend; he lacks the energy." The lights were harsh and bright, not soft as they had once been over yesterday's dinners. "I'm glad you could take some of these speeches off my hands, hon. I think they helped: you know, the robot politician is human after all, he even has a wife"—he grinned weakly—"and

two healthy and happy percolators. That sort of thing."

"Well," she said, eating, "I'm glad I could help and you'll receive my bill in the morning. Though I can't say I'm enthralled by the prospect of going to Detroit tomorrow for that damned party luncheon. God, I *hate* Detroit."

"You have good taste." He paused a moment, then got up. "What the hell, I'll go myself. I was only going to do some reading this weekend anyway. Not important. Let me go and call up the organizers."

"Lord love you, sir," Ronnie said. "My knight in shining . . ." She stopped.

He smiled. "Forget it." He walked into his den, a large windowless room in the middle of the apartment. Its walls were padded with shelves of books and tapes and thick magazines; Calahan threw off the complete darkness of the room with a flick of the light-switch, then closed the door and called up the Detroit party alliance.

When he finished he went back into the dining room to find Ronnie disposing of her tray. He dropped his own half-finished dinner into the wastepail. "Good riddance to bad broccoli."

"No, that's tomorrow's lunch."

"Lunch, hell, that's probably the hall they rented. The famous Broccoli Room of the Detroit Motor Lodge. Rubber chicken and dubious water."

She smiled—but it was a joking smile, not a happy smile, not the kind of smile they'd once shared in a private darkness. Calahan had seen a great variety of smiles in his career, and been forced to affect most of them in one cause or another, but in the past ten weeks there had been a proliferation of intimidated grins and those damnable joking smiles that Ronnie wore so often now.

And, very suddenly, he was sick of the banter and the humor, all that he had enjoyed before, because before it had been icing on something deeper, and now the icing was all that was left.

"Ronnie," he said. "Ronnie, don't go."

She stopped on her way to the bedroom, froze, then turned slowly around, and the joking smile was gone, but so was the other one, and all that remained was regret.

"Holden . . ."

"Ronnie, don't get me wrong; I'm grateful that you stayed on this long, helping me as you have; don't think that I'm not. But . . ." He came closer, and could see her stiffen almost imperceptibly. "God's sake, Ron, give it a chance."

"I did," she said. "I can't reach you, Holden. It's not the body: that's strange, that's frightening, but it's not the important thing. You're no longer a man because you chose to be a symbol. Or maybe you didn't choose—maybe it just happened. I can't love a symbol,

Holden, or I'll become one myself . . . The Senator's Wife, I've felt it at every bloody luncheon or meeting I've attended. This is the woman the Senator loves. This is the body the Senator humps. Steel and plastic, the pair of us. Good God, steel and plastic."

She turned to walk away and Calahan's hand went out and held her arm—his right hand.

She stared at it, at him, at her arm.

He let go. Ronnie disappeared quickly into the bedroom, Calahan alone under the glare of the harsh lamps. Damn. Damn. *When thou camest first, thou strokedest me, and madest much of me; wouldst give me water with berries in't; and teach me how to name the bigger light, and how the less, that burn by day and night: and then I loved thee . . .*

He wandered into the den, light on, searched for a tape or a book or anything to keep his thoughts numbed till dawn. He reached for a copy of Descartes' *Discourse on Method*, then drew back his hand, he didn't know why; at last he turned and left the room, left-foot-light, right-foot-heavy.

Calahan hated Detroit as much as Ronnie did; it was a dark smear on the flat green face of a lovely state, smoke rising in supplication to a god of diseased cities. He waited until the plane came to a halt and then, sighing, came out and down the steps of the carrier.

The crowd was large and friendly; Calahan recalled another crowd that had appeared friendly, but buried the thought and came down smiling. Of course.

Hands went out for handshakes. Beaming faces shouted greetings. Timid children shrank back, but did not retreat, fascinated by this tin woodman. Calahan could feel the strength of the noon sun on his skin—both skins—and felt better for the long trip out.

"Senator!"

"—doing a wonderful job—"

"—voted for you, you know—"

"—that bastard with the gun, hope they fry his—"

Calahan worked his way through the crowd until he came to Ralston Welmath, the party chairman for Michigan. "Ralston, what the hell are you doing here?"

"The organizers promised me that the lunch would not be wholly lethal," Welmath said. "I don't suppose you have to worry much, though. You still eat?"

Calahan laughed, a little nervously, as the two of them climbed into the back seat of Welmath's car. "Hell, yes. What gave you the impression I don't?"

"The general mood," Welmath said, nodding to the driver, "holds that not only don't you eat, sleep, or take physical nourishment, you can also leap the Washington Monument with a single bound and perform sundry marvels of legislation."

The car began to move. "Cut the crap, Ralston," Calahan said, but smiling.

"No crap, Holden. Oh, everyone knows you're just an ordinary man with metal skin, but there's an unspoken consensus among the public that you're more—durable—than the others on the Hill. More honest, even."

"The sterility of the machine," Calahan said. "I suppose I will live longer than I would otherwise, barring heart failure—"

"That can be fixed, too."

"Don't remind me. But hell, I'm no superman."

Welmath's tone was serious. "Don't say that kind of thing in *quite* that tone of voice, Senator. Better an inflection of humility thrown in so no one will believe you."

"You mean you want to capitalize on my reconstruction?"

"Don't you?"

Calahan rubbed tiredly at his left eye. "I don't know. I think I already am."

"Yes, the Medical Socialization nonsense." Calahan glanced at him sharply. "Oh, come on, Holden, don't be so damned sensitive. I may not agree with you—the party may not agree with you—but that only makes your success with it all the more remarkable. In the future, then, when you push issues that we *do* agree on—"

"What makes you so sure there'll be such issues?"

"There will," Welmath said. "We're not all in such complete awe of you that you can afford to thumb your nose at us."

Calahan turned slowly and studied him. "Aren't you?"

Welmath snorted emptily and turned away. Calahan almost wished he hadn't.

After the luncheon and the speeches and the question-and-answer session, all of which went so well that Calahan was no longer unsure of his footing no matter where he stepped, the Senator rented a car and began driving to Lansing, where he could catch a plane to Washington rather than go through the madness of snaking corridors and frenzied rushing that made up the Detroit airport. It was not quite dusk as he drove, the windows of the car were open, the fresh air blowing through. Fresh air: there was something more alien than the metal hand gripping the wheel. Such a very long time . . .

Michigan summers are cool for the most part, hot only when the breeze becomes paralyzed by the stillness of it all, the wind standing by and watching to see what will happen next. Usually, nothing does, and time resumes its normal flow. Calahan stopped the car beside a roadside diner some miles from Lansing, and got out. For a moment he stood there and felt like the wind, just pausing in its move-

ment to take stock of the world. Calahan took stock.

He had a year left on the Hill. The passage of the bill would be a major coup and he would have little trouble getting re-elected. And, with his body in the condition that it was, he could keep on being re-elected . . . for how long?

He could not see an ending. And maybe—just maybe—he could get some good done in that time. Some legislation passed that should have been passed years ago. Some simple rights recognized and respected. The awe might even turn to genuine respect someday. Someday.

For now, that day was not here, and he had to live with that even as he would have to live without Ronnie. He forgot about the diner and went back into the car, feeling the blunt red light of the setting sun bathe him, calm him, warm him.

IV

“Senator Joseph Kastner, New York?”

“Aye.”

“Senator Valerie Lassky, Oregon?”

“Aye.”

“Senator Jacob Lerner, Vermont?”

“Nay.”

Lerner’s hold on the chair was shaky, it had taken a visible effort to stand—he had wavered, taking a dry, rasping breath, and might even

have enjoyed the drama of the moment. It was likely to be the last taste of drama he would ever know; his condition had worsened over the weekend, and Calahan was willing to bet the old bastard had actually gone out and tried to drum up support for his position, without regard for the strain. And now Calahan was watching a man die in an effort to live, and he did not like it.

Lerner sat again, slowly, carefully, resignedly. The vote was half over and the outcome was never in doubt. The names rattled on, the ayes and the nays accumulated, building in Calahan’s mind into a hill taller than the one on which they stood . . .

“Senator Lawrence Wilkins?”

“Aye.”

Calahan won. It was really the President’s bill, but Calahan won. Supporters came over and shook hands vigorously; Calahan smiled and grinned and did what was expected. But the real satisfaction burned within him, the knowledge that the vote in the House would be similar, and then the bill was off to the President to be signed into law; law made with these hands, he thought to himself—or at least one of them.

The gavel rapped, the session was adjourned—and Jacob Lerner attempted to rise once more.

He couldn’t.

Calahan hesitated a moment, then went over to the old man’s

desk and offered him his right hand. Lerner looked up, his breathing labored, and shook his head. "Not that one," he rasped, and Calahan said nothing and extended his left hand. Lerner took it and pulled himself to his feet.

Calahan was at a loss. "Jake, I'm sorry. This must've been grueling for you."

"It wasn't for you?" Lerner said, studying him. "No, I guess not. Not much is grueling for you. You're one of the new breed; you don't have time to feel tired or worn. Maybe that's for the better, I don't know." He stepped past Calahan into the aisle. "I just wish that I . . . but I suppose there's not going to be enough time; no time at all." He looked at Calahan with envy and a kind of lost obsolescence, but also with a shade of—respect. Not awe. Something Calahan had not seen for some time, and which he might never see again. *All the charms of Sycorax, toads, beetles, bats, light on you! For I am all the subjects that you have . . .* The roles had been reversed.

Lerner took one step forward—and collapsed.

Calahan was at his side immediately, shouting for a doctor, feeling for a faint heartbeat with his right hand.

Jason came into the hospital room and stared for a moment at the oxygen tent in which Lerner lay, breathing shallowly, his chest a

hollow cavity of angled bone and coarse, thin flesh. Calahan stood beside the Minority Leader, his left hand clenched into a fist. Jason came up behind him.

"Holden, I spoke with his doctors. He's dying, you know."

Calahan did not turn. "I know."

"Nothing pathological, they say: just old age. Too many organs shot to hell. Too little strength and too little time." He was quiet a moment as Calahan did not respond. "I—heard about your success in Detroit," he said. "Everything but sacrifices to the sun god."

"That's very apt, Jason," Calahan said tonelessly. "Will you please shut up?"

Jason fell silent.

Calahan was about to turn to apologize when the door opened and Lerner's personal physician, someone named Peterson, came in—with Gaviota. Calahan had almost expected it, and apparently Jason was not surprised, either. The two doctors went immediately to the tent; Gaviota saw Calahan and came up to him.

"Senator Calahan. What are you doing here?"

"Watching a fellow Senator die, Doctor," Calahan said.

"Well, perhaps not. Perhaps—"

"You're too late," Jason said flatly; and Calahan thought he could hear him add, "Thank God for it."

Calahan looked at Lerner. The breath had gone from his chest. Pe-

person opened up the tent and leaned inside, checking for a pulse that wasn't, searching for a heart-beat already fled, seeking a warmth growing faint. "The young man is right," he said finally, stepping back. "I'm sorry, Dr. Gaviota."

Gaviota was silent. Jason shut his eyes with—relief? Dr. Peterson left without a further word, but Gaviota remained, standing tensely beside Calahan.

"Damn him," he said under his breath, then louder, "God damn him. He knew he couldn't take the strain. I told him, Peterson told him, but he went and stood on the floor and even went to vote, knowing he'd lose. Mother of God! All we needed were a few weeks—he'd agreed to that—a few *weeks*." He shook his head. "The fool," he said, "the damned fool," and he left the room, still muttering, still searching for tomorrows he might have plucked from a womb of metal.

Calahan saw one of those tomorrows. He saw Lerner, rebuilt, revitalized, going back to his home state, awing his constituency into voting him back to the Hill. He saw subsequent years of life during which Lerner would take his wisdom from a dead past, dead ideas, dead beliefs, his gift of life to the nation . . .

"Yes," Calahan said softly. "Yes, Jason, yes. Thank God for it."

Jason did not reply. Calahan turned and left the room, wanting

more than anything to be home.

Ronnie had left; her closets were empty, her drawers open; idly Calahan looked into the bottom drawer of her bureau, but found no names etched there.

He walked around the apartment a while, looking about as if some trace of her might be left, but all was as he had expected. Bare. Of course, Ronnie would not leave without saying good-bye, perhaps even a farewell tumble; she'd return tomorrow, something perfunctory cloaked in a witticism, but by then the line will have been drawn; her absence tonight was the demarcation separating past from future. He wasn't sure whether he wanted to go through all this again.

He went into his den, shut the door, and stood in total blackness a moment. Then he switched on the light. The brightness flooded the room, but he did not feel very much exhilarated. He felt as if he had died a very long time ago.

He sat behind the desk, feeling the comforting bulk of it there, the years of work and dreaming compacted into a solid mass of walnut; and then he reached for a copy of the Descartes book he had stopped himself from re-reading the other night. He leafed through it, skimming the familiar words, enjoying the leisure of it, expecting what he finally came across:

. . . *if there were such a machine*

which had such a resemblance to our bodies and imitated our actions as far as is morally possible, there would always be two absolutely certain methods of recognizing that it was still not truly a man. The first is that it could never use words or signs for the purpose of communicating with others, as we do . . .

Well, not strictly speaking, René. Crapped out on that one, but what the hell, we all have our off-days, right? Right. No offense meant. None taken, eh?

. . . The second method of recognition is that, although such machines could do many things as well as, or perhaps even better than, men, they would infallibly fail in certain others, by which we would discover that they did not act by understanding or reason, but only by the disposition of their organs.

Calahan shut the book. In the living room a door opened and closed. "Ronnie?"—not believing it for a second. He gripped the desk with both hands and stared up at the light that burned in the middle of the ceiling. To name the bigger—and how the less—

The door to the study opened, and Jason came in, pale, worn, silent. He shut the door and stood where he had entered, his hand held close to the lightswitch. Calahan took his gaze away from the light, saw his friend masked in a bouncing, retinal glare. Jason stared

at him, and it was the same stare Calahan had dimly seen when someone off in a dream had asked, Do you choose? Choose to lose, lose to death?

Calahan had to choose. He kept his voice flat. "There are no windows, Jason. Hardly any light from the air conditioning vents, either. And I'm tired; it shouldn't take long . . ." He studied Jason a moment. "How can you be sure I won't overpower you and leave before—before—" His voice broke.

Jason did not move. "Because you won't," he said, and his tone was all the apology Calahan might have needed. "Because it has to look natural, machines dying, metal rusting. Because you won't let the Hill turn to steel."

"And our minds to stone?" Oh God. *Thou didst prevent me; I had peopled else this—Hill—with Calibans . . .*

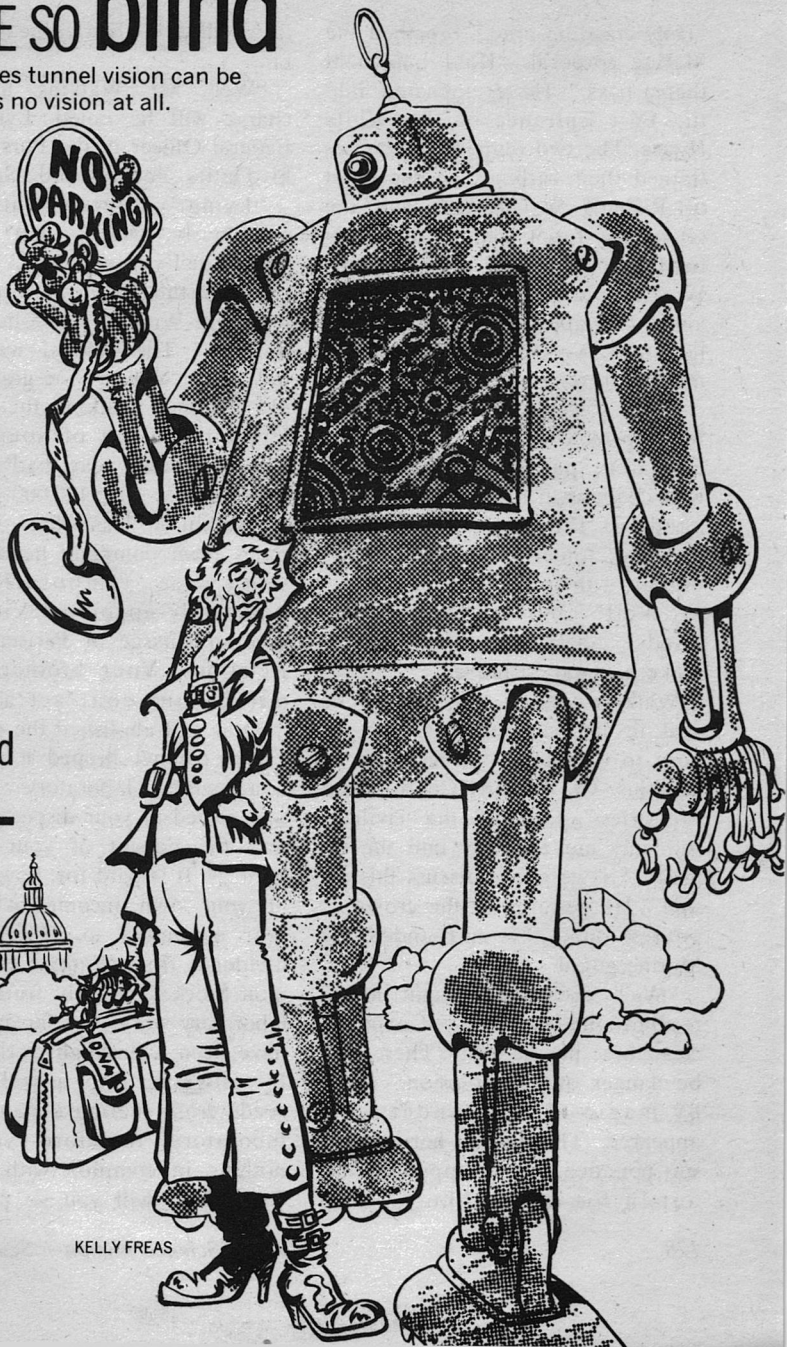
This time he *would* be a martyr, but no one would know of it. Perhaps that made him a true martyr. Calahan found it difficult to care.

Jason covered the lightswitch with a trembling hand. "I'll be here, Holden," he said.

"Thank you," Calahan said, and did not shut his eyes; he thought of a stillborn future and a lost tomorrow, suddenly bitter that he, who might have been, would have to die to right someone else's unbirthed wrong; wondered why but sought no answer—and all feeling was lost to darkness. ■

NONE SO **blind**

Sometimes tunnel vision can be as bad as no vision at all.



Hayford
Peirce

KELLY FREAS

"Holy crawling crud," breathed the Marine corporal. "Hold him right there, boys." He disappeared into the East Entrance of the White House. The two remaining Marines trained their carbines on the chest of Richard W. Watkins and the seven-foot robot that loomed motionless behind his slight frame. Watkins pursed his lips in annoyance, but appeared to accept the hierarchic workings of the military mind with resignation.

There was the sound of running footsteps, and an Air Force colonel appeared, panting heavily, with four civilians in his wake. The right hands of the Secret Servicemen hovered uncertainly before the breasts of their herringbone suits.

"Well?" barked the colonel. "And I advise you in advance to make no smallest move."

Watkins nodded. "My name," he said in the clipped tones of one born to command, "is Richard W. Watkins. Of Watkins Consolidated Industries." One of the civilians suddenly melted away into the interior. "If we might discuss this inside." He gestured at the crowd of gawkers that now surrounded the Marine guard.

"We'll discuss this right here," replied the colonel. "Corporal, clear these people away. There may be danger of an explosion." As if by magic the bystanders disappeared. The fourth herringbone suit pounded up, a computer print-out in his hand. The colonel

frowned at it, then turned to Watkins.

"Well, Mr. Watkins, a further charge will be noted. Lying to a Federal Officer in the Pursuance of his Duties. Federal Code Section—"

"Lying?" blurted Watkins incredulously. "About what? All I've done is tell you my *name*."

"With the implication that you represent Watkins Consolidated Industries." The colonel waved the print-out. "You are the grandson of old Clarence Watkins, the founder. Upon the death of your father, who for twenty years had paid you a remittance of \$100,000 annually to remain at least three thousand miles from company headquarters, you were temporarily and reluctantly appointed Vice-President in Charge of Parisian Public Relations. Your brothers terminated your contract after six months and abolished the post."

The colonel flipped a page. "A nonclassified laboratory in Utah was placed at your disposal, to further the pursuit of your . . . er, hobbies. It is paid for, however, out of your own income, which last year amounted to \$734,976.45 in dividends from Watkins Con Common Stock. The only fruit of your laboratory work thus far appears to have been a flashlight rechargeable by plugging into a wall outlet. Aside from sharing a name and a laboratory, therefore, you have nothing in common with Watkins Con. Now, will you go peacefully

to the station or not? Resisting lawful arrest is a—”

“A nut?” screamed Watkins. “Are you calling me a nut? I’m here to show the President the greatest breakthrough in technology since nuclear fission, an invention that will safeguard the United States for—”

“Take him away, boys,” said the colonel, frowning distastefully. The Secret Servicemen began to move forward. “Attempting to introduce a nuclear device into the White House,” muttered the colonel to himself in awe. “When they get through drawing up *this* indictment . . .”

“Now wait just a moment,” said Watkins in a calmer voice. “I realize that I may have made a slight error in my method of presentation, the result of a natural exuberance. If you feel it best that I go through the normal channels of protocol . . . A call perhaps to the Party’s National Chairman . . . My \$400,000 contribution may . . .”

The colonel held a brief conference with the Secret Service.

“Well, Mr. Watkins,” he said with forced joviality, “perhaps as you say, there may have been a little too much haste on both our parts. The President, I may say, is at the Bar Harbor White House for the next ten days. In a matter of some urgency, I suggest you might see your state’s senior senator, with whom I’m sure you’re acquainted. As Chairman of the Armed Forces

Committee this would fall naturally into his domain.”

The colonel smiled benignly. “And may I say, sir, that that’s a fine-looking robot.”

The robot glided sedately up the steps of the Capitol, one hydraulically-activated leg after the other recessing smoothly into the shiny black torso, while the Demi-Gravitational-Equalizer maintained the balance of the 1,800-pound artifice. The cubical head revolved ceaselessly as its two data-gathering sensors glowed cherry red. A loop antenna mounted on the top of its head occasionally discharged bursts of lightning. Cogs and gears could be seen through the transplex panel of its massive chest, churning inexorably. Colored panels on its back blinked on and off. At the end of one flexible, articulated arm an enormous hand of triple-jointed fingers and doubled thumbs delicately grasped the arm of Richard W. Watkins.

A crowd of incredulous on-lookers followed at a discreet distance as the robot rolled smoothly down the corridors, its legs now motionless. The ponderous feet, painted, like the auditory sensors and power-shovel hands, a whimsical fire-engine red, skirted a trash basket and pivoted smoothly to follow Watkins into the outer office of Senator Shroud.

The Senator himself appeared from an inner chamber, a glass of

bourbon in hand, at the sound of his secretary's shriek. "Well starch my breeches," he managed.

"I'm Watkins," said the little man shortly. "You may recall my contribution during your—"

"Hush, boy, hush. Now step right this way. Always a pleasure to see a valued constituent. Mary Ellen, kindly clear the office and fetch the gentleman another glass. And a shot of Three-In-One for your friend there?" he added slyly.

"Thank you, Senator, but that won't be necessary. All maintenance is self-programmed."

"Indeed, indeed," muttered Senator Shroud, cautiously circling the robot. He prodded the shoulder with a tentative finger. "Fearsome looking rascal, ain't he? Just what does he *do*, Mr. Watkins?"

"That, Senator, is for you to decide. If you had asked, What *can* he do, I would have replied, Anything."

"Anything? Well now, like the Jamestown flood, that covers a heap of ground, son."

Watkins nodded complacently. "True. I'll try to be more specific, Senator. You may recall, sir, I've always been one of the more vocal supporters"—the Senator winced reminiscently—"of your courageous efforts to maintain our great American Armed Forces as a power second to none. An increased Pentagon budget, additional arms production, more sophisticated hardware—"

"Let's take all that as read, Mr. Watkins."

"Very well. I had in mind, first, its utilization as the ultimate infantry man. Fearless, invulnerable to anything less than a direct hit by an anti-tank missile, low-cost maintenance, unblinking obedience, total rejection of leftist propaganda, extreme flexibility, ease of training—"

"Sounds good, Mr. Watkins, sounds good. But what about production?"

"Ah! Now there's the clincher. It can be programmed to build itself. A mighty production line of Watkins Industrial Robots, working night and day to turn out millions of Watkins Army Robots, all without wildcat strikes, spiraling labor costs, arrogant union leaders, ridiculous grievances about labor conditions. Why, I foresee that back home at Watkins Con alone we'll be able to lay off 40,000 good-for-nothing lazy socialists, every one a saboteur of the national defense effort. As soon as my brothers see the light, of course. After that . . . just in our one state alone there are seventy-eight other defense industries that—"

Senator Shroud's normally robust complexion was suddenly ashen.

"You are proposing, Mr. Watkins—" He breathed deeply, then began again. "You realize, of course, my dear sir, that our state's largest, nay, single, source of income is from defense industries,

and that what with those radical pacifists over in the House slashing the budget to the bone there are already 100,000 of our aerospace and shipyard workers out of jobs." He gestured to a pile of mail. "Mean letters, Mr. Watkins, intolerably mean letters. Sometimes I wonder about the future of the Republic, I surely do. Howsomever, as you may have heard, there is a small matter of my re-election coming up this fall, and I doubt, sir, I doubt very strongly indeed that this is the moment for a major retrenchment in the matter of industrial employment."

"But, Senator, the Nation's security—"

"Exactly, Mr. Watkins," said Senator Shroud briskly. "I knew you'd see my point. The National Security. As Chairman of the august Committee responsible for the Republic's well-being in these troubled times, what greater comfort to our Godless enemies-in-arms than the electoral defeat of—"

"But, Sena—"

"Mighty kind of you to come by, Mr. Watkins, mighty kind indeed, and to express my appreciation I'm going to sit me down right now and call up my colleague and kind friend Representative Dickinson over in the House Appropriations Committee and tell him to see you and your fine robot just as soon as he purely can . . ."

"Ah, Mr. Watkins," said Repre-

sentative Dickinson. "Senator Shroud just called. Come in, come in. This, I take it, is the Watkins Army Robot? Awesome."

Watkins beamed. "Exactly. And how much more awesome in full combat panoply. Perhaps with laser beams firing through the eyes . . ."

"A mighty weapon in the arsenal of democracy." He nodded. "As Chairman of Appropriations, which of course initiates all military spending, this is of keen interest to me, Mr. Watkins. Now, Senator Shroud mentioned that—"

"A purely military concept, Representative Dickinson," interjected Watkins hastily. "Of no civilian or industrial use whatsoever."

The Congressman blinked. "I see. Of course not. Now, as to—"

"You, Mr. Dickinson," said Watkins handsomely. "are the very man I should have come to initially. Representing, as you do, the Congressional District of Fort Mog Basic Training Camp, you know far better than I the wasteful and costly inefficiency of the present-day infantry. Consider, sir, those thousands of permanent officers and NCO's stationed in your district, solely for the purpose of molding hundreds of thousands of long-haired hippies—"

"Your robot, Mr. Watkins, would replace all this?" asked the Congressman sharply.

"Why, certainly. Factory-programmed soldiers would roll off the assembly lines in the millions. A

few top-sergeants to cut the basic programs and then—”

“And what of Fort Mog?”

“Why, it would be closed, of course. At an annual savings of millions of—”

Representative Dickinson rose to his feet. “I think, sir, that the consequences of your device may be so earth-shaking that it were best that the Pentagon itself should evaluate its potentialities. I’ll just make a call on your behalf . . .”

Brigadier General Bennett, Director of Public Relations, shook his head doubtfully. “It’s certainly an impressive . . . er, robot, Mr. Watkins, but as for making a soldier out of it, really, I’m . . .”

“But, General, I’ve explained what it can do. It’s a whole new concept in military theory. Invulnerable soldiers, able to do anything at all, obey any command—”

“Exactly, Mr. Watkins. As you yourself have just said, it’s an unspecialized soldier, not perhaps as clumsy as it might appear, but highly unprofessional. The New Army, sir, is an army of specialists, an army of experts, each man highly trained for his particular job.”

“But—”

“And, of course, part of the New Army is its New Image. We are a peaceful army, Mr. Watkins, a *defensive* army only. Our soldiers are obedient, but obedient within the limits of lawful command. They

are *thinking* soldiers. Your robot is impressive, yes. But *too* impressive, if I may say so. It hardly radiates the image of a highly trained, highly motivated, highly intelligent defender of the peace. Why, it’s almost *Prussian* in its militariness.”

“But I tell you—”

General Bennett glanced furtively about. He spoke in a low voice. “Furthermore, it’s *black*. Don’t you know the trouble we’re already having with charges that we’re training a professional army of all-black cannon-fodder. No,” he added decisively, “I’m really afraid that—”

“You tin-starred, jack-booted, hidebound jack-in-office,” squeaked Watkins, his face a fiery red, “it’s men like you who ridiculed all the visionaries of the past, who drove their inventions into foreign hands. Leonardo’s helicopter; that man in the Thirties with the tank the Russians made into the T-34; the snorkel; Admiral Rickover and the atomic submarine; Billy Mitchell and—”

“Hey,” said General Bennett, who had become an angry red in his turn, “that sounds mighty like treason to me, so don’t blame me if the FBI turns up to—”

But Watkins and the robot were already moving toward the door.

“And where did you get all that classified information anyhow? That’s a breach of—”

The Chairman of the Board of

United Motors turned a complacent eye to the window, where hundreds of acres of industrial activity could be seen humming beyond the soundproofed boardroom.

"Really, Richard, I'm delighted to see you again. I've followed your career with interest, of course, but it's been far too long since—"

"Kind of you, Charlie. Now look, about my invention—"

"I tell you, Richard, our experts have been studying it for three weeks now, and frankly they're amazed. They say it's a world beater."

"Then—" began Watkins eagerly.

The Chairman raised his hand. "Unfortunately, there are problems, primarily the problem that your robot is *too* good, *too* lifelike. It could easily replace any of the workmen on the production lines."

"But that's what—"

"Can you imagine what the unions would do if we laid off permanently 200,000 workers?" He shuddered. "Why, I'd be lucky if I weren't hanged from a lamp-post."

"But automation—"

The Chairman sighed. "That's what comes from reading all that 1930's science fiction as a kid."

Watkins blushed.

"People think of automation as robots replacing men. It isn't. Look, you have a widget going down a production line. At some point a worker puts in a screw. Next to him another worker tightens the screw. Sure, you can replace the

two workers. But not with a couple of generalized robots. You replace them with a feeder belt that pops screws in, and with a little do-hickey of an arm that's only good for tightening screws. The unions will put up with that, since no one really wants to spend eight hours a day tightening the same damn screw, and the two men will probably be needed to repair the machines that replaced them. But to replace them with a couple of self-repairing *robots* . . ."

"Wow! Would you look at that baby! Fantastagorical!"

The Chairman of the Board of Megalomania Films was beside himself. The workings of the gears and the blinking of the lights led him to transports of rapture. At a discharge of electricity he bowed his head in a moment of silent awe.

"I tell you, baby, this is the greatest thing that ever hit Hollywood. Why, it'll revolutionize the sci-fi field, give it a whole new lease on life. A robot that works," he breathed, "a real live robot just the way a robot *should* look. Jesus. What a property. What a beautiful, beautiful property. I'm speechless with words, Mr. Watkins, just speechless with words."

Watkins beamed. "You think it will be a success then?"

Mr. Megalo stared as if Watkins were bereft of his senses. "A success? The kid asks if it'll be a suc-

cess? A success, he says? Will it—”

“You’ll use it, then?”

“Me? Who? *Me*? Use it? For what?”

It was Watkins’ turn to stare. “Why, for movies, of course.”

Mr. Megalo’s eyes popped. “Movies! So who makes movies? Where’d you get that kookie idea? Megalomania Films don’t make movies. We’re selling off the back lot for a real estate development and going into food processing. Jesus. The man says movies.”

Nevertheless, he cast another look of admiration at the robot. “But what a property. Look, because I’m an all-right guy, see, I’ll call a pal of mine, I heard his studio made a movie last year or maybe it was the year before.”

The Production Head of Galactic Artists stared somberly at the robot. “Nope, I’m afraid you’re a little late with this baby. Five or six years ago, yeah, boffo box all the way. But now? Not a chance, baby, not a chance. All those Moon landings. The public don’t want space-ships and death rays, they seen ’em all on TV. Robots. Take it from me, they’re a glut on the market.”

“But Mr. Megalo said—”

“So why do you think Megalomania’s going into the canned-tomato business already? *Too many robots*. Nope, I’ll tell you again, the only movies that make money today, you gotta have the Mafia or a skin flick or maybe both. Look.

Lemme call a guy . . .”

Mr. Phillips of Family Films, Inc. sat in his office behind an adult movie house on Melrose Avenue, rubbing the stubble on his chin as he sized up the robot. “Well, I’ll tell you,” he said at last. “It’s a kinky idea, and that’s what this business needs, the kinkier the better. But I got reservations, Mr. Watkins, very serious artistical reservations.”

Watkins appeared absorbed by a study of the autographed pictures that hung on the walls. “Ah?” he said.

“Like sure, it’s a great one-shot gimmick. This great big black mothering robot and maybe three, four little blonde girls, all sorts of stuff you can do with that. But where’s the repeat biz? Where’s the human interest? Where’s the redeeming social value? And what about Kinsey, what’s the incidence of robot-human contact in the general population? So who goes for robots, anyhow? The gays, the bi’s, the straights, the S-M’s, the—”

His head suddenly shot forward as if galvanized. He pointed. “What kind of a deal *is* this, anyhow?” he shouted angrily. “Look! How can you tell if it’s a girl robot or a boy robot? It ain’t got nothing at all!”

Don Ricardo politely poured Richard Watkins a second tiny cup of espresso. “So. You are propose I use your robot for the button men, the *soldati, si*? I thank you for your

thinking of me, Signor Watkins, but I tell you that she is not possible."

Watkins inclined his head in comprehension.

The old Capo went on. "At first I am thinking she is possible, a *bellissima* idea maybe. But then I am talking with my *consiglieri*; and I am changing of mind." He held up a bony hand and ticked the items off on his fingers. "*Primo*. The roboto, she is not Siciliano. *Secundo*, she is black, and blacks are not of this organization, it is bringing me disrespect if I am using blacks. And *tertio*. How am I disciplining this *roboto* if she is deciding is not wanting be *soldati* no more but Capo maybe. Eh, you are answering me that, no? No." He shook his head wistfully. "But what enforcer she is making for the shylocks . . ."

The black man who controlled the Harlem numbers was anonymous behind his sunglasses and goatee. He offered Watkins a reefer as he listened, but eventually shook his head in dismissal. "Sounds good, man, but it's like overkill, if you see the point. It don't rap with the brothers. It's black, but it ain't got soul. We run the spaghetti gangsters off our turf 'cause they ain't got soul, we can't bring in machines to rip off the brothers. No way, man . . ."

"Wow! Would you look at that baby! Fantastic!"

The coach of the last-place New York Football Giants stared in wonderment as the robot made a deft over-the-shoulder catch of the kickoff deep in the end zone, then wheeled smoothly with the ball tucked under one arm and glided through the eleven attacking defense-men, scattering them like tenpins on his nine-second advance to the opposite end zone. The robot then turned to casually lob the ball a hundred and twelve yards, a perfect strike between the goal posts where he had begun his kickoff return.

The coach turned to look at Watkins with something of the awe of a pilgrim beholding Mecca. "Twenty-two of those things," he whispered. "You can furnish me twenty-two? It's no gag? Eleven for defense, eleven for offense?"

Watkins disengaged the lapel of his suit and smiled urbanely. "Why bother with twenty-two? Eleven will surely do, they can easily be programmed for both defense and offense."

The old coach's eyes began to mist.

"If you'll simply arrange with the front office regarding—"

A man detached himself from the group of bemused on-lookers.

"Now look, Coach," he said, "if you're thinking what I think you're thinking, you can stop thinking it right now. Good thing the Commissioner's Office heard there was something like this brewing. He

sent me down to take a—”

The coach picked the man up by the shoulders and shook him like a rag doll. “It ain’t illegal,” he cried. “there ain’t nothing in the rule book what says—”

“—was—last—night’s—rulebook—
you—jerk—today’s—rulebook—”

The coach dropped the Commissioner’s representative and began to weep.

The editor of *Preposterous Science Fiction* glanced up in annoyance as the man and the robot entered his office, then lowered his eyes. He was deep in the midst of the slush pile, desperately searching for a six-page filler to meet the January deadline. “How’d you get by my secretary?” he growled. “If you’re selling, I’m not buying. If you’ve got a manuscript leave it on the desk and I’ll let you know. If the sun’s going nova, tell my secretary and she’ll tell me later.”

“Mr. Alkine,” began Watkins in a quavering voice.

“What? Are you guys still here? Now look, I’m a busy man. Last week I bought two MT’s, one FTL drive, one inertialess drive, one perpetual motion machine, and a controlled fusion reactor. Robots I don’t need, especially Buck-Rogers 1930-type robots. I could have a sale on them.”

“—my last hope—”

“—meet my deadline and every crank in the world ends up in my office. OK, boys, look, a gag’s a

gag, it’s a great costume, but it won’t play in Peoria, now let me get back to work, huh?”

“—a genuine robot—”

The editor punched the intercom. “Agnes? On their way out, which is now, would you give these gentlemen a copy of the September ’72 issue, the one with the fact article on the state of robotic development. If they hang around, call the cops.”

Marshalissimo and Supremely-Beloved President of the People Enrico Gonzales-Gonzales de Silva y Ora of the Republic of Pacifica sucked in his breath with a sharp hiss and clapped his hands in startled admiration as he beheld the robot gliding into his vast office. Cogs turned, lights flashed, electricity discharged. It was just as he knew, in his heart of hearts, a robot should be. It was somehow profoundly comforting that life should once again so satisfactorily imitate art.

He ignored the two guards standing behind his desk, submachine guns at the ready, his buxom nude mistress who sat on one end of the enormous desk, teasing a monkey tethered to a golden chain, and his Director of Secret Police, Colonel Sebastiano, who stood before him, gripping the arm of the haggard Nordeamericano Watkins. He walked directly to the now-motionless robot and circled it inquisitively, like a dog seeking the

most comfortable spot on a sofa. He caressed the robot's arm, then turned to the Secret Policeman.

"It is this that you have spent three weeks attempting to keep from my presence?" he inquired in a gentle voice.

Sweat immediately popped out on the forehead of Colonel Sebastiano. "Marshalissimo," he stammered, "it is well known that robots do not exist. That a Nordeamericano, even a rich one, should represent that—"

"Does not exist, eh?" mused the Marshalissimo. "Señor Watkins. Tell me. Does your robot in fact not exist?"

Watkins jumped nervously. His left eye seemed possessed of a tic. Never a large man, he had thinned visibly since his visit to the White House three months before.

"Oh no, sir. It does indeed exist. As . . . as you can see, here it is." He giggled inanely.

"So it is, so it is. Tell me, by what method does one transmit commands?"

"By voice, Excellency. This present model is coded to respond to my voice alone. But that is a minor adjustment."

"Hmmm. Let us test this robot that does not exist. You will give the commands please."

"Very well."

"Take Colonel Sebastiano by the right arm."

Watkins repeated the order, a nervous grin playing across his

face. The robot instantly grasped the Secret Policeman around the bicep. Sebastiano became white and shaky.

"Pull off his arm."

"Pull . . . off his *arm*?"

The robot pulled off Colonel Sebastiano's arm.

"Beat him to death with it."

The robot complied.

The Marshalissimo settled back in his chair, tactfully ignoring Watkins, who was being sick in a corner. For a long moment he absent-mindedly caressed his mistress' thigh, then became businesslike.

"A most compelling demonstration, Mr. Watkins, a crushing rebuttal of the Doubts of the late Colonel Sebastiano. Tell me, what did this machine cost?"

"This particular one? Perhaps a million dollars."

"A million US dollars!"

"But it is a prototype only, please bear that in mind. This is the entire cost of development. An initial ten thousand could be built at a cost of perhaps ten thousand each, or a hundred million dollars. The mountains of your country are rich in minerals, there is a small but sufficient steel and metallurgical industry. There are American electronic companies already here taking advantage of the cheap labor. By nationalizing these industries, Pacifica would be self-sufficient in the production of the"—Watkins smiled cunningly—"of the Silva y Ora Industrial Robot. These

ten thousand Industrial Robots would then furnish all necessary labor, from the mining of ores to the final programming, for the one million *Silva y Ora* Military Robots which, at a cost of a few hundred dollars apiece, are so necessary for the defense of our beloved *Pacifica* from her rapacious enemies."

Marshalissimo *Silva y Ora* stared into space. At last he smiled. "Mr. Watkins. No. Generalissimo Watkins. Let us go to lunch. We have much to discuss."

The Director of the CIA frowned at the report lying before him. "Cuba, the Dominican Republic, Haiti, Chile, now *Pacifica*. What in God's name is going on in *Pacifica*, Fleming?"

"Who knows, sir? A complete iron curtain has come down around it for the last six months. No information at all is coming out. Satellite reconnaissance shows increased industrial production, but of what we can't tell. A fleet of clapped-out freighters has been purchased from all over the world, but they're just rusting away in the harbors."

"Reds, Fleming?"

"No evidence of them at all, sir. The old Marshalissimo, may God rot his underwear, seems in firm control. Rumors of mass liquidations of entire towns and villages, but completely unconfirmed. Why should even old *Silversides* want to kill off his entire population? Takes the fun out of dictating if there's

no one around to dictate to, eh?"

"True, true. Well, let me know if anything odd turns up."

"A masterstroke of mine, if I may say so, my dear Generalissimo. How best to rid one's country of the age-old problem of poverty. Why, by striking at the root of the problem, by eliminating the poor. For each robot produced, four peasants or laborers liquidated. Before long *Pacifica* shall boast of the highest standard of living in the world."

"Only a man of your genius could have conceived it, Marshalissimo."

"And the robots. What ideal subjects. Tranquil, industrious, subservient, loyal. I tell you, it is a pleasure to rule them. My only regret is that the rest of the world is so arbitrarily denied the benefits of a civilization based on the *Silva y Ora* Industrial Worker."

"Ah," said Watkins. "If I may make so bold, Excellency, I have had a few thoughts along those lines. . . ."

"Communists?" said the President incredulously. "In *Pacifica*?"

The Director of the CIA nodded. "News blackout early this morning, then Radio *Pacifica* announced that *Silva y Ora* had been overthrown, that the People's Republic of China was standing by to render necessary aid, that the American Imperialists and Russian Dogs had best beware."

"Dear God," said the President. "The Dominican Republic all over again. What will it take to straighten this one out, a couple of battalions of Marines?"

"I would suggest at least a division, Mr. President. Pacifica is a fair-sized country."

"Oh, very well. Get them going at once, and tell the UN ambassador to get out his Defense of the Free World speeches."

"—this outrageous and unprovoked act of war. As Marshalissimo and Supremely-Beloved President of the People of the Republic of Pacifica, I, Enrico Gonzales-Gonzales de Silva y Ora, find it my painful duty to declare that a state of war now exists between the Republic of Pacifica and the United States of America. Our valiant forces have already liquidated the arrogant invaders of the motherland, and as I speak to my beloved people our forces are already in a position to strike deep within the homeland of our imperialist enemy."

The Marshalissimo listened to his recorded voice on Radio Pacifica with satisfaction. Let the Norde-americanos blast the mountains of Pacifica with their hydrogen bombs. There was practically no one left to kill, least of all himself.

He stared through the grimy porthole of the rusty Greek freighter at the San Pedro docks. Generalissimo Watkins, he knew,

was already on deck, about to march off ten thousand battle-ready Silva y Ora Military Robots. Nine more ships flying the Pacifica flag were tied up in the harbor, as well as six in San Francisco, three in Seattle, five in Galveston-Houston, two in New Orleans, one in Miami, fourteen in Baltimore, thirteen in Philadelphia, twenty-one in New York, seven in Boston, and twelve in Chicago. Alaska and Hawaii would be occupied later in the day, but they were of small importance.

He glanced at his watch. Already the irresistible troops would be on the march to Washington, closing in on the White House and the Pentagon. And even if the President escaped, what then could he do? H-bomb his own cities?

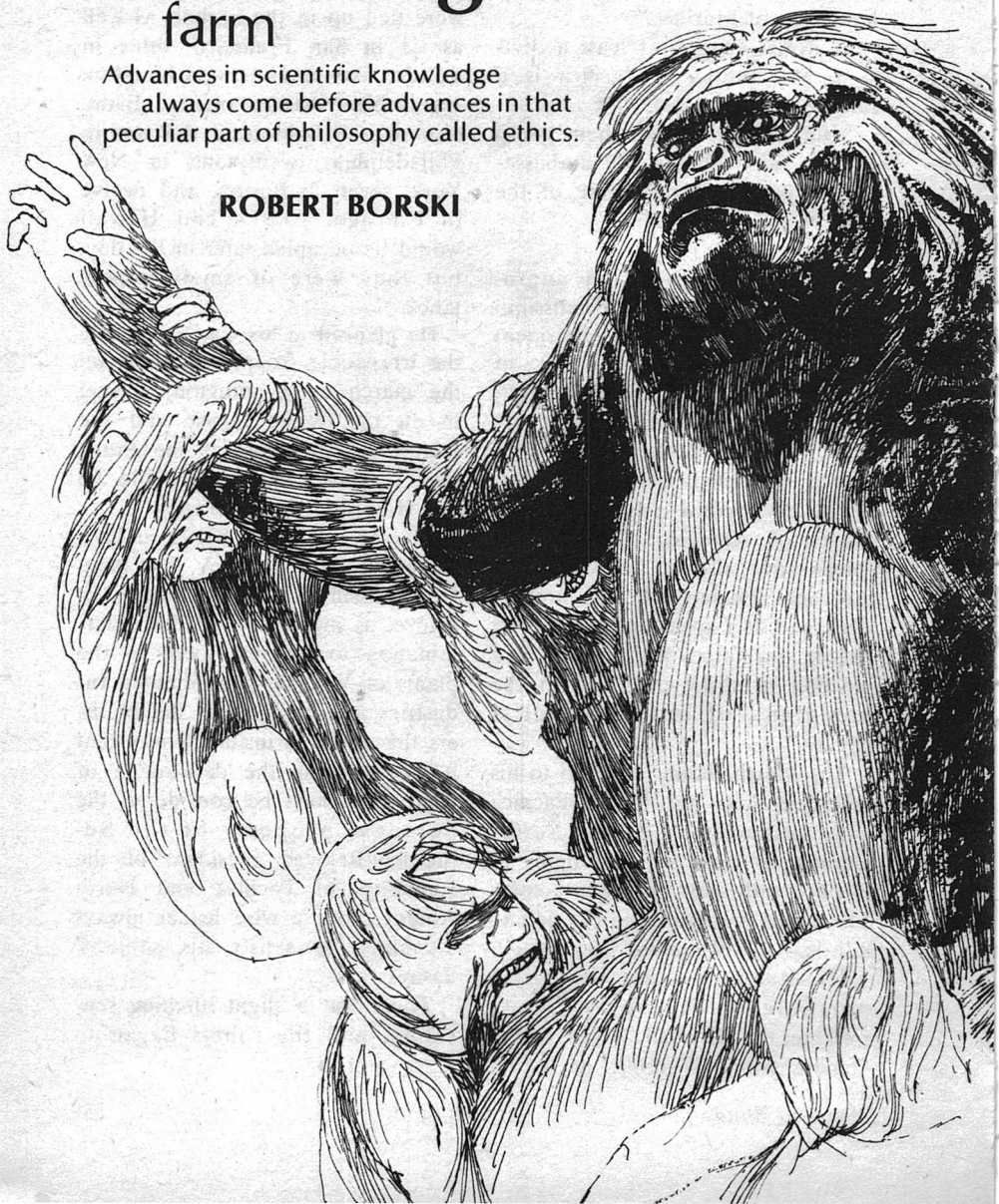
Marshalissimo Silva y Ora smiled. A fine plan. A fine man, Generalissimo Watkins. Crazy, of course, as manifested by his determination to put the torch to the plants of Watkins Consolidated Industries, preferably with his brothers the directors inside. A pity that it would cause the destruction of what now must be considered the personal property of the Supremely-Beloved President of the Republics of Pacifica and North America, but a wise leader always attempted to satisfy his subjects' desires.

There was a slight lurching sensation, and the robots began to march out. ■

down on
Banderlog
farm

Advances in scientific knowledge
always come before advances in that
peculiar part of philosophy called ethics.

ROBERT BORSKI





JOHN SCHOENHERR

Two each to an arm, the other two each with a leg; it took six of us to ride him down.

But once we had him there, his thrashing arms and shoulders pinned, there wasn't much he could do. A breed, if he was to do any fighting at all, was best to do so standing up, where it was almost impossible to offset his balance unless you knew how. Which I did; a gaucho who used to work for Banderlog Farm had taught it to me almost a decade ago, in my first few years of managership. "The secret," he would say whenever the subject came up, "is to make him rear and break his four-point stance. You know, instead of letting him hunker around on his arms the way his pongid daddy does, make him take his feet, the way you'd expect him to stand if human genes had been a little less recessive. Then, provided you've got enough leverage, meaning five or so friends to help, *amigo*, all you have to do is lean him back away and hope to hell he doesn't manage to fall on top of you . . ."

So much for advice well-taken. Especially today, as dawn hazed the summer sky and caught the drone of the incoming morning shuttle from Buenos Aires and one of our breeds went mad. I was on my way out to greet today's zombies when I first saw him, huge and hairy, trying to tear a few of our crossback help apart.

Or maybe *trying* wasn't exactly the word for it. Pawing, pulling, his shoulders slung low, he was more than holding his own, and at his defensive best. Just like the last God-damn time. (Which was all conjecture, of course. I had no way of knowing it was the same breed. Especially when there were twenty to thirty others exactly like him: multiple tuplet brood. But still there was something . . .)

And I started to run.

Then something new: whereas before all three crossbacks were trying to nail the breed with a punch to the jaw, one of them suddenly ran in and tried to hang a headlock on him. Considering breeds have nearly no neck, that may have been why he failed, as the breed reached in with a paw and wrenched away the grip he almost had. You could hear the sound of twisting bone; and falling free, Gregor came up holding his arm in the funny way you hold it when you know it's broke. "Boss, boss," he began to yell when he saw me.

Before he could say anything more, though, I said, "Gregor, never mind. Get your hairy hindquarters over to the lab and see if you can find the doctor. Tell him we got a berserker and need a sedative. *And hurry!*"

He scooted off with a pained look. At which point another three crossbacks scrambled into the yard from somewhere over near the

barn, all three anxious to lend a hand.

"You need some help, huh?"

"We heard the noise . . ."

". . . and thought you could maybe use us."

There was little point in nodding. Their hairy, hybrid cousin was just about to shake himself free of the last two with any grip on him, after which there was no telling what he'd do.

So I said, "OK, you all know how this is done, I hope. Because we don't have time for review"—not if we wanted to avoid further mangling to the two about to be further mangled—"we'll take him down on three. Then all we have to do is hold him there till Dorbin can put him to sleep. Got it?"

All three nodded, smiles on their characteristically broad faces. Then I counted to the agreed-on number and we rushed the breed *en masse*.

His reaction? Waiting for us to reach him, he shook his shaggy head and roared, almost grinning, as if he expected us to rush headlong into his arms.

But we weren't about to do that—not yet, anyway—and stopped short of him by several important yards.

"OK now," I said as we began to circle him (the two crossbacks here already had dropped back at our approach and joined us), "when I say 'yell', start making with the hoopla and moving in. All right?"

There was a chorus of assents

from all around me. Then, a few seconds later: "OK, yell!"

Six very loud voices made with the hoopla.

After which we began to shorten the radius of our circle.

None of which the breed liked. So he retaliated. Making sure he always had one hand on the ground to maintain his balance, he cuffed and he swung his other free hand. Consider the length of his arm and the size of his pectorals and you'll know what I mean when I say that made for one mean swipe/knock/swat. Also consider he weighed five hundred pounds or so. Despite what you've seen on the holo, trying to grapple with a thrashing *anthropongid* is nothing like the Sumo wrestling matches they beam down from the orbiting arenas high above the Earth's atmosphere, where all the breeds are drugged and freefall works against them. T'ain't like that at all. Like I said: you have to break their balance. And that wasn't always so damn easy.

Unless . . .

. . . unless you knew the other half of the secret. Or as my gaucho friend had put it, "All you really have to do is stomp on their knuckles once." So when the opportunity arose—*i.e.*, when the breed was looking in the opposite direction and just about to grab one of the crossbacks—I did that; twice in fact. And got him to rear up very suddenlike.

As prepared as you are for the sight, there is nothing like seeing a latter-day gargoyle shuffling about on his much shorter hindlimbs, howling, and trying to shake away the hurt in his hand, to upset your sensibilities. But we were hardly in any position to appreciate the awesomeness of the situation, and quickly jumped in. I managed to grab an upper arm's worth of muscle and hair; five more pairs of hands helped secure the other limbs and keep him standing.

Fortunately, everyone involved had also seen the training cassettes and knew how this was done. Shifting and leaning, most of us cursing, we pushed and we pulled—the locus of our efforts lay behind the breed a yard or two—and finally managed to tip him back, back, and over. He fell to the ground with an audible thud and a heavy grunt, carrying us with him. After that, it was only a matter of keeping him there, till Dorbin could get here.

“Now watch out for his teeth,” I said between breaths. “I wouldn’t want him to take a chunk out of anyone’s arm before the Doc can get here.” All I needed was for one of us to get bit and lose his grip. Then we’d be right back where we started.

But that never happened, fortunately. Before the breed could even get a chance to *try* and chew one of us up, I caught a glimpse of Dorbin on the run, heading toward

us from the lab, medikit in hand.

A few seconds later, when he reached us, he was panting almost as much as we were. “What the hell happened?” he asked, dropping down beside me and reaching inside his kit.

Gnarled hands opened, clenched, withdrew. I watched him position the syringe above a bunched dark muscle. A tiny whirl half a second later (the syringe was needleless and worked on ultrasonics) told me I could relax a little. “I almost wish I knew,” I said when he raised his terra cotta face to mine. “But I came in on it halfway into the fun. So you’ll have to ask Sebastian or Jorge . . .” And I looked quickly to the two who had been here from the start.

“It was the same as the last time,” Sebastian said, licking blood from his split lip. “Right?”

Jorge nodded in agreement. “We were taking him out to the exercise pit when all of a sudden he went crazy and turned on us. Just like that.”

Dorbin: “You didn’t provoke him at all?”

Simultaneous shakes. Then, “Not that either of us is aware of,” from Sebastian.

I let go of my portion of arm and looked down. By now the breed was perfectly still, his blood-shot eyes half-closed, his thin-lipped mouth half-open. I found the brand mark on his hip and smoothed away the hair so I could

read it. What it said: kindred 612A/9. Exactly the same as last time.

"Jason . . ."

I didn't want to look back up just yet.

" . . . I can always run some more tests on him. Just because I couldn't pick up anything a couple of weeks ago doesn't mean I won't be able to this time. For all we know, it may be something Medichack isn't even programmed for. You never can tell . . ."

. . . especially when you didn't want to be told. A thought I immediately exorcised as soon as I realized Dorbin was helping me up.

"Yeah, OK," I said, standing. "You do that for me, Dorbin. 'Cause otherwise"—as if there *were* alternatives—"we'll probably have to put him away before he does any real damage. OK?"

Something in his eyes (compassion? fear?) told me he understood even more than his nod. "I'll get on it right away," he promised. "Just as soon as I can get him over to the lab." And he began to direct the carrying away of the snoring breed. "Jorge, Sebastian, Hercule, come on, give me a hand . . ."

I was a little dusty from the fracas. Still, I did my best to brush it off. Then turning, I began to make my way over to my original destination, to where the dead were only the dead and not the lingering ghosts of a day eight years gone by.

As manager of Banderlog Farm, one of the duties my bureaucratic overseers expected of me included the welcoming of every new tour group, a welcome I was expected to give them on landing, as they stepped from the shuttle cab. Because of what happened with the berserker, though, today I was a little late, and everyone—I could see today's five visitors as well as Ira Cahill, who was one of our employees—was waiting for me in the shadow of the shuttlecraft, watching my approach.

Trying for a smile, and failing because I suddenly realized there was something significant about today's listing of arrivals, I hurried across the scorched surface of the landing strip, wondering what that something significant was.

Then I saw her; she was standing next to the zombie. And I wondered how I had ever forgotten.

"Tolanda," I said as soon as I was within hailing distance, "welcome back."

Stepping out from the shadow, she smiled: a very tall and very attractive woman. Then, some more of the same stepping, and she was greeting me with open arms, a hug, and "Hello, Jason."

"Hello yourself," I said as she pulled back (I still didn't know which was better at this stage: holding her in my arms or wondering just what it was about her green-eyed, dark-haired beauty I

always found so beguiling). "How you been and how's the squid in Trieste these days? As soon as I introduce myself and apologize for being late to your fellow visitors, I'll give you the chance to answer some or all of these. OK?"

She nodded, taking my proffered arm. "After you, then." And together we walked back to where the other four guests were waiting, along with Ira.

"I'd like you to meet Jason Doheny," he said when we reached him. Tall, thin, and ruddy-haired, Ira Cahill was one of the few non-crossbacks we employed and my second. It was he who usually conducted the tours, through the lab and the barn, and also he who explained to any askers the basics of interspecific hybridization. "Mr. Doheny's the manager and head honcho around here—"

"And he's also late, for which he apologizes. But we had a little trouble in the stockyard. And I got caught up in it." I tried to shrug, as if it were part of the business, but I'm not sure it came off too well. "In any case, good morning, and welcome to Banderlog Farm. My name, as Ira told you, is Doheny, and when he gets done showing you around, I'll rejoin you and help with any breed selecting you might want to do. In the meantime, though, Ira will be in charge and any questions you have, be sure to ask him, because that's what he gets paid for. All right?"

Still in the shadow of the shuttlecraft, anonymously quiet, the other four visitors looked out at me, then to Ira. Once I had the time I would recheck the briefs I had on them and find out who was who. But for now they were just three almost nondescript individuals and the zombie, none of whom, unlike Tolanda, had ever been here before.

Turning back to Ira, I said, "Miss Hyde-White's been through a half-dozen or so of your tours already, so we're going over to the pit. Probably catch up to you in the lab. OK?"

He nodded and turned to the quartet. What he did then, though, I don't know. Because I suddenly found myself walking arm in arm with Tolanda.

"You know," I began, "when they told me on the comwork last night that you were coming, I said to myself, 'Hey, that's good. It's been a while since we've seen each other and it'll sort of be nice for a change to have someone to talk to about something other than buy-this-breed-or-else.'" She smiled as the wind blew a dark wing of her hair forward and I smoothed it back in place. "So what have you been up to?"

Three very distinct lines creased her forehead, and her smile became a pursed frown. She looked to the ground, shook her head slightly, and then looked up to me, where I'm sure my puzzlement

showed. "What have I been up to, huh? What else? Recuperating from one of those regrettable love affairs people like me are always falling into. They never turn out happy, you know. Even though this one had more going for it than most of the other ones, really."

In the eight years it's been since my wife's death, my contacts with women, social and otherwise, have been limited to only a few, to the women and the extra special femmes who took away nothing from those years and whose effervescence/*joie de vivre* always overrode the corresponding pains. Tolanda Hyde-White was both of these; and she also had a way of making me feel needed, a need she was making me feel now.

"But then I suppose it was just as well," she said, biting her lip. "Maybe even inevitable, if I can ever talk myself into it. You know what they say: nothing ever seems as bad as it really is if you can reduce it to the manipulations of fate, right?"

Locked into her bright eyes and the way her long dark hair lapped her smooth shoulders, I nodded, smiling at her small deceit. "So tell me about it," I said. "And I'll try not to be too envious of whoever it was whose heart you broke." Which was my version of a small deceit. Tolanda and I had been friends ever since I first started to work for Banderlog Farm, back when it was still located in the

States. But only friends. Lovers, she tended to discard, and I was much too fond of her company and patronage to risk either one. So there were limits to what I could say or do; but not many.

"Well, oddly enough, Jason," she began, "Bjorn—that was his name, Bjorn Birger—reminded me a lot of you. He was tall and very good looking, with the same blue eyes and intense look. And there was also a slight facial resemblance. Something about your broad forehead and frowning disposition, I think. I don't know. Anyway, I met him in the Balears, on Majorca, which is where everybody who is anybody was going last summer, and we more or less hit it off right from the start. Considering the competition I had from both men and women alike, I guess I was lucky right there. But there was also something else about him. A lack of ostentation; a subtle sophistication. I don't know again. But maybe if you traveled in the circles I did, I could explain it to you easier. For now, though, let's just say he was different and I liked him more than anyone I had met in a long, long time."

Considering I *was* privy to some of the circles she traveled in (a good deal of her kind of people were patrons here), I had a vague idea of what she meant. At least enough to know he might have been someone she could have been semi-serious with, a state her low-

ered voice and far-off gaze seemed to indicate.

We walked on, slowly, Tolanda continuing with her story. "So one night, after a perfectly fabulous day of hydrofoiling in the sun and the sea, we went back to our chalet overlooking Palma and watched the city from one of the cantilevered balconies. It was beautiful, Jason. The lights, the moon on the sparkling Mediterranean, our perspective from above. It was like something I had always been looking for, but had never found. Or maybe it was the wine—we had been drinking quite heavily when I mentioned something to the effect that a century ago a relationship like ours would have been impossible. I mean, I thought he knew, Jason. Most everyone I know's been through rejuvenation at least once, and I have friends who have been through it as many as five and six times. So three isn't really that many now, is it? Only Bjorn didn't see it that way. He started to rant and rave about honesty and truth, and for all his sophistication almost threw me from the balcony once he found out. And just because a long time ago, I could have been a grandmother before he was born. As if age made a difference anymore." Sighing loudly, she looked up to me and shrugged. "I guess maybe it was for the best, after all, huh?"

Coming from someone at least twice my age (I'll be forty-two next

month), who looked all of maybe thirty-four, a question like that was more an affirmation of life-as-it-was than a rejection of what-it-could-never-be. Not exactly optimism; but it was something from which she could build and learn, and moreover I told her so. "You'll get over it soon enough, Grandma. Another summer in the Dominicans, a lunar junket or two, and you won't even be able to remember his name." I forced a smile. "Besides, take it from your confidant, who knows, lessons accompanied with some sort of pain are usually the ones we remember longest. So maybe next time . . ."

And she smiled, too, perhaps a little wistfully, but it was a smile just the same. Which just about carried us to the banked edge of the pit, where about two dozen breeds were being led down the ramp next to us by Hercule.

We watched Hercule assign each breed to a position within the pit itself then; lumbering and slow, each breed took up his or her place on the assigned apparatus, looking almost like anthropomorphic bears or alien apes. In another minute or two, when Hercule activated the computer-guided lighting system, the breeds would begin a series of exercises designed to, among other things, increase their manual and pedal dexterity and slough away fat and ennui. This was also the most opportune time in which to showcase the breeds for buyers; for in-

stance, a government representative here to replace a breed who had died in some sort of industrial accident (as opposed to buying them by the kindred load every spring. But you had to account for accidents just the same; working in the desert farms or undersea mines were sometimes precarious operations) could test out a breed's dexterity as well as its learning capabilities, just as an equally wealthy buyer might buy a breed for its apparent vigor or health, to back him up on an organ transplant should he need one someday, or even be in need of now.

So where did that leave Tolanda Hyde-White?

Answer: somewhere in the middle of the latter category, probably. According to her last Med-check printout (received and on file in our office), she was in perfect health this time around; but every four or five years she bought a new breed, anyway, so just in case something did go wrong (as it had once, with one of her kidneys somewhere between her second and third trip through rejuvenation), she would have only the best of all possible banks to work from: a half-ape breed in its prime.

We watched as Hercule double-checked the pattern on the computer console, which like the lights, was built into the pit-wall. Then on a nod from me, he punched the activating stud and the color-coded lights began to flash. The breeds,

having been trained to memorize the particular sequence of lights, then began to exercise.

"Now, when and if you see any particular breed you like, Tolanda, all you have to do is say so. OK?"

Tolanda Hyde-White blinked, looking.

Below us, a scene which only someone like Hieronymous Bosch could have rendered into any sort of visual representation: an amalgam of man, ape, and machine, each interacting with the other in perfect harmony, as the breeds moved from station to station, stopping and starting and changing modes of exercise all to the flashing of the lights themselves; it was almost as if the pit were a factory and the various calisthenics they performed part of their job operation. How Bosch would have portrayed these hulking, grunting beasts, their bullet heads and hairy bodies lit up eerily by the changing lights, is beyond me. But he more than anyone else could have probably done it.

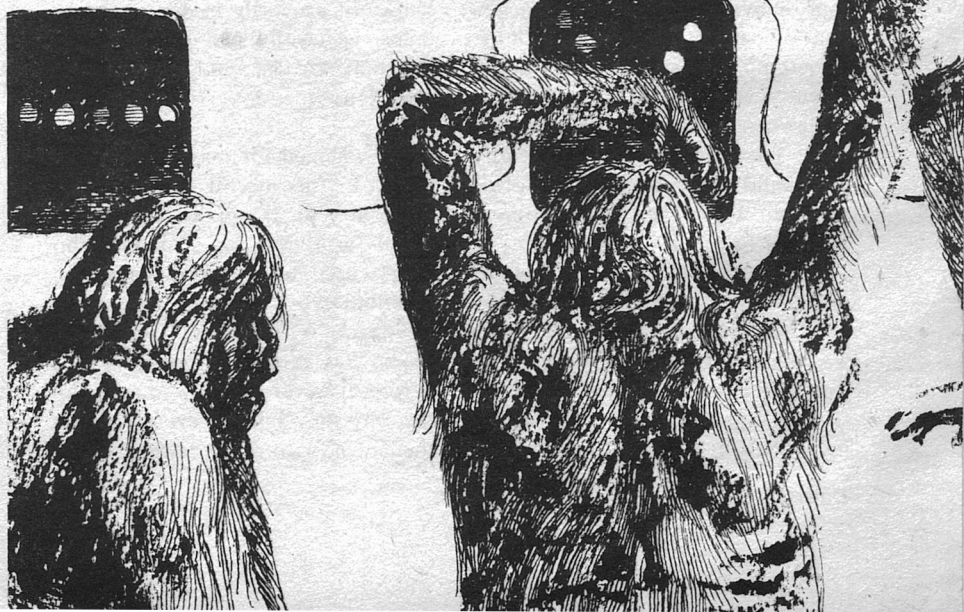
We watched for maybe five more minutes; for me, it was nothing new, a typical pit on a typical breed farm. But for someone who wasn't used to it, I knew it was a potential eye-grabber.

Then, "You know," said Tolanda, "as much as I've seen this before, it never ceases to amaze me the way they just do everything on their own, with no one telling them

what to do and no one down there forcing them to do it.”

Which wasn't exactly true, considering they had to be led to and from the pit by a crossback or two. But true enough for me to say, “Exactly. And that's why they make such good laborers. They're easily trained and conditioned, their demands are relatively minor, and they can work in environments a normal human being couldn't, say, where monotony or physical demands are in excess of normal capabilities.” Actually, that was one

of the main reasons, along with gene-enzyme mapping, behind interspecific hybridization and raising breeds. And it wasn't until twenty years after the farms were first set up that antigen neutralization was perfected and breeds became sought after and bred for their transplantable organs. “I suppose you've never been interested in that aspect of game farming much, considering it was the latter that brought you here . . .” But she was too intent on watching the lights (which were admittedly hypnotizing at times) and the exercising breeds to be listening with any attention to



me. So instead, I just watched her watching.

Then finally: "All right, Jason, I've made my choice. I want that one over there"—she pointed—"the female on the tension apparatus."

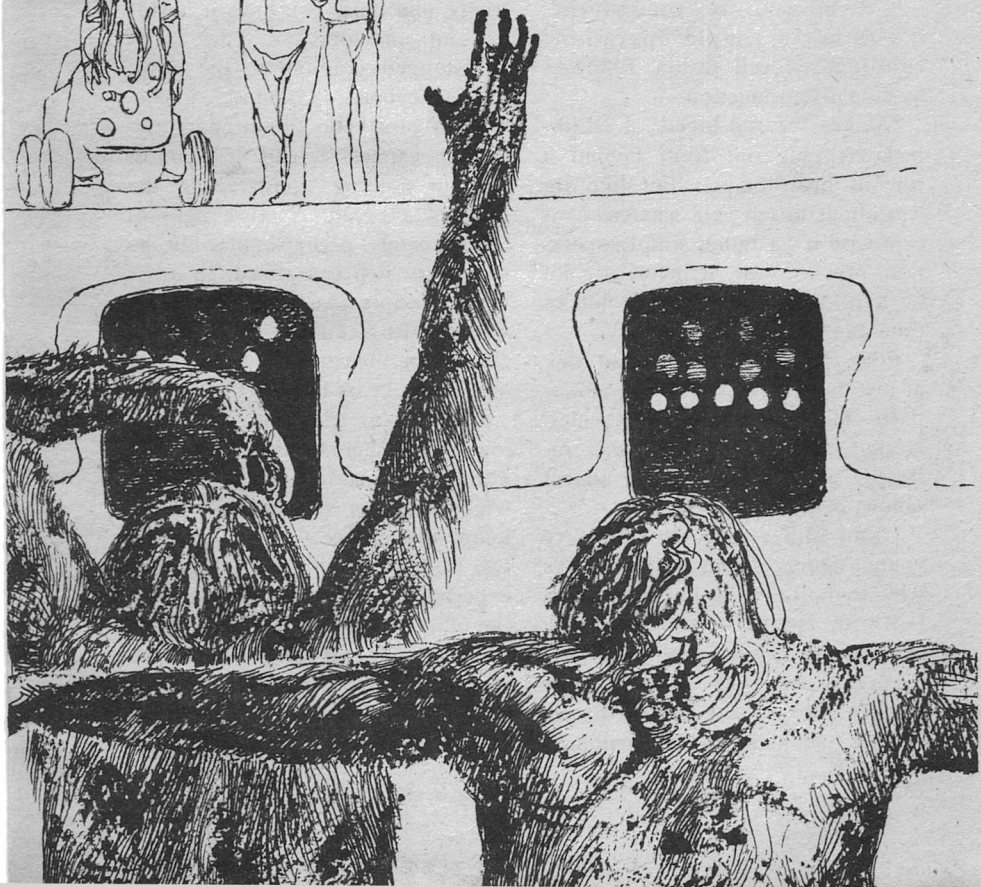
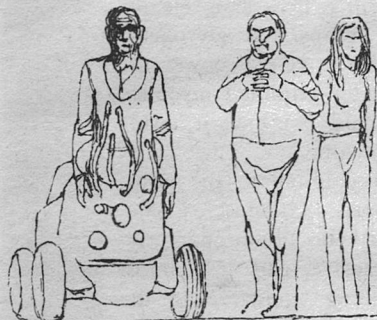
I followed her finger to a fair-sized, brown-haired female, wrestling with a spring-pump tensor

bar. "OK," I said, "all we have to do is fill out the papers and she's yours."

That brought a smile to her face; a smile to mine, too (beauty does that to me).

Then, "We better get going," she said. "I know you have to get back to the others. As much as I'd rather you wouldn't. But I know you too well by now. So come on."

And off we went, she talking, me remembering, our arms bridging



the interface of words and years and in-betweens.

3

After leaving Tolanda with Dorbin, I walked over to the lab, with the intention of rejoining Ira and the others. When I found them, standing in a group around the heterokaryon incubators at the north end of the building, Ira was just finishing his spiel on how we could take cells from *Gorilla gorilla* and *Homo sapiens* and come up with a somatic hybrid of both.

“. . . so you see, concept-wise, it's rather a simple operation: virus-induced cell fusion, followed by clonal reproduction—”

“Makes for one breed,” I ad-libbed, stepping out from behind a row of heat lamps. “But like Ira was about to tell you, whereas concept-wise it's a rather simple operation, practice-wise, it involves a lot of hard work and takes a lot of time and costs a lot of money.”

Four faces turned around to look at me: two were dark and one was pale. Then the zombie wheeled around and the balance was restored, with another pale, almost sallow, countenance.

I said, still eyeing the four very young figures, “Presumably, that's why immortality is limited to the few with money, to the ones who can afford rejuvenation and cybernetic devices such as our friend's here . . .” I pointed to the zombie, who, from his abdomen

down, was encased in a protective roboisshell. And inside that shell? Well, take one very sophisticated wheel chair and one very sick human being and connect the two via a series of grafts between the nervous system and corresponding machine analogs, add whatever prosthetic devices you deem necessary to insure the survival of your patient—in a heart case, cardiac stimulators, in a liver case, cleansing fusion pumps and glycogenic storage banks, et cetera—power the whole thing by amplified myoelectricity, and there you have it, inside and out: one zombie.

I stopped pointing to the grim-looking cyborg. “Granted,” I said, “that a prosthetic life support system is expensive, but it's almost next to nothing compared to the price of a breed. A price, perhaps unfortunately, perhaps not, only the very, very rich can afford. In other words, people like yourselves, with whom, hopefully, Banderlog Farm'll be able to do business now and in the years to come.”

I looked to Ira, who was standing quietly behind the others. He nodded his ruddy head slightly, which was his way of letting me know the prospects for a sale or two were good with this group, as I expected. On the way back from the office, I had taken a quick look at the briefs prepared on today's visitors by our office in Buenos Aires. Like Tolanda Hyde-White, they were all quite well to do, hav-

ing made their money via inheritance (the Ceylonese), stock speculation (the Brazilian), algal additives (the Londoner), or by growing manioc in the desert, which in turn, was used for carbohydrate fermentation in the plastics industry (the zombie, who hailed from the States). So they were all rich enough, and selling, from now on out, was more a matter of salesmanship than anything else. And that's exactly what I intended to pursue.

"Now then, are there any questions that haven't been answered so far?"

Ira looked very smug when there weren't. In fact, the only reaction I got out of any of them was a cough. The Londoner, who was gaunt and hollow-eyed, was dying from emphysema.

I said, "All right then, good. We can move on from here to the pit. Just follow Ira"—who began to head toward the door—"and I'll bring up the rear."

Outside, the sun was bright and full and made you blink your eyes a lot. There was also a slight wind up, and as we walked across the reddish soil (the zombie's wheels tracking the dirt), it kicked the dust up a little, causing the Londoner to cough some more. We passed the barn again on our way, then strolled by the stockyard, where some ten, twelve breeds were throwing handfuls of dirt into the air and bellowing loudly when the

dirt came pelting back down on them. We were taking our time, so next when we passed a series of solar stills and solar energy units I explained how we tried to be self-sufficient, and how we raised a good deal of our own food in the form of crops, which we harvested twice yearly with the aid of our breeds and stored in cribs along and inside of the barn. Then when one of our patrol jeeps drove by I had to explain how it was necessary to maintain security precautions *à la* a roving patrol to keep poachers away. And kept walking.

Comments, as such, were few. The only one to show any interest at all was the soft-spoken Brazilian, Guilherme Salgado, who wanted to know why we didn't use an ionized force field to keep out poachers instead of a patrol. "Too much drainage on our power system," I said. "And hardly worth it. Poachers are few and far between, which is fine with me. But just the same, every once in a while, someone decides they want to make some easy money. So that's why we keep a patrol. Which, by the way, has kept losses down to only two or three in the last decade or so."

Silence then from everyone (except the zombie, of course, whose prosthesis not only had to serve him as a liver surrogate—total hepatic failure was what his Medicek said—but also as legs; and that meant lots of humming gears and

meshing parts). So make that *verbal* silence from everyone until we reached the pit, where, even there, surprise and awe were more the reaction than questions and/or comments. There was even very little cursing, or muttering. Just mostly staring, and an occasional look of hope or disbelief.

We stood there, the sun to our backs, our shadows falling into the pit, and watched as this particular group of breeds very quickly finished up their series of exercises. Then when they were done, the dark nap of their bodies covered with a fine wet sheen, Jorge (who was a generation less hairy) led them away, only to have another group led by Sebastian and Hercule immediately take their place.

"Now if you don't see any particular one you like," I said shortly, "we can go back to the barn or the stockyard, where there's over two dozen kindreds to pick from. We have some two hundred individual breeds in all. All you have to do is pick—"

Something low and guttural sounded next to me.

"—one."

On an audio level alone, I couldn't tell whether it was a forced laugh, or maybe a sob. But when I turned to the zombie, there was a pained look in his jaundiced eyes, and his lower lip was trembling. So it was more than likely the latter.

I said, quickly, "Are you all

right? I mean, it's not your prosthesis, is it?" Somewhere inside that metal chair-shaped exterior I knew there was a dorsal column stimulator designed to kill the pain of any number of sensitive nerve/machine grafts as well as any kickback his liver was putting out. But there have been known cases where the unit has failed, or where the electronic impulses sent out by the stimulator had to be turned up. Ergo, my anxiety.

"No, it's not the prosthesis," he said solemnly. "It's something else, unfortunately. Something else entirely . . ."

I looked to the others. Except for the turbaned Ceylonese, they were staring at the zombie, at his prosthesis. Which wasn't hard to figure out why: buying a breed or just simply dying were the only other alternatives they had to ending up in a similar position, a position which, if the horror on their faces was any indication, was to be avoided if at all possible.

"You see, Mr. Doheny," the zombie said when I looked back to him, "about twelve years ago, I took a tour of Banderlog Farm. It was the year, I think, before breed farming was banned in the States and you moved down here. I'm quite sure you weren't manager then, if I remember right . . ."

He did. It wasn't until we bought out this *estancia* and were subsidized by the Argentine government that I was appointed manager. But

even so, I took a closer look at his papers, at his name (Hugh Danforth) and all the other facts included on him. And gleaned nothing.

But there was a reason why. When I looked up from his papers, Danforth was staring at me and frowning. "You won't find what you're looking for there, I'm afraid. At least if you're trying to place the name. Because it's been faked. Falsified. It should read Margold. August Margold . . ."

"As in *Senator August Margold*?" I asked immediately.

He nodded slowly. "Just about, sir. Only it's ex-Senator now. I'm retired. A deadman, too, as well . . ."

I could feel myself frowning and, paradoxically, wanting to laugh at the same time. There were few people in the breed farm business who had not heard of Senator Margold, who some ten years ago had ridden a band-wagon to the Senate by getting breed farming banned in the United States. Backed by a veritable host of lobbying groups (religious leaders, anti-vivisectionists, genetic manipulation paranoids, et cetera), it hadn't been all that hard, especially with their spurious reports on how breed farms were operated like concentration camps and how breeds were all but human in appearance. And now the man responsible for all that was here, on a return visit to Banderlog Farm?

"I probably should have recognized you, Mr. Margold," I said, still a little incredulous. "But it's been a while. Plus considering you've undergone rejuvenation since then"—one of the marvels of our age, besides near immortality, was that you didn't have to grow old appearance-wise if you could afford what rejuvenation entailed: calciphylaxis, hormone treatments, alloplastic remodeling, the whole works—"in addition to being sick . . ." I shrugged, looking at a face some ten years younger than mine. "Anyway, if you're expecting me to cry about the injustices and myths you've helped to perpetrate—"

"Damn you, man!" he yelled suddenly. "Don't you understand?" He indicated the pit. "There lies my view of hell. Everything I've stood against, everything I did my best to put an end to, is here at my feet. Only instead of me being above it, I'm descending into it. I'm descending into an abyss of my own making . . ." The gloss to his eyes broke, shedding from the corners, and there was an unmistakable pathos to his voice as he continued. ". . . but you see, I married after my two terms in the Senate. I married a young, beautiful woman, whom I love very much. Only when you're confined to this type of living"—he dropped a fist to his side, rapping metal—"there isn't much you can do to express your love. Which, in addition to the trauma and hardship involved,

well, it's just too much . . ." Here he looked at me, incontestable proof that strictures of irony governed a good deal of the universe. "So that's why I'm here. To be made whole again, a man instead of a machine . . ." And again he made his half-sobbing, half-laughing cry. After which only the panting breaths and the clicking of lights below made any noise.

Then: "Mr. Doheny?"

I looked up. Then waited for the Londoner, who looked a trifle embarrassed, to check his coughing.

"I believe I've made my choice," he said finally, pointing to a strongly-built male directly at our feet. "You will make all the reservations I need and clear the red tape for me at the Buenos Aires end, I trust?"

I nodded. "Sure. As soon as possible." Breed farms having also been banned in Great Britain (nine countries in all), he would have to have his transplant in our privately-owned hospital in Buenos Aires, which was all part of services rendered.

Turning to the Ceylonese, who, as before, was still staring at the activity below (at the time it was taken, his Mediceck indicated there were a lot of things in his bloodstream that didn't belong there, and the fact is, he still looked a little strung out, with dilated pupils and a perpetual smile), I said, "You have made your choice, sir?"

He pointed with a painted fingernail to a small, light-haired female. I made it a point not to ask him why he picked a breed of the opposite sex.

The sloe-eyed Brazilian was next: "If you don't mind, I will think it over and let your office know in Buenos Aires."

I said, "Fine. No pressure either way. Do what you want."

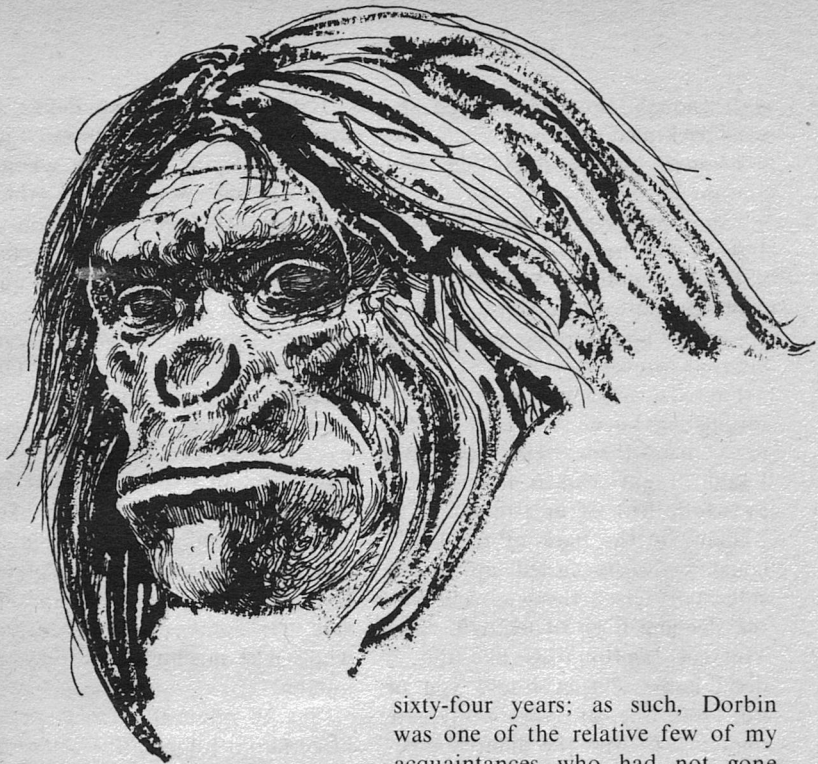
I turned to the zombie. But before I could ask him if he had found anyone special to his liking, he said, "It doesn't matter. Anyone will do. Just as long as I don't have to pick him out." Then for the last and final time that strange cry of pain or laughter found its way to his lips.

4

Sunset on the pampas, because of the encompassing scope of the horizon and flatness of the plains, comes as a series of gradations in color. The bloated sun, sinking lower and lower, catches the clouds with a bright opal wash. Where there are no clouds, the sky shows through as blue, then blue-gray. A little while later, the only way to distinguish between the neutral gray of sky and plain is to look out in the distance; where the star-flung vault ends, the darkness is deeper with shadows.

Tonight was no different.

The clouds had come scudding in with the afternoon, with the departure of today's guests. Twenty min-



utes away by shuttlecraft (two hours by jeep), they were in Buenos Aires now; but like the clouds, I knew they would return someday.

It was with this in mind that I stared out at the shadows, whiling away the better part of an hour.

The lights were on in the lab when I turned around. I knew now it was time to go talk to Dorbin.

"Ah, I knew you'd be along before long," he said when I walked in on him. He was standing hunched over one of the electron microscopes, looking very much his

sixty-four years; as such, Dorbin was one of the relative few of my acquaintances who had not gone through rejuvenation, nor planned on going through it in the future. Bearded, gruff, and tanned to a leathery brown from a decade of life on the pampas, he was one of the oldest-looking men I had seen in the last five years or so. Also, one of the wisest.

I said, "It's clouding up outside. Another month and the off-season'll be upon us."

"Which is all the more reason for you to have accepted Tolanda's invitation to join her in Montevideo. With the slowdown in business Ira and I could handle things

well enough. So maybe when she calls back next month . . .”

I raised an eyebrow. “She told you that?”

“Sure. She tells me lots of things. I think I’m her current father figure.” He winked. “Besides, it’d probably do you a lot of good to get away. You can’t go on blaming yourself forever, you know.”

I took a chair, sitting down and raising my knees so I could perch my chin on them. “That depends,” I said. “Eight years is a long time, granted. But after today . . .” Looking to the back of the lab, I could see, fists curled up to his side, hairy chest rising in and out, the sleeping form of 612A/9. “. . . You see, Dorbin, it’s like this. I don’t know if I ever told you or not, but one of Nora’s favorite quotes dealt with the difference between men and animals, where death and immortality were concerned. Now I’m not sure how it goes exactly—you can look it up in the talking book of Borges the Argentine government put out to commemorate the seventy-fifth anniversary of his death if you want—but it ran something to the effect that man is the only mortal animal and that all the other animals, *excluding* man, are immortal because they have no conception of death at the end of their lives the way men do.”

Dorbin blinked, considering. “And that’s how you wish to define ‘human-ness’?”

I said, “How *do* you define human-ness, Dorbin? I mean, isn’t that the entire question when it comes to the morality and ethicalness of breed farms? Where do you draw the line? Is it a proportion? Is a crossback, who is three-quarters human and one-quarter ape, legally a human being? Is seventy-five percent the *sine qua non*? Or is it fifty percent, like each breed? Then, of course, you can always be picky and consider the permutations, like some rich old bastard running around, acting like a twenty-year-old, with every replaceable organ inside him transplanted from a half-human, half-ape mosaic. Or someone like Margold, who’s part machine. Are they also human?”

“It’s an interesting circus we run here, Jason, I agree. But you’re getting carried away.” He put his hand on my shoulder, then appealed to me with his eyes. “Make your point if you have one to make.”

I put my knees down, and my hands together. “Well, consider the evidence,” I said. “In the past ten years or so, we’ve had maybe seven or eight incidents like this morning, where a breed suddenly went berserk for no apparent reason. But in each of these cases, visitors have been scheduled to come or have already arrived. Even more suspicious, more than half of these incidents have happened in the pit, *but only when there were onlookers*

above, in which case the incidents involved ultimately resulted in their *not* being picked. Or if you think that's coincidence, then take today: according to Jorge and Gregor both, the breed didn't do anything adverse *until* the shuttle was in hearing range. And they're both sure it happened exactly the same way last time, which also just happens to be the point Nora tried to make to me the week before she suicided. Some of the breeds, and the number, thank God, is negligible, but some have learned to associate the coming of visitors with the taking away of those picked, of those who never returned. Now, how they've come to associate that with being bad, I don't know. But considering some of the people we pull in here, like the dead, the dying, and the sick, maybe they don't want to find out. Or maybe it's fear of the unknown. I don't know the answer to that particular question. But what I do know is that, eight years ago, when this happened to us for the third time with the same breed, my wife committed suicide because she couldn't stand the thought of playing God to what she considered could be rational, thinking beings, while"—as long ago as eight years was, sometimes I thought, often with tears, it wasn't long enough—"all the while I kept telling her the same things you're about to tell me, that the whole idea is ridiculous, and that it's something only someone like Mar-

gold and his followers could believe. But"—I blinked away at something in my eye—"that'll never bring Nora back. It won't . . . ever bring her back."

Dorbin observed my silence for the minute or three it took me to recompose myself. And when he finally spoke, his voice was softer than usual, with less of a gravelly pitch to it. "You know," he said, "in the past ninety seconds or so, I debated on whether I should say anything at all, but the pedant in me won out. So for what it's worth, here goes. You know as well as I do that if you believed everything you just said you wouldn't have been able to stay here for eight years—"

"In a manner of speaking, you're right. But I *made* myself disbelieve it and stayed on just to prove I was right."

Dorbin sighed exasperatedly. "But don't you see, no one's proved you wrong yet. The body of scientific evidence on the matter all points in the opposite direction, despite what Margold and his screw-loose cronies turned up, which by the by just happens to fall apart on critical examination. A breed isn't human, Jason. It's subhuman, if even that. As for Nora, there isn't much I can say, other than maybe she wasn't cut out for this type of work. God knows how many turn-overs they've had in game farm managers in the last twenty, twenty-five years. Confronted with

death and the idea of your own and everyone else's mortality on a day-to-day basis can be extremely depressing, perhaps enough to drive you to suicide, like it did Nora. Or enough to make you think you're still culpable for something that happened eight years ago. Something which agonizing over will never change, whereas you have the rest of your life in front of you. Be reasonable, Jason. The politics of survival allow for a lot of hurt and pain. But survival *is* their objective." He put his hand on my shoulder and made me look up. "Besides, what would you say if I told you Mediceck turned up some irregular EEG activity in 612A/9?"

I looked to the back of the lab, at the breed, and thought of all the havoc he had caused. Then, "I could either force myself to believe you," I said, "or follow my inclination and thank you for lying."

He shrugged again. "You'll think it over before you do anything rash?"

But before I could say anything, shots: three of them. From the direction of the barn.

"Now what the hell?" from Dorbin.

From me: "Let's go find out." And together we raced for the door.

Outside, all was confusion. To our right, somewhere out in this year's crop of alfalfa and corn, yellow flames licked at the darkness;

there was an acrid smell of smoke in the air, and shouting. I made out several figures outlined against the dancing blaze; they were beating at the flames with dampened sacks.

Another volley of shots split the air. The system of floodlights we had on the roof of the barn and the living quarters suddenly came on, and I could see all sorts of figures—at least half of everybody on the farm—running around the yard, either heading toward the fire or the barn, where a good deal of shouting, more shots, and breed growling, was still taking place.

"What's going on?" I yelled to no one in particular.

Then Ira Cahill ran by, half-dressed, and I managed to grab a bare arm. "Would somebody mind telling me what's going on?"

"Poachers," he said pointing. "They started a fire to divert the patrol and then tried to storm the barn, not knowing anything about the posted watch we had there as well."

Dorbin wanted to know, "Whose shots were those, though?"

And I said, "Let's go find out," again.

We crossed the distance remaining between us and the barn on the run, trying to stay as much as we could out of the floodlit area—no sense making easy targets of ourselves—and made it unscathed to where everyone was holed up, just beyond the door and behind the

tractors we had parked there.

I was just about to ask what was going on again when I heard another shot being squeezed off and almost simultaneously the ricocheting of the bullet off one of the tractors. Another shot followed, this time from another part of the barn; so there was evidently more than one sniper.

Still keeping low, I yelled across to the nearest tractor, "How many of them are there?"

One of the kneeling figures said, "We think two. There was a third, but we managed to pick him off when he made a run for their jeep." His companion, who also had a rifle, added, "Which makes it one for one. Because if you look just inside the door, you'll see Hercules."

I hazarded a glance, and saw the crumpled crossback spewed in the hay. Two seconds later, another shot ricocheted off a tractor: the one I was behind. But at the same time I managed to pick out the firer's position, from the tiny blue light thrown off by the shot being pulled.

"How about throwing one of

those rifles over here?" I said.

"Careful, Jason," Ira said from behind, a tractor back.

The crossback nearest me lateraled the rifle across to me; at the same time, his companion shot again and brought a short bark out from within. As I took the safety off and aimed then, the man he had hit staggered out from his hidden position and crumpled.

That left one to go. And thinking he might be scared enough to surrender, I yelled, "If you come out now—"

And got another shot fired my way for the effort.

"OK," I said more to myself than anyone else. "It's your life." And fired. And got lucky. There was a scream from within. Then, "Wait. Please. Don't shoot," about twenty seconds later.

His rifle bounced off the floor of the barn, where he threw it.

Then all of a sudden it got very quiet, with only an occasional excited breed coughing or grunting from within.

"OK, you can come out now," I said, still covering the spot of darkness I had fired into.

TEACHING SCIENCE FICTION

Stimulated by the Editorials that appeared last year in *Analog*, the University of Kansas is initiating an Intensive English Institute on the Teaching of Science Fiction, July 7 to July 25, 1975. Guest lecturers will include Gordon R. Dickson, Frederik Pohl, and Ben Bova. For information, write to James Gunn, English Department, University of Kansas, Lawrence, Kansas 66045.

Another thirty seconds passed; then I saw movement, a climbing down from behind the storage crib. The light from the yard went into the door sharply, breaking at the outline of the door, and it was into this he stepped.

When I caught a good glimpse of who it was, I said, "God damn . . ." And watched Guilherme Salgado fall to first one knee, then the other, then face down.

Getting up, I set my rifle down and hurried over to where he lay, and turned him over.

Blood bubbled from his lips; the Brazilian looked up at me. "We meet again, Señor."

I shook my head. "But why? Why when you could—"

"Because like the Señor in the prosthesis, my identification was false, stolen. I have very little money at all . . ." He coughed, his dark eyes glazing. ". . . but I have a little girl. A sick little girl, Señor, who will die unless . . ." He closed his eyes briefly, then opened them again. ". . . unless she gets a kidney."

When he closed his eyes again, I thought he was gone, but after another bloody cough, he opened them and stared at me. "I have never killed a man before today," he said. "You will tell his family I am sorry, no?"

I nodded, thinking of poor Hercule, of how we were the only family any crossback ever had. And then after another moment's con-

sideration made another decision. "I'll not only do that for you," I said. "But I'm going to make sure your little girl gets the kidney, despite what you've done. One of our breeds is sick, insane. And I'm going to give him to your little girl."

His eyes went wide. "You would do that for me, Señor?"

I nodded, trying to smile, even though he never opened his eyes again after that.

I was sitting there then, still staring at him, when someone came in and told Dorbin the fire was under control and that only one of the breeds had been hit in the cross-fire. A minute later, Dorbin's hand on my shoulder brought me to my feet.

There must have been something in my look to prompt what he said next. But his words hit home: "You see, Jason, that's the way it's played. We all have to die someday. In fact, that's about the only thing we're assured of at birth. For me, for you, for all the people who come here thinking otherwise."

Something about what Tolanda had said . . .

"But at least here we can give them a little hope."

. . . something about inevitability.

Turning to Dorbin, I said, "Come on up to the house and I'll pour you a drink. We've got a lot of stuff to talk over, I guess."

And aged and wise, his only answer was a smile. ■

THE REFERENCE LIBRARY

Algis Budrys

FOUNDATION AND ASIMOV

We all know him now, of course, as a bon vivant, raconteur, and pop culture figure. Isaac Asimov has no peer as an explicator of science and other scholarly subjects on a variety of levels of mass understanding, and his personality is such that people are delighted by him. There is just no way, now, that he can ever sink out of sight or be termed a failure.

This is important to mention here because it is in sharp contrast to the mind-state of the young, unsophisticated, brilliant but diffident, unmatured college student who, in the earliest 1940s, wrote what is now justly prized as the best science fiction series of all time. When Isaac Asimov created the Foundation stories for John Campbell's wartime *Astounding Science Fiction* magazine, he expected that he might someday be a medical practitioner, and hadn't the faintest inkling either that he would even-

tually have well over 100 books to his credit, or that anything he was writing would outlast the on-sale period of those particular issues of this publication.

Later, in the earliest 1950s, it was still a source of great wonder to him that Gnome Press—a respectable but small specialized publisher to the science fiction readership ghetto—would bring out actual hard-bound volumes collecting the series as *Foundation*, *Foundation and Empire*, and *Second Foundation*. When Doubleday took over these properties some years later, they were properties . . . but still not novels. The latter two volumes are prefaced by essays that amount to "What Has Gone Before" synopses. The first two do not have endings; they simply stop.

Doubleday spent even less editorial time on them than Gnome had. They just shipped the Gnome editions off to a composition house for re-typesetting. The result is that

the references back to prior volumes cite Gnome as the publisher, not Doubleday.

Finally, Doubleday re-utilized the plates of all three books to produce a bound-in-one omnibus, and called that book **The Foundation Trilogy**. There is of course no common chapter index, and the page numbering starts over again with each independent book. The superfluous prefaces are still there. And now Equinox has taken that Doubleday book, photographed its pages, and brought out this bargain-priced, still rather durable and attractive edition (\$3.95 in the US, \$4.45 in Canada). It is a fantastic bargain, and I believe no serious SF reader's library—or mind—should be without it.*

And now it is a novel; a sweeping, attention-holding panorama of the days when Hari Seldon's psychohistoric Plan was attempting to shorten the otherwise inevitable 30,000-year hiatus between the First and Second Galactic empires of human civilization.

Considered as a piece of recreational reading, it's sure-fire. Its present audience contains a generation and a half of enthusiastic readers born after it was written. This can be discovered by anyone who lectures on SF to high school or college classes. It's good, solid, "What'll Happen Next?" science fiction. And this despite some minor problems—some of them me-

* The earliest Equinox printing repeats page 9 of *Foundation and Empire* as page 9 of *Second Foundation*. This is not a crucial flaw in any event, and is being corrected at this writing.

chanical, and real, while others are ostensible errors in commercial writing technique which turn out to be less than irrelevant to the trilogy's success, and highly revelatory of Asimov's importance to this field.

The significant mechanical problems arise from the way this book was first created by pasting a string of magazine stories into threes and then into one, without any intervention by an editor. We have the two redundant prefaces, for one thing. For another, each character brought forward from an earlier chapter is reintroduced as fully as if it might have been months or years since the reader last found him or her at the newsstand. And of necessity you are then thoroughly re-told what significant thing it was they did at that time.

Then, there's the young Asimov's perceptible trouble getting tenses and cases to agree. And altogether too many commas and exclamation points crept into the word-processing at some stage. All these things are flypaper for the eye.

However, the reader's mind acclimates to them quite quickly, and the story rolls unhindered. This will come as something of a shock to teachers of commercial writing, since Asimov also violated most of the supposedly crucial axioms of storytelling.

Specifically, his dialogue and narrative style are pedantic. The characterizations in the early stories are a series of poorly connected postures assigned to stuffed dummies. Subplots are introduced and left unresolved. Action sequences

are avoided at almost all costs, particularly when they involve the mass killing or suffering which are precisely what the Seldon Plan is designed to minimize. Person-to-person action is pushed almost as far offstage whenever possible, which is just as well considering how clumsily motivated and described it normally is when it does occur.

And nevertheless I loved this book, and consider it a milestone in the development of science fiction? You betcha. Here are my reasons, the trivial ones first:

The syntax, the punctuation, the pedantry, and the curious understanding of the language, are the mark of the autodidact when presented as a package. There's little question in my mind that Isaac's basic curriculum in the Humanities, both the sacred and the profane, was drawn up by a teenage genius—i.e., Isaac Asimov—whose mind demanded much more fodder than was being made formally available to it by the New York City public school system or even by pre-med studies at Columbia. Catholicity of taste, emotionally derived criteria, impatience with details, and a confusion of formality for reliability, are symptomatic.

By and large, this is also a description of John Campbell's personality, of Astounding science fiction writers in general, of the Astounding audience, and of SF readers to this day. Asimov's very high profile in this respect is not a weakness; it's the strength of recognition value. Those who nowadays marvel at how anyone could have

failed to see the "clumsiness" in the writing of SF in the 1930s and '40s ought to consider that it might have been written in an agreed-upon dialect which still hasn't been completely acculturated out of existence, despite SF's recent heavy contact with "mainstream" practices.

What is non-Campbellian in these stories, however, is what is more significant about them, and there is plenty of that. It is there despite Asimov's having taken as his preceptors not only Campbell but the hand of Campbell's mind, Robert A. Heinlein. Either of them could wipe out a fleet or blow off a head smoothly and where 'twas best done. Campbell had amply demonstrated his concomitant ability to show you some of the tears and anger that the engineer's decisive solutions were successfully and swiftly redressing.

Why then does the Foundation series reader tend to feel that similar things discussed or shown are not only mishandled by Asimov but somehow inappropriate? Is this not a story of struggle against interstellar barbarity and the manipulation of inconceivably large populations? Is it not, in fact, the prototype on which such successors as Poul Anderson have built so much that is excellent? Is Asimov not one of the bright examples of "Golden Age" SF creativity?

As a matter of fact, it appears that while Campbell was dealing with Asimov's now-famous early difficulties in learning how to write "Golden Age" SF to Astounding's standards, and while the studious,

diffident young man was wholeheartedly bending every conscious effort to comply with Campbell's Plan, something else was not only remaining viable but was flourishing toward its ultimate vigor at the other end of Asimov's mind.

The liberating effect of John Campbell's editorial philosophies was genuine, mighty, and beyond question. But we want to remember that Campbell, too, was a "natural"—his intensive technical education at MIT and Duke, his family circumstances, and his youth, meant that his editorial precepts were thumb-rules rather than the result of formal training. When he taught—and we all know how well he taught—he taught function, and his criteria were pragmatic. They worked marvelously well. There is little sign, however, that they worked by anything but Socratic head-butting, or that what emerged was so much a conscious creation as it was a resultant.

And I think the method worked most readily with people like himself—cultural descendants of the American WASP tradition that had just stubbed its faith badly on the Great Depression. Taken as a general class, the notable performers of the Golden Age were the engineers and other artisans of technology who went to school knowing that Knowledge had damn well better be Power. None of their other cultural virtues had been effective in keeping people off the soup line or their properties out of the hands of the bank's legal department. (Cast an eye down the roster of villains in wiring-diagram

SF of the late 1930s and early '40s.)

Asimov, however, was straight out of the vast Lithuanian-Ukrainian Jewish enclave, where depressions come under the heading of "What Else is New?" and faith goes back 5,000 years. Asimov came to the US as an infant; his parents were solidly and safely part of the ghettos and villages where the *sharker* and the *macher*, like the carpenter and the well-digger, serve useful purposes in each generation, but the pale, preoccupied, unexpectedly sharp-witted *yeshiva bocher* is the tradition's hope of eternity. To those people, knowledge is what is already well-established; power is the ability to endure; Scholarship is Life, and they drink to life.

The echoes of the Litvak family environment are there. The Second Foundation's decoy world, Rossem, is a black-and-white *Fiddler on The Roof* as Ingmar Bergman would have directed it. The seriocomic Momma-Poppa act of Preem Palver and his wife in the closing chapters is something else—a conscious effect. The dedicated young man is a little older, much more exposed to cosmopolitan influences, a little more objective than when he wrote the earlier chapters—but the roots go to the same soil.

The Foundation idea is a scholar's idea, and much of the early Trilogy "action" in fact proceeds via scholarly disputation masquerading as conversation. Person A propounds a point. Person B rebuts and counterproposes . . . *tracht und tracht a gontser nacht.*

"Action" characters come and go, their fates unresolved, their actions resolved offstage, referred to in passing flashback. In someone else's work, this would be fatal. But for Asimov, the result is psychically satisfying to the reader; a universal trait, different from that usually touched, yet nevertheless equally human and equally valid, is being called upon. The Foundation stories work as Sholem Aleichem's stories work—not by making their protagonists a gift of the keys to the city, but by letting them round off their theses. The thing about Foundation is that each of these people, right or wrong, attractive or villainous, has a place in the scheme. Each is a part of life. And the great scholarly concept in its historic majesty murmurs forever in the background . . . *tum bala, tum bala, tum balalaika* . . .

Death—death as an executive action; death inflicted on others as a solution to one's own distress—is a nearly unthinkable arrogation. To kill a man—think on this—to kill a man is to propose you know more about life than God does.

The wise, practical people to whom you are an eager apprentice can tell you all day that you need fleet battles, conquered planets, and an occasional incident of someone zapping someone else, all for the sake of the greater good of reader interest. You can agree with them. But there are effects which remain your own and emerge on the other side of the head-butting.

Item: A time comes when a scholar must be taken off-stage before he can fink to the Mule. And

when Bayta Darell does use her blaster on Ebling Mis, it's the right thing to do. But a scholar . . . to kill a scholar . . . precisely because of his scholarship . . .

And so we have the first instance in which Isaac Asimov is known to have created a genuine character, and a very early instance in science fiction of Women's Lib. It's not handsome, rugged Toran Darell who does the deed. It's his beautiful, university-educated young bride. Who can kill a scholar? A housewife. Housewives preserve the traditions, and in them—in them only—and only in the last extremity of cultural need—rests the rare decision that life is at cross-purposes with this particular kind of scholarship.

I think a time came, in other words, when the back of Isaac's mind had to find a way for the front of Isaac's mind to satisfy *both* Campbell and Asimov. And from this came great consequences.

Item: From that moment on, *every* Foundation character shows definite signs of an attempt at characterization. But what kind?

The WASP ethic clearly states that flaws are to be eradicated. Late Foundation Asimov characters, and all Asimov characters thenceforward, are based on the belief that frailty and nobility go hand in hand—that the purposes of courage, wisdom, and sacrifice are to rise above situations created by frailty, but also to *preserve* frailty because it is an integral quality of life.

He did not do the job of it, even in the later parts of the Trilogy,

that he can do now. But something new—something not necessarily identified, but something felt—was now clearly part of Astounding's vocabulary, and of science fiction. This is not to say that Asimov invented this kind of writing in this field, because he did not. But he was popular enough, consistent enough, and frequent enough to make it stick. And in his audience were any number of people who would themselves be science fiction writers.

For want of better distinctions, there is, let us call it, Benevolence, in which wisdom expunges human evil and promulgates good; and there is Humanism, in which the better part of wisdom may express itself in handing a cold, angry person a cup of warm broth and a blanket while gently taking the club out of his hand. Either approach may be tender, effective, and uplifting. I do not see one as absolutely better than the other or any other. But then, this tolerant attitude is easy if you've learned the humanistic view.

One learns it in a lot of ways and places. One place is in an immediately post-War Asimov novel called *Pebble in The Sky* which Astounding did not publish, even though it is set in the Foundation universe. Its time predates Hari Seldon's by about 10,000 years, and the First Galactic Empire is at the peak of its vigor. One crazy scholar thinks that perhaps senescent, backward Earth is, incredibly, the original human planet. But the protagonist of the story is Schwartz, a gentle, aged widower plucked from

our time by accident and cast into that future; a shy, poetry-loving little tailor on whom the mailed hand of the Imperium attempts to close.

Schwartz is Asimov's best character. *Pebble in the Sky*, though obscure, is in many ways his best novel.

Since Asimov still writes more from the heart than the head, and never more so than during the middle 1940s, it's a mug's game to speculate on how deliberately he chose to take a creative step even more breathtaking than his introduction of a decisive housewife into the Foundation stories. Whatever his conscious motives, there is so much love and understanding in his shaping of Schwartz that he might not have realized he was the first major commercial magazine SF writer to devote 80,000 words to a lead character who was neither young nor virile nor cute nor alien, and who furthermore did not have an Anglo-saxon cultural background either real or implied.

Looking back on the Foundation Trilogy, it's inevitable that his first serious work after completing it would be *Pebble in the Sky*. And it's perhaps inevitable that it found no major magazine market. But the latter reason alone would suffice to make it one of science fiction's hidden landmarks. The failure to serialize it can be seen as a failure by a series of major editors to keep up with where their own field was going. The date of its appearance as a Doubleday novel coincides, perhaps coincidentally, with a major shift in the structure of SF publishing

power. It certainly coincides with the beginning of Doubleday's mutually fruitful interest in Asimov, and probably with Asimov's first experience of an editorial situation in which he was clearly an equal partner. It wants to be kept in mind that Doubleday's going back into the Gnome list and picking up rights to the Foundation books and the robot stories postdates their sales experience with *Pebble*. Apparently, the market acceptance of what the magazines had rejected was a considerable boost to everyone's well-being as well as a spur to their ingenuities. Cave me no *Caves of Steel*—that came later.

It seems clear that, all respect and studiosness aside, Asimov had

found within himself what he had been searching for while growing from boyhood into young manhood in the course of writing the Foundation Trilogy.

Times change. In his early work, Asimov prefigured and apparently accelerated the advancement of SF into its generally humanistic mode of the mid-'50s. Times evolve; in the mid-'70s, we're exploring situations in which what were once the best ethics have ostensibly failed. Well, onward and upward. But as one might think very strongly upon re-reading the Foundation Trilogy, there are few science fiction writers now who believe as deeply in the humble, gentle but indurate dignity of life as Isaac Asimov did then. ■

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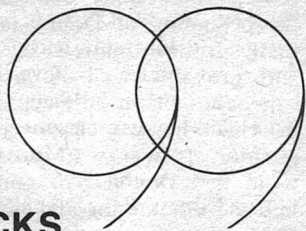
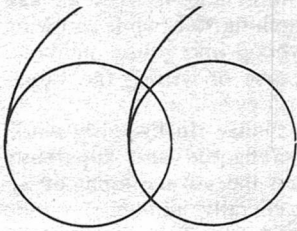
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BRASS TACKS

Dear Mr. Bova:

... You've gotten static about changes in editorial policy during your tenure. I've been a steady reader of *Astounding/Analog* since the early 1940's and a long-time admirer of John W. Campbell. Some of my most prized mementos are letters from John Campbell.

When he died he wasn't replaced. Simply, a new Editor took over. And for my own individual tastes, I'd have to say that *Analog* has improved since. For me, no one can match John Campbell's batting average on the Editor's page; his essays are the prime reason I have stacks of old *Analogs* piled up. But the heart of *Analog* is its fiction, and less poor writing has crept in since 1972, and the freer-wheeling styles have given *Analog* more life.

It's been suggested that you are alienating old readers in catering to a new generation. Could be. It seems clear you are alienating some old readers, for whatever reason. But the tastes of many old readers have changed, and things

we might (or might not) have bridled at twenty years ago are enjoyed or even relished today. It really is unfortunate that some readers of long standing have lost something they valued highly—the "straighter" magazine that John Campbell published. But even institutions change.

JOHN DALMAS

4907 East Half Moon Drive
Flagstaff, Arizona 86001

No one could "replace" John Campbell. But even during his long tenure, ASF changed repeatedly. When people, or institutions, stop changing, they're ready for the scrap heap.

Dear Mr. Bova:

Re the letter from Mr. Durant in the January issue: I heartily agree with all he said, however, I would like to take it a step further. Sure, you could give the cover illustrator a small byline. But wouldn't it be even better if every month, or as often as possible, you would do something similar to what was done with Mike Gilbert in the December issue. Have one artist do

the cover and most of the interior illustrations and then have several pages on him; his background, his work, et cetera. I believe this would greatly increase the enjoyment of the art in your magazine.

MICHAEL ROCK

202 Frick Avenue

Waynesboro, Pennsylvania

We had such an article in our April 1975 issue, and more are on the way.

Dear Mr. Bova:

The February, 1975, issue of Analog was notable for a number of reasons: the new story by Gordon Dickson and Harry Harrison with its genesis in the Campbell film produced by James Gunn, the story by Stephen Robinett under his own name (and I have to agree with Harry Harrison that the pseudonym was ugly), and a very good fact article. But most notable, and very saddening, was the news of the death of P. Schuyler Miller. I started reading Astounding in the spring of 1952, less than a year after Mr. Miller had become its permanent book reviewer, and I have been reading his columns ever since that time. After twenty-two years I cannot help but feel that someone I knew personally has passed away. I recall that Mr. Miller once said in his column that he was not a book reviewer; Damon Knight and James Blish were book reviewers, he said, but he himself wrote what might be termed book reports. I think that was an underestimation of himself but, be that as it may, I for one will miss those book reports and

the man who wrote them.

I am sitting here now wondering if there is any fitting memorial which we might offer to the memory of the man. Two things come to mind which, for what little they may be worth, I will pass on to you. First, Mr. Miller (as the Sam Moskowitz tribute reminded us), wrote some excellent fiction which was in some respects quite far ahead of its time. Most of those stories are almost unknown to young readers. Perhaps it is time for a P. Schuyler Miller memorial anthology; hopefully in hard cover but if not that at least in paperback. This would seem to me fitting and appropriate since most of his work is now practically unavailable. Odd, isn't it, how many times a man must die before his good work of other days again comes to prominence? The second suggestion I have is the possibility of some sort of award for literary criticism in science fiction to be named after Mr. Miller. That this would be appropriate goes without saying; but also, in a field where good criticism is really rare, this just might inspire some. Of really competent and honest book reviewers we have so very few, and these are seen all too seldom. James Blish has all but stopped reviewing, Poul Anderson's rare venture into the field of review is always brilliant but rare. Lester del Rey, who is taking over The Reference Library, is certainly one of the few good reviewers we have. I am delighted to see someone of his competence taking up the column. Anyway, not to get too far off the original thought, why not an

award for best reviewer or best contribution to criticism in the field? Science Fiction needs more healthy, informed, and competent criticism; and I can think of no one whose name would belong on such an award more than that of P. Schuyler Miller . . .

JAMES S. VELDMAN
3902 West Madison Street
Bellwood, Illinois 60104
Good suggestion. Let's hear some thoughts on how to implement the idea.

Dear Mr. Bova:

Congratulations! I've just finished the first installment of "Lifeboat," one of the best serials you've ever published, far as I can remember. Unfortunately, though, I had the pleasure of reading "The Tax Man" last.

Perhaps I'm just plain stupid, not as intellectual as you people, but I still read and understand good science fiction. Seems to me you stated in an Editorial not too long ago that such things as tax evasion, campus unrest, et cetera, would have contributed to good science fiction ten years ago but not today. Maybe I got lost somewhere or other along the way in Robinett's tale, but what was the main point of his story in Analog?

JAMES W. AYERS
609 First Street
Attalla, Alabama 35954
The point was the complete domination by the government of the citizen; to paraphrase Heinlein—the public servants became the public masters.

Dear Mr. Bova:

With reference to your February Editorial: it may interest your readers that anthropologists, as well as members of many other disciplines, are participating in efforts to avoid such social and ecological disasters as the Sahelian situation.

Working through the Carolina Population Center of the University of North Carolina at Chapel Hill, and funded by a contract with the Agency for International Development, Dr. Steven Plogar of the UNC-CH Anthropology Department has been working for the past several years on the development of population centers of African universities. Such centers will improve the quality of research and teaching in population-related fields, and it is hoped that they will increase the awareness of political leaders in Africa as to the dimensions and possible consequences of the problem of rapid population growth.

Although public attention to the effects of population growth is a recent phenomenon, and public funds for research are limited, behavioral and natural scientists are using "their knowledge to aid us in our political and social decisions."

GLENN A. KNIGHT
Too little, and probably too late.

Dear Mr. Bova:

In your collectivist zeal, you seem to have completely missed the lesson of the green pentagon in the middle of the Sahel. You get an F.

The lesson that sticks out like a sore thumb is the viability of private enterprise versus socialistic

give-away programs. This lesson could not be demonstrated more clearly than by the green pentagon-shaped Garden of Eden in the midst of total disaster.

It does not require a tribe of anthropologists to discover the reason for the failure of the Sahel wells or to avoid such failures in the future. Recognition of one simple rule of human psychology is sufficient.

Government give-away programs such as the Sahel wells or our own welfare boondoggles are almost uniformly disastrous. Unearned gifts are unethical, immoral and degrading.

The donor of charity generally feels great about it. He feels that he is helping someone, that he is doing a good deed. His sense of guilt for other possible misdemeanors is diminished. He feels bigger. He feels a sense of power. He has been part of a cause.

The recipient has different feelings. He has accepted something he did not earn. He feels diminished. He has been made an effect. In order to salvage his beingness he must find some justification for accepting charity. His justification may take many forms, most of them destructive.

He may consider that he owes an obligation to the donor, and decide to repay the gift in some manner. This reaction is unfortunately rare in our "Society is responsible" culture.

He may decide that he is forced to accept charity because he is sick, disadvantaged, uneducated, stupid, or otherwise incapable of earning. This leads to further inability.

He may consider that the government or society owes it to him because he or his group or race have been mistreated in the past or present. This leads to demands for more charity ("reparations"), more justifications, accusations, bitterness, hatred, riots, and murders of members of the donor group.

Unearned charity is very close to stealing. In both cases there is an unbalanced flow, a lack of fair exchange. The recipient gets something for nothing and is thereby diminished and degraded. The donor receives nothing for his gift except a feeling of some kind. The only difference is that a gift is voluntary—except in the case of the taxpayer.

If government must insure security to everyone—a highly debatable proposition—then it should give the only gift that can safely be given—opportunity. Instead of giving people money, give them the opportunity to earn it. Always be certain that something is given in exchange, to enable the recipient to have the proud feeling of having earned his way. Such a government would be loved, not hated.

The error of the Sahel wells was in *giving* them to the people. It has been said that a liberal is a person who will throw a line to a drowning man, then let go of the other end and go off to do another good deed. This is a case in point. If the government had tried to make a paying proposition of the wells (that dirty word, "profit") things might have gone better. If they had fenced in the area and regulated grazing on it, people might not be

starving there now. If they had even charged nominal, "per cow" grazing fees, an entire country might not have been devastated.

The best hope for the salvation of the Sahel now lies in emulating the entrepreneurs who established the pentagon-shaped paradise. Instead of calling in the anthropologists, why not simply use the solution that has been proven to work? Each government involved should invite private enterprise to the rescue. *Sell* the wells and surrounding land, with the stipulation that it will be developed within a specified time. Within a few years there could be a myriad of green pentagons in the Sahel, employing the now starving nomads and providing food for a starving world.

Sure, the nomadic culture would be lost. This no doubt would be a source of grief to many individuals who are afflicted with the "zoo complex." But what is the value of preserving a culture of starving people?

JOHN G. MARSON

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I doubt that the governments of the various Sahel nations own the land, and I doubt that the Sahel peoples feel as if the wells were charity. They don't have the same social upbringing or world view as disgruntled American taxpayers, and I wonder how they'd feel about letting their "culture of starving people" revert back to a European colony?

Dear Mr. Bova:

I've just read your Editorial on overgrazing, starvation, and fences

in the Sahel; and I think you missed the point of that green ranch in the midst of the barrens. The main point was that the fenced off area was *private* property and the overgrazed area was common property. No single individual had anything to gain from practicing conservation on the commonly owned grazing land, but when the institution of private property in land was introduced and enforced, the desert turned green.

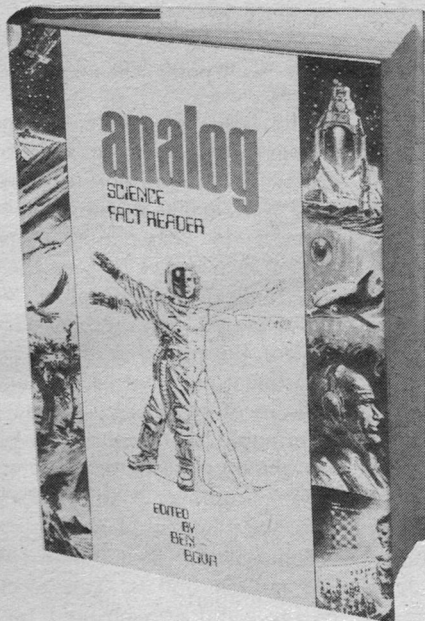
The world has lots of chickens and lots of pigs, but no passenger pigeons, and soon, no whales. The reason is that there have been no enforceable property rights in passenger pigeons or whales. I suspect that the only reason that there are still any migratory water fowl is that governments finally declared wild ducks and geese to be government property and hired game wardens to enforce that property right. The reason that air and water pollution are problems is that there have yet to be devised effective property rights in those areas.

A very strong argument has been made that it was the development and extension of the institution of private property which explains the pace and pattern of economic growth over the last thousand years. Those interested should read D.C. North and R.P. Thomas, *The Rise of the Western World* (Cambridge, 1973).

RICHARD BEAN

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As the Editorial said, cultural lag is the basic problem.



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EDITORIAL *continued from page 8*

quate to the scope of the problem. The amount of money that this nation spends on bubble gum would produce a practical hydrogen system. The amount of funding that goes into spare parts for one type of aircraft turbine engine could probably produce a hydrogen demonstration project that could test out the engineering problems of handling liquid hydrogen over continental pipelines. But that money is not forthcoming.

In Texas, where perhaps you'd least expect it, something valuable *is* being started. Southern Methodist University's Institute of Technology has proposed setting up a floating platform off the Texas coast to use the temperature differential between surface and deep water levels to generate energy. Moreover, the proposal has attracted the interest of the Free People Foundation in Dallas, which is trying to help raise funds for the project.

The Free People Foundation is the creation of Humberto Rodriguez, a Cuban exile who has unbounded faith in what he calls "people's capitalism" and the energy to try to put his ideas into practice. In essence, Rodriguez wants to start a form of economic cooperative program that will concentrate on solving the problems that are not being solved by existing private industry or Government agencies.

The off-shore energy platform is a case in point. None of the power companies appear to be willing to back it; neither will the oil companies.

The basic idea is to set up the platform some 35 miles off the Texas coast, and use a propane heat cycle that is driven by the differences in temperature between the sun-warmed waters of the surface, and the much colder waters of the bottom layer. Preliminary estimates indicate that for a capital investment of about 445 dollars per kilowatt of plant capacity, the platform could be developed to power an aluminum smelting plant. By 1985, according to Rodriguez' figures, the plant could be turning out 550 megawatts, at a capital cost of 245 million dollars. This electrical energy could also be used for dissociating water, to provide hydrogen for fuel (as well as oxygen).

None of this technology is beyond current engineering capabilities. Many people have worked out the propane cycle for utilizing water temperature differences to drive a turbo-electric generator. The technology is there. What is lacking is the money; or rather, the decision to go ahead by those who can provide the funding.

The fundamental problem seems to be the lack of a free marketplace where new technological ideas can find financial backers. And this kind of problem goes much deeper than the energy crisis.

It has become a basic problem in our democracy. There are precious few free marketplaces left, whether they be for oil, automobiles, groceries, steel, electric power, or ideas on how to solve the political, social, and economic problems we face.

Most of the major industries in the US are controlled by a handful of very large corporations. In each industry, the decision by one major corporation to raise prices is immediately followed by a similar price rise among all the others. There is no previously arranged agreement, as such, which means that the Government cannot prosecute the corporations on conspiracy charges. It's simply a case where the corporations can, within very broad lim-

its, set whatever prices they choose, and the consumer will have to pay. When there are only a dozen or fewer producers in a key economic area, such as food, energy, or basic metals, they can regulate prices very effectively without breaking any laws.

Certainly the corporations bend every effort to convince the public that they are helpless to prevent this price rise. They point to adamant Arabs, or clumsy government bureaucracies, and with some justification. But the simple fact is that if the major oil companies began charging a dollar a gallon for gasoline, the consumption of gasoline in the US would hardly decline at all. We are a mobile society. Take away our automobiles and most of

in times to come As a celebration of the upcoming Apollo-Soyuz launching, the first joint Russian-American space project, our August cover will be a painting by Soviet Cosmonaut Andrei Sokolov. Like many astronauts and cosmonauts, Sokolov has been a science fiction fan since childhood. He is also a painter of considerable talent, and his SF illustrations are certainly based on first-hand technical knowledge!

Normally, our cover paintings are commissioned to illustrate a specific story. In this special case, however, we got the painting first. Jerry Pournelle took one look at it and offered to write a story around the picture—which shows a futuristic Earth-to-orbit shuttle ship in flight. The result is "Consort," a tale that fits into the background template of Pournelle's earlier "High Justice" and "Extreme Prejudice."

The *real* possibilities of anti-gravity, time travel, and other "science fictional" ideas are explored in next month's science fact article, "Far Out Physics," by Dr. Robert L. Forward, of the Hughes Research Labs.

And, farther in the future, *DUNE III* is on its way to you.

us cannot get to work, or to the supermarket, the doctor, the shopping center, the church, or even to the playground, in many cases.

The top dozen or two corporations are the real decision-makers in the US. They do more to elect Presidents and Congresspersons than any other individuals or groups. If we don't have MHD generators turning our abundant coal supplies into clean electricity, if we don't have a hydrogen economy moving us away from a reliance on fossil fuels entirely, if that platform does not get built in the Gulf of Mexico, it's because the large corporations want things that way and the people of this nation haven't found a way to make *their* will felt.

The energy crisis shows that we desperately need a free marketplace of ideas, and the strength and foresight to back several contending approaches to new energy technology. The same kind of management and boldness that produced ICBMs in the Fifties and put men on the Moon in the Sixties could turn the energy crisis into an economic bonanza for the United States. But we are more apt to get gasoline at five dollars a gallon before we get that kind of free marketplace.

(You have probably noticed that the question of nuclear power plants was not examined in this Editorial. It will be, in a separate Editorial later this year.)

THE EDITOR

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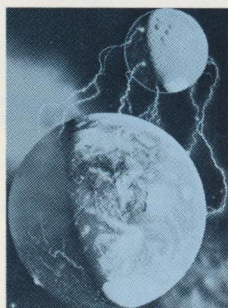
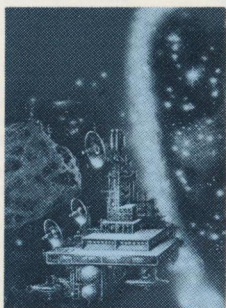
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