NOVEMBER 1965 60¢ MAC

Galaxy

MAGAZINE

SCIENCE FICTION

THE DIRTY OLD MEN OF MAXSEC

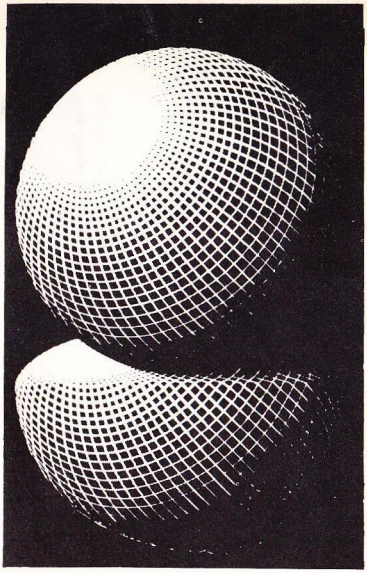
Phyllis Gotlieb

DOWNWARD TO THE EARTH

ROBERT SILVERBERG'S new space age novel of man's first look at himself—in an alien's eye!

PENNIES OFF A DEAD MAN'S EYES

Harlan Ellison



DOUBLE YOUR READING FUN!

The best fiction is science fiction; and the best science fiction appears in GALAXY and IF.

READ

Galaxy
SCIENCE FICTION

Leader in the science-fiction field for almost two decades! Presenting the finest writers: Asimov, Pohl, del Rey, Leiber, Anderson, Herbert Vance, Simak, Dickson, Blish, Silverberg, Ellison, Knight, Harrison, Aldiss, Niven, Clement. Popular monthly columns: *For Your Information*—Willy Ley, *Galaxy Bookshelf*—Algis Budrys.

READ

WORLDS OF if

Three-time winner of the coveted Hugo, science-fiction's Oscar; voted the best sf magazine in the world. IF's regular authors include: Keith "Retief" Laumer, Andre Norton, C. C. MacApp, Mack Reynolds, Roger Zelazny, Samuel R. Delany, Philip José Farmer. Features: *The Reading Room,* controversial book reviews by Lester del Rey. *Hue and Cry* where the readers praise or blast the editors, writers and artists—and where the editors, writers and artists blast back.

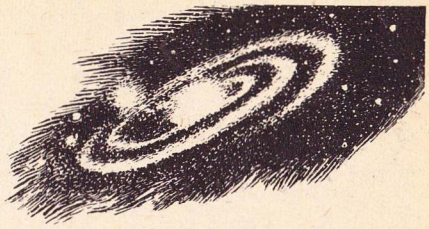
EVERY MONTH

60¢

Galaxy
SCIENCE FICTION

MAGAZINE

ALL STORIES NEW



Galaxy is published in French, German, Italian, Japanese and Spanish. The U. S. Edition is published in Braille and Living Tape.

November, 1969 • **Vol. 129, No. 3**

CONTENTS

NOVELETTES

THE DIRTY OLD MEN OF MAXSEC 53
Phyllis Gotlieb

SERIALS

DOWNWARD TO THE EARTH (Part I) 4
Robert Silverberg

DUNE MESSIAH (Conclusion) 144
Frank Herbert

SHORT STORIES

PENNIES OFF A DEADMAN'S EYES 45
Harlan Ellison

BROKE AND HUNGRY, NO PLACE TO GO 111
Ron Goulart

DEAD END 126
Norman Spinrad

FACT FEATURE

HOW TO KIDNAP A MOON 96
Robert S. Richardson

SCIENCE DEPARTMENT

FOR YOUR INFORMATION 119
Willy Ley

FEATURES

EDITOR'S PAGE 2

GALAXY'S STARS 135

GALAXY BOOKSHELF 136
Algis Budrys

Cover by GAUGHAN, suggested by DOWNWARD TO THE EARTH

GALAXY MAGAZINE is published monthly by Universal Publishing & Distributing Corporation, Arnold E. Abramson, President. Main offices: 235 East 45 Street, New York, N.Y. 10017. 60¢ per copy. 12-issue subscription: $6.00 in the United States, elsewhere $7.00. Second class postage paid at New York, N.Y. and additional mailing offices.

BRAIN POLLUTION

Games people play are endless. And sometimes vicious. One in vogue today fills me with the joyless joy of an idiot among idiots. It's nice to belong but the company is dreadful.

This particular pastime may have been invented by the legendary scientist of another time, place and culture—I had not until this moment been sure he existed.

Don't stop me if you've heard this one—I expect to go on. Our Truth-seeker—with a mind as open and keen as the winds of the world—focused his search on the centipede. Using techniques not lost to the more developed civilizations of today, he established a dialogue of sorts with the creature.

He said loudly, "Jump!"

After countless punishing lessons the centipede learned to jump on command. Communication thus set up, the scientist amputated one of the myriapod's legs after another. Between surgeries he ordered his subject to jump.

The centipede jumped. To the end. Finally footless—save for the two front feet which had evolved into poison fangs—the altered centipede just lay there.

"Jump!" cried the scientist.

The centipede waited.

The dazzled man of learning rushed off to write up his findings. These were widely acclaimed by persons who had never paid much attention to centipedes.

His epochal discovery: When one removes the legs of a centipede the creature loses its hearing. But not its poison fangs.

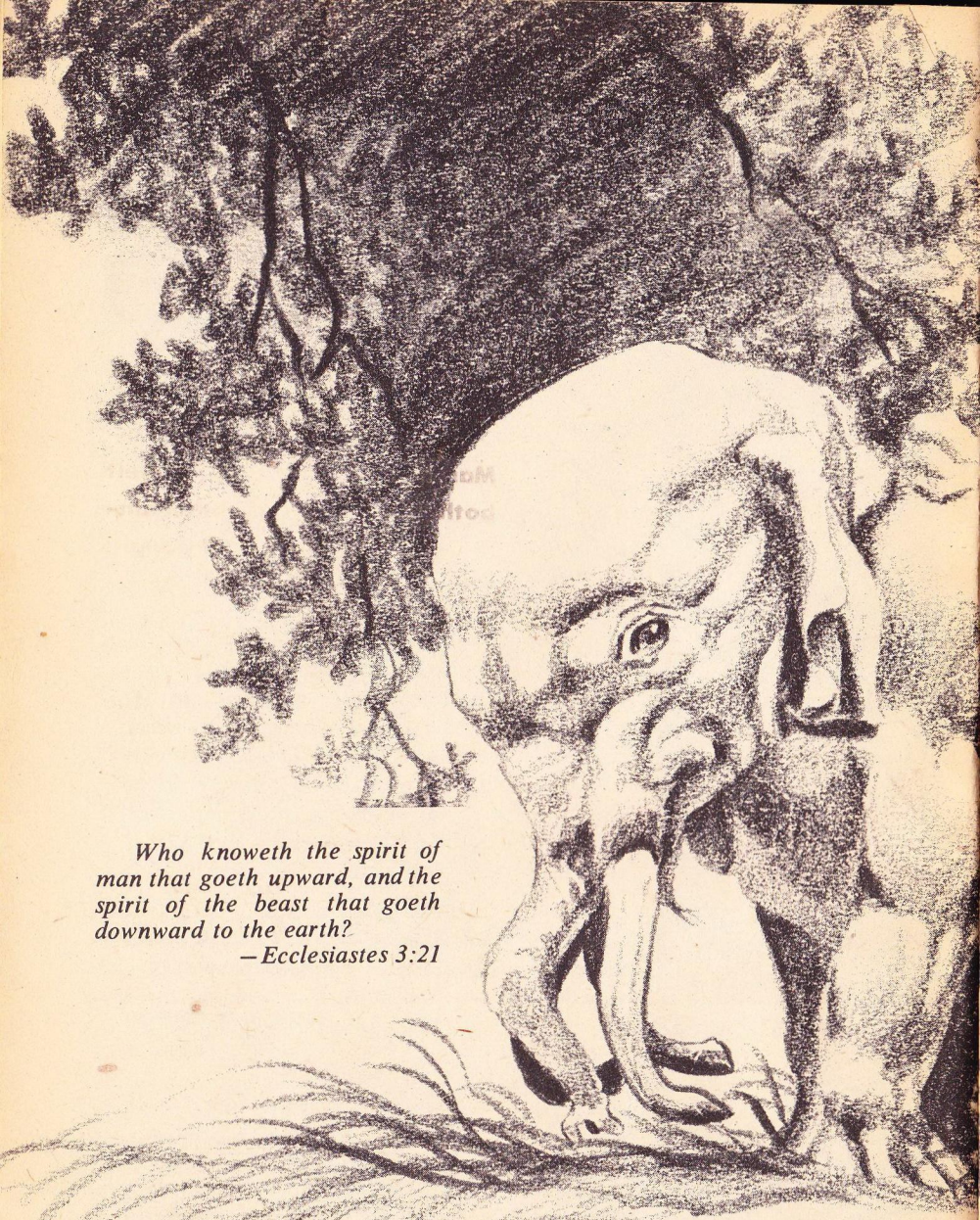
The current version of the game revolves around "scientific" speculation in print about the relative levels of Black and White intelligence as measured by IQ tests. One such dissertation—in a recent issue of *Analog* and by John W. Campbell—argues for a possible "difference" in intelligences, citing the acuity of a porpoise's hearing in water as compared to a man's and continuing:

"If their (the Blacks') basic intelligence pattern is of a different type—naturally it's harder for them to fit into the Scholarly type that Caucasoids developed—with unquestionable and world-shaking success—so that although they've been working into Western culture for as long a time as the Scots, they haven't been able to fit in anywhere near as well. Sort of porpoise out of water effect."

If I were a porpoise—right now I would begin to worry. Not as much about whether a difference existed between Black and White intelligence as about whether no difference whatsoever existed.

I would examine the alterations in my oceanic environment

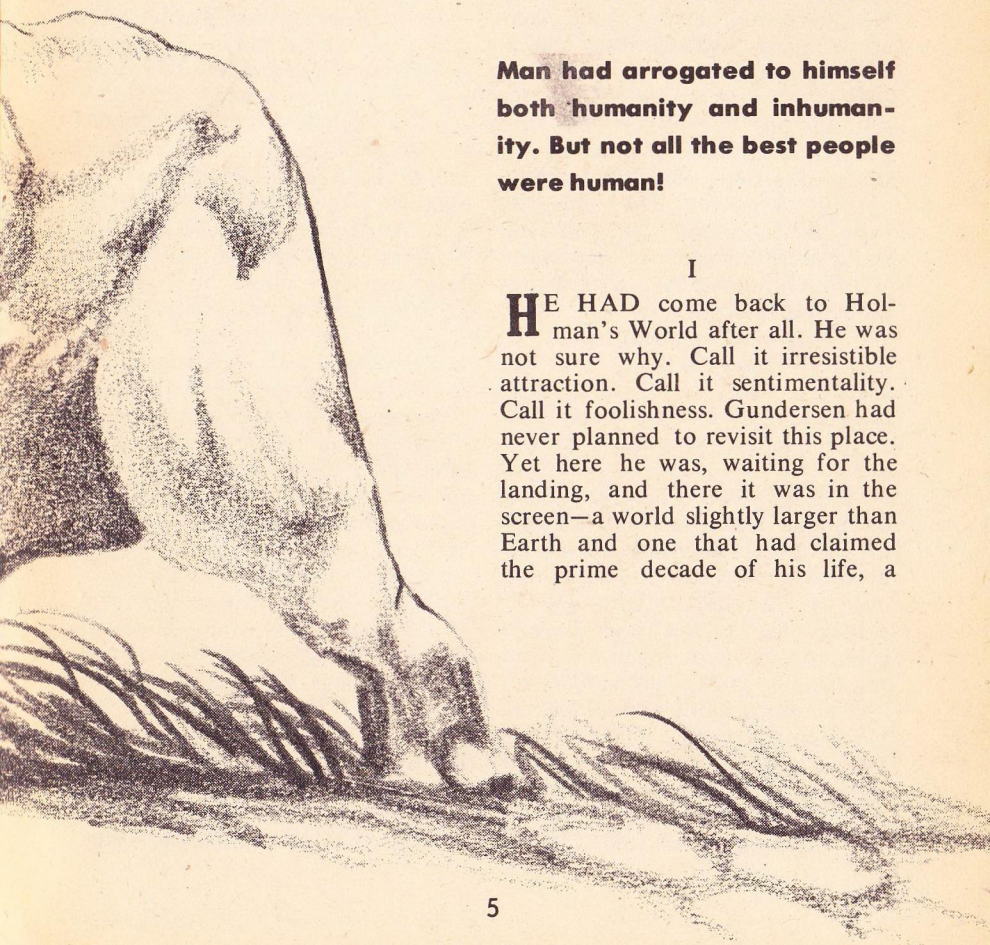
(Please turn to page 143)



Who knoweth the spirit of man that goeth upward, and the spirit of the beast that goeth downward to the earth?
—Ecclesiastes 3:21

DOWNWARD TO THE EARTH

ROBERT SILVERBERG



Man had arrogated to himself both humanity and inhumanity. But not all the best people were human!

I

HE HAD come back to Holman's World after all. He was not sure why. Call it irresistible attraction. Call it sentimentality. Call it foolishness. Gundersen had never planned to revisit this place. Yet here he was, waiting for the landing, and there it was in the screen—a world slightly larger than Earth and one that had claimed the prime decade of his life, a

world where he had learned things about himself that he had not really wanted to know. The ship would shortly land. Despite everything, he was coming back.

He saw the shroud of mist that covered the temperate zones, the girdling blue-black band of the scorched tropics, the great sprawling icecaps. He remembered riding through the Sea of Dust at blazing twilight. He remembered a silent, bleak river journey beneath bowers of twittering dagger-pointed leaves. And he remembered golden cocktails on the veranda of a jungle station on the Night of Five Moons, with Seena close by his side and a herd of nildoror mooing in the bush. The memories were of long ago. The nildoror again were masters of Holman's World. Gundersen had a hard time accepting that.

"Attention, passengers in the lounge," came a voice over the speaker. "We enter landing orbit for Belzagor in fifteen minutes. Please prepare to return to cradles."

Belzagor was what they called the planet now. The native name, the nildoror's own word. To Gundersen it seemed like something out of Assyrian mythology. Of course, the pilot's had been a romanticized pronunciation. Coming from a nildor the word would really sound more like *Bllls' grrr.* He would try to call the planet by the name it now wore. He attempted never to give needless offense to alien beings.

"Belzagor," he said. "It's a voluptuous sound, isn't it? Rolls nicely off the tongue."

The tourist couple beside him in the ship's lounge nodded. They agreed readily with whatever Gundersen said.

The husband, plump, pale, overdressed, said, "They were still calling it Holman's World when you were last out here, weren't they?"

"Oh, yes," Gundersen said. "But that was back in the good old imperialist days when an Earthman could call a planet whatever he damn pleased."

The tourist wife's lips tightened in that thin, pinched, dysmenorrhean way of hers. Gundersen drew a somber pleasure from annoying her. All during the voyage he had deliberately played a role out of Kipling for these tourists—the former colonial administrator going out to see what a beastly botch the natives must be making out of the task of governing themselves. The pose was an exaggeration, a distortion, of his real attitude but sometimes it pleased him to wear masks. The tourists—there were eight of them—looked upon him in mingled awe and contempt as he swaggered among them, a big fair-skinned man with the mark of outworld experience stamped on his features. They disapproved of him, of the image of himself that he gave them. Yet they knew he had suffered, labored and striven under a foreign sun and they saw romance in that.

"Will you be staying at the hotel?" the tourist husband asked.

"Oh, no. I'm going right out into the bush, toward the mist country. Look—there, you see? In the northern hemisphere, that band of clouds midway up. The temperature gradient's very steep—tropic and arctic practically side by side. Mist. Fog. They'll take you on a tour of it. I have some business in there."

"Business? I thought these new independent worlds were outside the zone of economic penetration that—"

"Not commercial business," Gundersen said, "Personal business. Unfinished business. Something I didn't manage to discover during my tour of duty here." The signal light flashed again, more insistently. "Will you excuse me? We really should cradle up now."

He went to his cabin and readied himself for landing. Webfoam spurted from the spinnerets and enfolded him. He felt deceleration thrust, that curiously archaic sensation hearkening back to space-travel's earliest days. The ship dropped planetward as Gundersen swayed, suspended.

BELZAGOR'S only spaceport was one Earthmen had built more than a hundred years before. It was in the tropics, at the mouth of the great river flowing into Belzagor's single ocean. Madden's River, Benjamini Ocean—Gundersen did not know the nildoror names for either. The spaceport was self-maintaining, fortunately. Automatic high-redundancy devices operated the landing beacon. Homeostatic surveillance kept the pad repaved and the bordering jungle cropped back. All done by machine—it was unrealistic to expect the nildoror to operate a spaceport and impossible to keep a crew of Earthmen stationed here. Gundersen understood that perhaps a hundred Earthmen were still living on Belzagor—even after the general withdrawal—but they were not such as would operate a spaceport. And there was a treaty, in any case. Administrative functions were to be carried out by nildoror or not at all.

They landed. They left the ship.

The air had the tropical reek of rich loam, rotting leaves, droppings of jungle beasts, an aroma of creamy flowers. The time was early evening. A couple of the moons were out. As always, the threat of rain hung in the air—the humidity was 99%, probably—but that threat almost never materialized. Rainstorms were rare in this tropical belt. The water simply precipitated out of the air in droplets all the time, imperceptibly, coating you with fine wet beads. Gundersen saw lightning flicker beyond the tops of the hullygully trees at the edge of the pad. A stewardless marshaled the nine debarkees.

"This way, please," she said crisply and led them toward the one building.

On the left three nildoror emerged from the bush and solemnly gazed at the newcomers. Tourists gasped and pointed.

"Look. Do you see them? Like elephants, they are. Are those nili—nildoror?"

"Nildoror, yes," Gundersen said. The tang of the big beasts drifted across the clearing. A bull and two cows, he guessed, judging by the size of the tusks. They were all about the same height, three meters plus, with the deep green skins that marked them as western-hemisphere nildoror. Eyes as big as platters peered back at him in dim curiosity. The short-tusked cow in front lifted her tail and placidly dropped an avalanche of steaming, purple dung. Gundersen heard deep, blurred sounds but at this distance he could not make out what the nildoror were saying.

Imagine them running a spaceport—imagine them running a planet. But they do . . .

No living beings crewed the spaceport building. Some robots, part of the homeostasis net, were repairing the wall at the far side, where the gray plastic sheeting had apparently succumbed to spore implantation. Sooner or later the jungle rot got everything in this part of the planet. But that was the only visible activity. There was no customs desk. The nildoror did not have a bureaucracy of that sort. They did not care what you brought with you to their world.

There was also no spaceline office here, nor were there money-changing booths nor newsstands nor any of the other concessions one normally found in a spaceport. There was only a big bare shed, which once had been the nexus of a bustling colonial outpost, in the days when Holman's World had been the property of Earth. It seemed to Gundersen that he saw ghosts of those days all about him—figures in tropical khaki carrying messages, supercargoes waving inventory sheets, computer technicians draped in festoons of memory beads, nildoror bearers laden with outgoing produce. Now all was still. The scrapings of the repair robots echoed across the emptiness.

The spaceline stewardess was telling the eight tourists, "Your guide should be here any minute. He'll take you to the hotel and—"

Gundersen was supposed to go to the hotel, too, just for tonight. In the morning he hoped to arrange for transport. He had no formal plans for his northward journey. It was going to be largely an improvisation, a reconnaissance into his own pockmarked past.

He said to the stewardess, "Is the guide a nildor?"

"You mean, native? Oh, no, he's an Earthman, Mr. Gundersen." She rummaged in a sheaf of printout slips. "His name's Van Beneker, and he was supposed to be here at least half an hour before the ship landed. I don't understand why—"

"Van Beneker was never strong on punctuality," Gundersen said. "But there he is."

A beetle, much rusted and stained by the climate, had pulled up at the open entrance to the building. From it now emerged

a short, red-haired man, also much rusted and stained by the climate. He wore rumpled fatigues and a pair of knee-high jungle boots. His hair was thinning and his tanned bald skull showed through the slicked-down strands. He entered the building and peered around, blinking.

"Van?" Gundersen said. "Over here, Van."

The little man came over. In a hurried, perfunctory way he said, while he was still far from them, "I want to welcome all you people to Belzagor, as Holman's World is now known. My name's Van Beneker and I'm going to show you as much of this fascinating planet as is legally permissible and—"

"Hello, Van," Gundersen cut in.

The guide halted, obviously irritated, in mid-spiel. He blinked again and looked closely at Gundersen.

Finally he said, clearly not believing his eyes, "Mr. Gundersen?"

"Just Gundersen. I'm not your boss any more."

"Jesus, Mr. Gundersen. Jesus, are you here for the tour?"

"Not exactly. I'm here to take my own tour."

VAN BENEKER said to the others, "I want you to excuse me. Just for a minute." To the spaceline stewardess he said, "It's okay. You can officially convey them to me. I take responsibility. They all here? One, two, three—eight. That's right. Okay, the luggage goes out there, next to the beetle. Tell them all to wait. I'll be right with them." He tugged at Gundersen's elbow. "Come on over here, Mr. Gundersen. You don't know how amazed I am. Jesus!"

"How have you been, Van?"

"Lousy. How else, on this planet? When did you leave, exactly?"

"Twenty-two forty. The year after relinquishment. Eight years ago."

"Eight years. And what have you been doing?"

"The home office found work for me," Gundersen said. "I keep busy. Now I've got a year's accumulated leave."

"To spend here?"

"Why not?"

"What for?"

"I'm going up mist country," Gundersen said. "I want to visit the sulidoror."

"You don't want to do that," said Van Beneker. "Rather—why do you want to do that?"

"To satisfy a curiosity."

"There's only trouble when a man goes up there. You know the stories, Mr. Gundersen. I don't need to remind you of how many guys went up there, how many didn't come back." Van Beneker laughed. "You didn't come all the way to this place just to rub noses with the sulidoror. I bet you got some other reason."

Gundersen let the point pass.

"What do you do here now, Van?"

"Tourist guide, mostly. I take them up along the ocean, then show them a bit of the mist country. Next we hop across to the Sea of Dust. It's a nice little tour."

"Yes."

"The rest of the time I relax. I talk to the nildoror a lot and sometimes I visit friends at the bush stations. You'll know everyone, Mr. Gundersen. It's all the old people—what's still out there."

"What about Seena Royce?" Gundersen asked.

"She's up by Shangri-la Falls."

"Still have her looks?"

"She thinks so," Van Beneker said. "You figure you'll go up that way?"

"Of course," Gundersen said. "I'm making a sentimental pilgrimage. I'll tour all the bush stations. See the old friends. Seena. Cullen. Kurtz. Salamone. Whoever's still there."

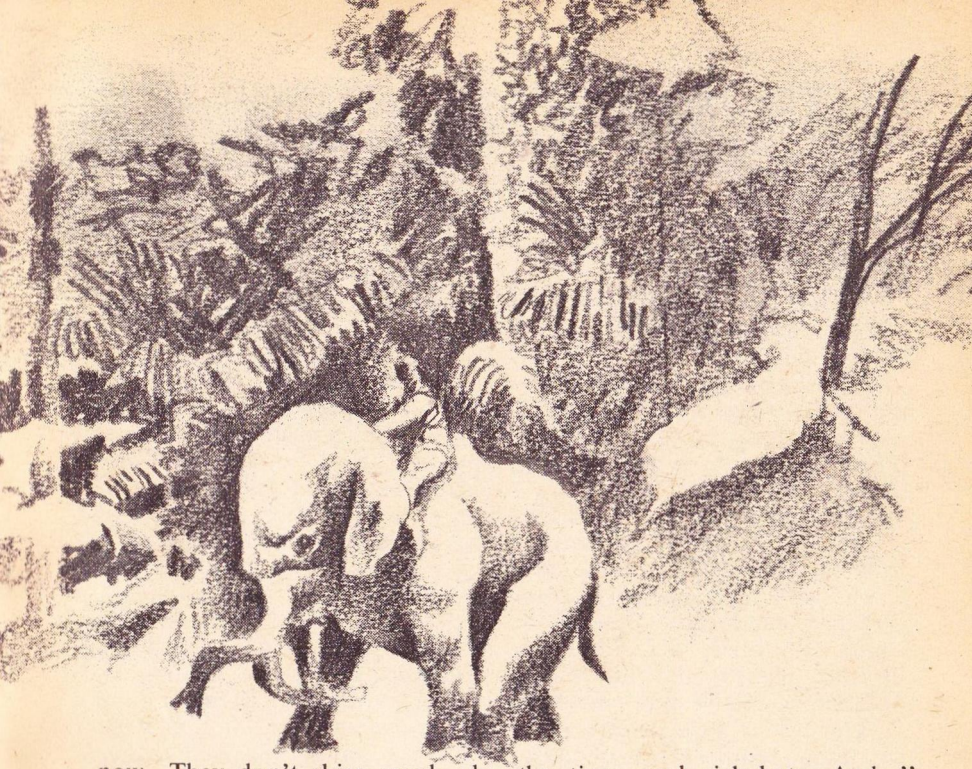
"Some of them are dead."

"Whoever's still there," Gundersen said. He looked down at the little man and smiled. "You'd better take care of your tourists now. We can talk at the hotel tonight. I want you to fill me in on everything that's happened while I've been gone."

"Easy, Mr. Gundersen. I can do it right now in one word. Rot. Everything's rotting. Look at the spaceport wall over there."

"I see."

"Look at the repair robots



now. They don't shine much, do they? They're giving out, too. If you get close you can see the spots on their hulls."

"But homeostasis—"

"Sure, Everything gets fixed, even the repair robots. But the system's going to break down. Sooner or later the rot will get into the basic programs and there won't be any more repairs. And this world will go straight back into the stone age. And the nildoror will finally be happy. I understand those big bastards as much as anybody does. I know they can't wait to see the last trace of Earthmen rot right off this planet. They pretend they're friendly but the hate's there all the time, real sick hate. And—"

"You ought to look after your tourists, Van," Gundersen said. "They're getting restless."

II

A CARAVAN of nildoror was going to transport them from the spaceport to the hotel—two Earthmen per alien, with Gundersen riding alone and Van Beneker with the luggage, leading the way in his beetle. The three nildoror grazing at the edge of the field ambled over to enroll in the caravan and two others emerged from the bush. Gundersen was surprised that nildoror were still willing to be beasts of burden for Earthmen.

"They don't mind," Van Beneker explained. "They like to do us favors. It makes them feel superior. They can't hardly tell there's weight on them, anyhow. And they don't think there's anything shameful about letting people ride them."

"When I was here I had the impression they resented it," Gundersen said.

"Since relinquishment they take things like that easier. Anyway, how could you be sure what they thought? I mean, what they really thought."

The tourists were a bit alarmed at riding nildoror. Van Beneker tried to calm them by telling them it was an important part of the Belzagor experience. Besides, he added, machinery did not thrive on this planet and hardly any functioning beetles were left.

Gundersen demonstrated how to mount, for the benefit of the apprehensive newcomers. He tapped his nildoror's left tusk. The alien kneeled in its elephantine way, ponderously coming down on its front knees, then its back ones. The nildor wriggled its shoulders, in effect dislocating them to create the deep swayback valley in which a man could ride comfortably. Gundersen climbed aboard, seizing the short backward-thrusting horns as his pommels.

The spiny crest down the middle of the alien's broad skull began to twitch. Gundersen recognized it as a gesture of welcome. The nildoror had a rich language of gesture, employing not only the spines but also their long ropy trunks and their many-pleated ears.

"Sssukh!" Gundersen said, and the nildor arose.

"Do you sit well?" it asked him in its own language.

"Very well indeed," Gundersen said, feeling a surge of delight as the unforgotten vocabularly came to his lips.

In their clumsy, hesistant way, the eight tourists did as he had done. The caravan set out down the river road toward the hotel. Nightflies cast a dim glow under the canopy of trees. A third moon was in the sky and the mingled lights came through the leaves, revealing the oily, fast-moving river just to their left. Gundersen stationed himself at the rear of the procession in case one of the tourists had a mishap. There was only one uneasy moment, though, when a nildoror paused and left the ranks. It rammed the triple prongs of its tusks into the riverbank to grub up some morsel, then resumed its place in line. In the old days, Gundersen knew, the incident would never have occurred. Nildor were not permitted then to have whims.

He enjoyed the ride. The jouncing strides were agreeable and the pace was swift without being strenuous for the passengers. What good beasts the nildoror were, Gundersen thought. Strong, docile, intelligent. He caught himself short.

The nildoror are something other than funny-looking elephants.

They are intelligent beings, the dominant life forms of their planet. People. And don't you forget it . . .

Soon Gundersen could hear the crashing of the surf. They were nearing the hotel.

The path widened to become a clearing. One of the tourist women pointed into the bush. Her husband shrugged and shook his head.

Black shapes crouched between the trees. They were barely visible in the shadows. Two of the dim forms emerged and stood by the edge of the path as Gundersen's nildor went past. They were husky bipeds, close to three meters tall, covered with thick coats of dark red hair. Massive tails swished slowly through the greenish gloom. Hooded eyes, slit-wide even in this scant light, appraised the procession. Drooping rubbery snouts, tapir-long, sniffed audibly.

A woman turned gingerly to ask Gundersen, "What are they?"

"Sulidoror. The secondary species. They come from up mist country. These are northern ones."

"Are they dangerous?"

"I wouldn't call them that."

"Why are they down here if they're northern animals?" her husband wanted to know.

"I'm not sure," Gundersen said. He questioned his mount and received an answer. "They work at the hotel," Gundersen called ahead. "Bellhops. Kitchen hands."

It seemed strange to him that the nildoror would have turned

THE PUSSYFOOT, which, as he neatly points out, is thoroughly realistic. And along with this remarkable novel, the reissue of six earlier Frederik Pohl works—gems all: DRUNKARD'S WALK, SLAVE SHIP, A PLAGUE OF PYTHONS, TOMORROW TIMES SEVEN, TURN LEFT AT THURSDAY, and THE ABOMINABLE EARTHMAN. And still at 75¢ each.

•

FOR ARBOREAL types, we have six TARZANS (numbers 7 through 10 with the new Foster covers) at an incredible 50¢ each.

•

OCTOBER'S special kook book for intelligentsia is FRITZ THE CAT—the hot cartoons of Robert Crumb ($2.95—a gift book, but not for kiddies or old ladies of either sex). Then there is Curt Gentry's LAST DAYS OF THE LATE, GREAT STATE OF CALIFORNIA—95¢

•

MORE ABOUT October's books in the November issue. Watch for it. And watch out for BB's. And any you can't find on the stands—send in dollars to 36 West 20th Street, New York 10003. BB.

the sulidoror into domestic servants at an Earthman's hotel. Not even before relinquishment had sulidoror been used as servants. But of course there had been plenty of robots here then.

THE hotel lay just ahead. It was on the coast, a glistening geodesic dome that showed no external signs of decay. Before relinquishment it had been a posh resort run exclusively for the benefit of the top-level administrators of the Company.

Three sulidoror stood at the hotel entrance. Van Beneker gestured fiercely at them and they began to take the luggage from the beetle's storage hold.

Inside, Gundersen quickly detected symptoms of decline. A carpet of tiger moss had begun to edge out of an ornamental garden strip along the lobby wall. It was starting to reach onto the fine black slabs of the main hall's floor—he saw the toothy little mouths hopefully snapping as he walked in. No doubt the hotel's maintenance robots once had been programed to cut the ornamental moss back to the border of the garden bed. The program must have subtly altered with the years so that now the moss was allowed to intrude on the interior of the building as well. He saw other signs that control was slipping away

A towering sulidor conducted Gundersen to a third-floor room overlooking the sea. It seemed to Gundersen that there was a sup-

pressed tension about the sulidor, an inward seething, but perhaps it existed only in his own imagination. In the old days sulidoror had rarely been seen outside the zone of mist. Gundersen did not feel at ease with them.

In nildoror words he asked, "How long have you been at the hotel?"

The sulidor did not respond. Gundersen did not know the language of the sulidoror but he was aware that every sulidor was supposed to speak fluent nildororu as well as sulidororu. Enunciating more clearly, he repeated his question. The sulidor scratched its pelt with gleaming claws, said nothing. Moving past Gundersen, it deopaqued the window wall, adjusted the atmospheric filters and stalked solemnly out.

Gundersen frowned. He unpacked and donned evening clothes, a close gray tunic, polished boots, a mirror for his brow. He toned the color of his hair down the spectrum a short distance, dimming it from yellow almost to auburn.

Suddenly he felt very tired. He was barely into early middle years—touching 48—and travel ordinarily did not affect him. Why this fatigue, then? He realized that he had been holding himself unusually stiffly these few hours he had been back on this planet. He had been rigid, inflexible, tense—uncertain of his motives in returning, unsure of his welcome, perhaps touched a bit by curdled guilts, and now the strain was

This one has to do with the further adventures of Tarl Cabot among the Wagon People—fierce, nomadic tribes who guard the last egg of the Priest-Kings. The title is NOMADS OF GOR. At 75¢ a rare bargain. Finally a magnificent second novel from Richard Meredith (remember THE SKY IS FULL OF SHIPS?) This one is titled WE ALL DIED AT BREAKAWAY STATION. Words to describe it could be tense, gallant, heartbreaking. It's enough to make one a hawk (of the far future) but we are proud to publish it anyway.

•

SO NEXT MONTH is December already. We subscribe to the annual madness to the extent of suggesting you give books, books, books. All kinds. But remember particularly our beautiful gift book series which offers a really easy way out for everyone but the kids. Don't let them get their grubby fingers on these jewels. Or else buy two of each and let the little ones cut up one to make their own murals. With which ghastly thought on childcare, we close.

•

AND IF YOU want to order by mail —the address is 36 West 20th Street, New York 10003. **BB.**

telling. He touched a switch and made the wall a mirror. Yes, his face was drawn. The cheekbones, always prominent, jutted like blades. The lips were clamped, the forehead was furrowed. The thin line of his nose was distended by tension-flared nostrils. Gundersen shut his eyes and went through one of the drills of a relaxation mode. He looked better thirty seconds later but a drink might help, he decided. He went down to the lounge.

None of the tourists had shown as yet. The louvers were open and he heard the roar and crash of the sea, smelled its saltiness. A curdled white line of accumulated salt had been allowed to form along the margin of the beach. Gundersen looked out over the moons' light streaked water. He stared into the blackness of the eastern horizon.

Three moons had also been up on his last night here—he had been given a farewell party. He and Seena had gone for a midnight swim, out to the tide-hidden shoal where they could barely stand. They had returned to shore naked and salt-encrusted and he had made love to her behind the rocks, embracing her for what he was sure would be the last time. And now he was back.

He felt a stab of nostalgia so powerful that he winced.

Gundersen had been thirty years old when he had come out to Holman's World as an assistant station agent. He had been forty—and a sector administrator—when

he left. In a sense the first thirty years of his life had been a pale prelude to that decade and the last eight years had been a hollow epilogue. He had lived his life on this single continent, bounded by mist and ice to the north, mist and ice to the south, the Benjamini Ocean to the east, the Sea of Dust to the west. For a while he had ruled half a world, at least in the absence of the chief resident—and this planet had shrugged him off as though he had never been.

Gundersen turned away from the louvers and sat down.

VAN BENEKER appeared, still in his sweaty, rumpled fatigues. He winked cordially at Gundersen and began to rummage in a cabinet.

"I'm the bartender, too, Mr. G. What can I get you?"

"Alcohol," Gundersen said. "Any form you recommend."

"Snout or flask?"

"Flask. I like the taste."

"As you say. But snout for me. It's the effect, sir, the effect."

He set an empty glass before Gundersen and handed him a flask. The flask was equipped with its own condensation chiller; Gundersen thumbed it with a quick short push and quietly watched the flakes of ice beginning to form along the inside. When his drink was properly chilled he poured it and put it quickly to his lips.

"That's pre-relinquishment stock," Van Beneker said. "Not much of it left but I knew you'd appreciate it." He was holding an ultrasonic tube to his left forearm. A buzzing sound and the snout spurted alcohol straight into his vein. Van Beneker grinned. "Works faster this way. The working-man's boozer. Eh? Get you another rum, Mr. G.?"

"Not just yet. Better look after your tourists, Van."

The tourist couples were beginning to enter the bar. First came the Watsons, then the Mirafloreses, the Steins, finally the Christophers. Evidently they had expected to find the bar throbbing with life, full of other tourists giddily hailing one another from distant parts of the room and red-jacketed waiters ferrying drinks. Instead they saw peeling plastic walls, empty tables and that unpleasant Mr. Gundersen moodily peering into a glass. The tourists exchanged cheated glances. Was this what they had spanned the light-years to see? Van Beneker went to them, offering drinks, weeds, whatever else of the limited resources of the hotel he might be able to supply. They settled in two groups near the windows and began to talk in low voices, plainly self-conscious in front of Gundersen. Surely they felt foolish in their roles, these soft well-to-do people whose boredom had driven them to peer at the remote reaches of the galaxy. Stein ran a helix parlor in California, Mireflores a chain of lunar casinos, Watson was a doctor, and Christopher—Gundersen could not remember what Christopher did. Something in the financial world.

Mrs. Stein said, "There are some of those animals on the beach. The green elephants."

Everyone looked. Gundersen signaled for another drink and got it. Van Beneker, flushed, sweating, winked again and put a second snout to his arm. The tourists began to titter.

Mrs. Christopher said, "Don't they have any shame at all?"

"Maybe they're simply playing, Ethel," Watson said.

"Playing? Well, if you call that playing—"

Gundersen leaned forward, glancing through the window without getting up. On the beach a pair of nildoror were coupling, the cow kneeling where the salt was thickest, the bull mounting her, gripping her shoulders, pressing his central tusk down firmly against the spiny crest of her skull, jockeying his hindquarters about as he made ready for the consummating thrust. The tourists, giggling, making heavy-handed comments of appreciation, seemed both shocked and titillated. To his considerable surprise Gundersen realized that he was shocked, too, although coupling nildoror were nothing new to him. When a ferocious orgasmic bellowing rose from below he glanced away, embarrassed and not understanding why.

"You look upset," Van Beneker said.

"They didn't have to do that here."

"Why not? They do it all over the place. You know how it is."

"They deliberately went out there," Gundersen muttered. "To show off for the tourists? Or to annoy the tourists? They shouldn't be reacting to the tourists at all. What are they trying to prove? That they're just animals, I suppose."

"You don't understand the nildoror, Gundy."

Gundersen looked up, startled as much by Van Beneker's words as by the sudden descent from "Mr. Gundersen" to "Gundy." Van Beneker seemed startled, too, blinking rapidly and tugging at a stray sparse lock of fading hair.

"I don't?" Gundersen asked. "After spending ten years here?"

"Begging pardon—but I never did think you understood them, even when you were here. I used to go around with you a lot to the villages when I was clerking for you. I watched you."

"In what way do you think I failed to understand them, Van?"

"You despised them. You thought of them as animals."

"That isn't so."

"Sure it is, Gundy. You never once admitted they had any intelligence at all."

"That's absolutely untrue," Gundersen said. He got up and took a new flask of rum from the cabinet, and returned to the table. "You're talking a load of nonsense, Van. I did everything possible for those people. To improve them, to lift them toward civilization. I requisitioned tapes for them, sound pods, culture by the ton. I put through new regulations

about maximum labor. I insisted that my men respect their rights as the dominant indigenous culture. I—"

"You treated them as you might very intelligent animals. Not like intelligent alien people. Maybe you didn't realize the truth about your attitude, Gundy, but I did. And God knows they did. You talked down to them. You were kind to them in the wrong way. All your interest in uplifting them, in improving them—crap, Gundy, they have their own culture. They didn't want yours."

"It was my duty to guide them," Gundersen said stiffly. "Futile though it was to think that a bunch of animals who don't have a written language, who don't—"

He stopped, horrified.

"Animals," Van Beneker said. "I'm tired. Maybe I've had too much to drink. It just slipped out."

"Animals."

"Stop pushing me, Van. I did the best I could and if what I was doing was wrong, I'm sorry. I tried to do what was right." Gundersen pushed his empty glass forward. "Get me another, will you?"

Van Beneker fetched the drink and one more snout for himself.

A SULIDOR entered the bar and began to gather the empties, crouching to keep from grazing the Earthman-scaled ceiling. The chatter of the tourists died away as the fierce-looking creature moved through the room. Gundersen glared toward the beach. The nildoror were gone. One of the moons was setting in the east, leaving a fiery track across the surging water. He realized that he had forgotten the names of the moons. No matter—the old Earthman names were dead history now.

He asked Van Beneker finally, "How come you decided to stay here after relinquishment?"

"I felt at home here. I've been here twenty-five years. Why should I go anywhere else?"

"No family ties?"

"No. And it's comfortable here. I get a Company pension. I get tips from the tourists. There's a salary from the hotel. That's enough to keep me supplied with what I need. What I need mostly is snouts. Why should I leave?"

"Who owns the hotel?"

"The confederation of western-continent nildoror. The Company gave it to them."

"And the nildoror pay you a salary? I thought they were outside the galactic money economy."

"They are. They arranged something with the Company."

"What you're saying is that the Company still runs this hotel."

"If anybody can be said to run it—the Company does, yes," Van Beneker agreed. "But that isn't much of a violation of the relinquishment law. There's only one employee. Me. I pocket my salary from what the tourists pay for accommodations. The rest I spend on imports from the money sphere. Don't you see, Gundy, it's

all just a big joke? It's a routine designed to allow me to bring in liquor, that's all. This hotel isn't a commercial proposition. The Company is really out of this planet. Completely."

"All right. All right. I believe you."

Van Beneker said, "What are you looking for in mist country?"

"You really want to know?"

"It passes the time to ask questions."

"I want to watch the rebirth ceremony. I never saw it, all the time I was here."

The bulging blue eyes seemed to bulge even more.

"Why can't you be serious, Gundy?"

"I am."

"It's dangerous to fool with the rebirth thing."

"I'm prepared for the risks."

"You ought to talk to some people here about it, first. It's not a thing for us to meddle in."

Gundersen sighed.

"Have you seen it?"

"No. Never. Never even been interested in seeing it. Whatever the hell the sulidoror do in the mountains, let them do it without me. I'll tell you who to talk to, though. Seena Royce."

"She's watched the rebirth?"

"Her husband has."

Gundersen felt a spasm of dismay.

"Who's her husband?"

"Jeff Kurtz. You didn't know?"

"I'll be damned," Gundersen murmured.

"You wonder what she saw in him, eh?"

"I wonder that she could bring herself to live with a man like that. You talk about my attitude toward the natives. There's someone who treated them like his own property and—"

"Talk to Seena up at Shangrila Falls about the rebirth." Van Beneker laughed. "You're playing games with me, aren't you? You know I'm drunk and you're having a little fun."

"No. Not at all." Gundersen rose uneasily. "I ought to get some sleep now."

Van Beneker followed him to the door. Just as Gundersen went out, the little man leaned close to him.

"You know, Gundy, what the nildoror were doing on the beach before—they weren't doing that for the tourists. They were doing it for you. It's the kind of sense of humor they have. Good night, Gundy."

III

GUNDERSEN awoke early. The hour was just a little after dawn. The green-tinged sun hung low in the sky. He went down to the beach for a swim. A soft south wind was blowing, pushing a few clouds into view. The hully-gully trees were heavy with fruit. The humidity was as high as ever. Thunder boomed back from the mountains that ran in an arc paralleling the coast a day's drive inland. Mounds of nildoror dung were all over the beach. Gunder-

sen stepped warily, zigzagging over the crunching sand and hurling himself flat into the surf. He went under the first curling row of breakers and with quick powerful strokes headed toward the shoals. The tide was low. He crossed the exposed sandbar and swam beyond it until he felt himself tiring, then returned to the shore area.

A sullen sulidor served breakfast. Native fruits, native fish. Gundersen's appetite was immense. He bolted down three golden-green bitterfruits for a start, then expertly boned a whole spiderfish and forked the sweet pink flesh into himself as though engaged in a speed contest. The sulidor brought him another fish and a bowl of phallic-looking forest candles. Gundersen still was working on these when Van Beneker entered. He looked blood-shot and chastened.

"Sit with me, Van," Gundersen said.

Uncomfortably, Van Beneker complied.

"About last night—"

"Forget it."

"I was insufferable, Mr. Gundersen."

"You were in your cups. Forgiven. In vino veritas. You were calling me Gundy last night, too. You may as well do it this morning. Who catches the fish?"

"There's an automatic weir just north of the hotel. Catches them and pipes them right into the kitchen. God knows who'd prepare food here if we didn't have the machines."

"And who picks the fruit? Machines?"

"The sulidoror do that," Van Beneker said.

"When did sulidoror start working as menials on this planet?"

"About five years ago. Six, maybe. The nildoror got the idea from us, I suppose. If we could turn them into bearers and living bulldozers, they could turn the sulidoror into bellhops. After all, the sulidoror are the inferior species."

"But always their own masters. Why did they agree to serve? What's in it for them?"

"I don't know," Van Beneker said. "When did anybody ever understand the sulidoror?"

Good question, Gundersen thought. No one as yet had succeeded in making sense out of the relationship between this planet's two intelligent species. The presence of two intelligent species, in the first place, went against the general evolutionary logic of the universe. Both nildoror and sulidoror qualified for autonomous ranking, with perception levels beyond those of the higher hominoid primates. A sulidor was considerably smarter than a chimpanzee and a nildor was a good deal more clever than that. If there had been no nildoror here at all, the presence of the sulidoror alone would have been enough to force the Company to relinquish possession of the planet when the decolonialization movement reached its peak. But why two species—

and why the strange unspoken accommodation between them, the bipedal carnivorous sulidoror ruling over the mist country, the quadrupedal herbivorous nildoror dominating the tropics? How had they carved this world up so neatly? And why was the division of authority breaking down, if breaking down was really what was happening? Gundersen knew that there were ancient treaties between these creatures, that a system of claims and prerogatives existed, that every nildor went back to the mist country when the time for its rebirth arrived. But he did not know what role the sulidoror really played in the life and rebirth of the nildoror.

The pull of that mystery was, he admitted, one of the things that had brought him back to Holman's World, to Belzagor, now that he had shed his administrative responsibilities and was free to risk his life indulging private curiosities. Of course, the habits of alien beings were none of his business, really. Nothing was his business, these days. When a man had no business, he had to appoint himself to some. Putting it that way made his return to this planet seem more like an act of will and less like the yielding to an irresistible compulsion that he feared it had been.

"—more complicated than anybody ever thought," Van Beneker was saying.

"I'm sorry. I must have missed most of what you said."

"It isn't important. We theorize a lot, here. The last hundred of us. How soon do you start north?"

"I'm leaving after breakfast. If you'll tell me how to get to the nearest nildoror encampment so I can apply for my travel permit."

"Twenty kilometers, southeast. I'd run you down there in the beetle, but you understand—the tourists—"

"Can you get me a ride with a nildor?" Gundersen suggested. "I suppose I can hike it if it's too much bother. But—"

"I'll arrange things," Van Beneker said.

A YOUNG male nildor came in an hour after breakfast to take Gundersen down to the encampment. In the old days Gundersen would simply have climbed on his back—now he felt the necessity of making introductions. One does not ask an autonomous intelligent being to carry you twenty kilometers through the jungle, he thought, without attempting to enter into elementary courtesies.

"I am Edmund Gundersen of the first birth," he said. "I wish you joy of many rebirths, friend of my journey."

"I am Srin'gahar of the first birth," replied the nildor evenly, "and I thank you for your wish, friend of my journey. I serve you of free choice and await your commands."

"I must speak with a many-born one and gain permission to travel north. The man here says

you will take me to such a one."

"So it can be done."

Gundersen had one suitcase. He rested it on the nildor's broad rump and Srin'gahar instantly curved his tail up and back to clamp the bag in place. Then the nildor kneeled and Gundersen went through the ritual of mounting. Tons of powerful flesh rose and moved obediently toward the rim of the forest. It was almost as though nothing had ever changed.

They traveled the first kilometer through an ever-thickening series of bitterfruit glades in silence. Gradually it occurred to Gundersen that the nildor was not going to speak unless spoken to.

He opened the conversation by remarking that he had lived for ten years on Belzagor. Srin'gahar said that he knew that—he remembered Gundersen from the era of Company rule. The nature of the nildoror vocal system drained all overtones and implications from the statement. It came out flat, a mooing nasal grunt that did not reveal whether the nildor remembered Gundersen fondly, bitterly, or indifferently.

Gundersen took advantage of the ride to practice his nildororu. So far he had done well—but in an interview with a many-born one he would need all the verbal skill he could muster.

Again and again he asked, "I spoke that the right way, didn't I? Correct me if I didn't."

"You speak very well," Srin'gahar insisted.

Actually the language was not difficult. It was narrow in range, simple in grammar. Nildororu words did not inflect; they agglutinated, piling syllable atop syllable so that a complex concept like "the former grazing-ground of my mate's clan" emerged as a long grumbled growl of sound unbroken even by a brief pause. Nildoror speech was slow and stolid, requiring broad rolling tones that an Earthman had to launch from the roots of his nostrils. When he shifted from nildororu to any Earth language, Gundersen felt sudden exhilaration, like a circus acrobat transported instantaneously from Jupiter to Mercury.

Srin'gahar was taking a nildoror path, not one of the old Company roads. Gundersen had to duck low-hanging branches now and then, and once a quivering nicalanga vine descended to catch him around the throat in a gentle, cool, quickly broken, yet frightening embrace. When he looked back he saw the vine tumescent with excitement, red and swollen from the thrill of caressing an Earthman's skin. Minutes later they crossed a Company road. It was now a fading track in the jungle, nearly overgrown. In another year it would be gone.

The nildor's vast body demanded frequent feedings. Every half hour they halted and Gundersen dismounted while Srin'gahar munched shrubbery. The sight fed Gundersen's latent prejudices, troubling him so much that he tried not to look. In a

wholly elephantine way the nildor uncoiled his trunk and ripped leafy branches from the low trees. The great mouth sagged open and in the bundle went. With his triple tusks Srin'gahar shredded slabs of bark for dessert. The big jaws moved back and forth tirelessly, grinding, milling.

We are no prettier when we eat...

But the demon within Gundersen counterpointed his tolerance with a shrill insistence that his companion was indeed a true beast.

Srin'gahar was not an outgoing type. When Gundersen said nothing the nildor said nothing. When Gundersen asked a question, the nildor replied politely but minimally. The strain of sustaining such a broken-backed conversation drained Gundersen and he allowed long minutes to pass in silence. He had no idea of where he was and could not even tell if they were going in the right direction. The trees far overhead met in a closed canopy, screening the sun.

After the nildor had stopped for his third meal of the morning, though, he gave Gundersen an unexpected clue to their location. Cutting away from the path in a sudden diagonal, the nildor trotted a short distance into the most dense part of the forest, battering down the vegetation, and came to a halt in front of what once had been a Company building—a glossy dome now dimmed by time and swathed in vines.

"Do you know this house, Edmund of the first birth?"

"What was it?"

"The serpent station. Where you gathered the juices."

The past abruptly loomed like a toppling cliff above Gundersen. Jagged hallucinatory images plucked at his mind. Ancient scandals, long forgotten or suppressed, sprang to new life. This was the serpent station, this ruin? This was that place of private sins, the scene of so many falls from grace?

Gundersen slipped from the nildor's back and walked haltingly toward the building. He stood at the door a moment, looking in. Yes, there were the hanging tubes and pipes, the runnels through which the extracted venom had flowed. All the processing equipment was still in place, half devoured by warmth and moisture and neglect. There was the entrance for the jungle serpents, drawn by alien music they could not resist—and there they were milked of their venom.

Gundersen glanced back at Srin'gahar. The spines of the nildor's crest were distended. A mark of tension. A mark, perhaps, of shared shame. The nildoror, too, had memories of this building. Gundersen stepped into the station, pushing back the partly open door. It split apart from it moorings as he did so, and a musical tremor ran—*whang whang whang*—through the whole of the spherical building, dying away to a blurred feeble tinkle.

GUNDERSEN heard Jeff Kurtz' guitar again. The years fell away and he was once more a newcomer on Holman's World and about to begin his first stint at the serpent station, now assigned to that place that was the focus of so much gossip. Yes. Out of the shroud of memory came the image of Kurtz. There he was, standing just inside the station door, impossibly tall, the tallest man Gundersen had ever seen, with a great pale-domed, hairless head and enormous dark eyes socketed in prehistoric-looking bony ridges. A bright-toothed smile ran at least a kilometer's span from cheek to cheek.

The guitar went *whang* and Kurtz said, "You'll find it interesting here, Gundy. This station is a unique experience. We buried your predecessor last week." *Whang.* "Of course, you must learn to establish a distance between yourself and what happens here. That's the secret of maintaining your identity on an alien world, Gundy. Comprehend the esthetics of distance. Draw a boundary line about yourself and say to the planet, thus far you can go in consuming me, no farther. Otherwise the planet will eventually absorb you and make you part of it. Am I being clear?"

"Not at all," said Gundersen.

"The meaning will manifest itself eventually." *Whang.* "Come see our serpents."

Kurtz was five years older than Gundersen and had been on Holman's World three years longer. Everyone seemed to feel awe of Kurtz. Yet he was only an assistant station agent who had never been promoted beyond that lowly rank. After five minutes of exposure to him, Gundersen thought he knew why. Kurtz gave an impression of instability—not quite a fallen angel but certainly a falling one, Lucifer on his way down, descending from morn to noon, noon to dewy eve, but now only in the morning of his drop. One could not trust a man like that with serious responsibilities until he had finished his transit and had settled into his ultimate state.

They went into the serpent station together. Kurtz reached up as he passed the distilling apparatus, lightly caressing tubing and petcocks. His fingers were like a spider's legs and their caress was astonishingly obscene. At the far end of the room stood a short, stocky man, dark-haired, black-browed, the station supervisor, Gio' Salamone.

Kurtz made the introductions. Salamone grinned.

"Lucky you," he said. "How did you manage to get assigned here?"

"They just sent me," Gundersen said.

"As somebody's practical joke," Kurtz suggested.

Salamone said, "Well, now that you're here, you'd better learn our basic rule. The basic rule is that when you leave this station, you never discuss what happens here with anybody else. *Capisce?* Now say to me, I swear by the

Father, Son and Holy Ghost, also by Abraham, Isaac, Jacob and Moses—'"

Bewildered, Gundersen said, "That's an oath I've never heard before."

"Salamone's an Italian Jew," said Kurtz. "He's trying to cover all possibilities. Don't bother swearing—but he's right. What happens here isn't anybody else's business. Whatever you may have heard about the serpent station is probably true. Nevertheless, tell no tales when you leave here." *Whang. Whang.* "Watch us carefully now. We're going to call up our demons. Loose the amplifiers, Gio'."

Salamone seized a plastic sack of what looked like golden flour and hauled it toward the station's rear door. He scooped out a handful. With a quick upward heave he sent it into the air. The breeze instantly caught the tiny grains and carried them aloft.

Kurtz said, "He's just scattered a thousand microamplifiers into the jungle. In ten minutes they'll cover a radius of ten kilometers. They're tuned to pick up the frequencies of my guitar and Gio's flute, and the resonances go bouncing back and forth all over the place."

Kurtz began to play, picking up a melody in mid-course. Salamone produced a short transverse flute and wove a melody of his own through the spaces in Kurtz' tune. Their playing became a stately sarabande, delicate, hypnotic, two or three figures repeated endlessly without variations in volume or pitch.

For ten minutes nothing unusual occurred. Kurtz nodded toward the edge of the jungle.

"They're coming," he said.

Gundersen watched the serpents emerging from the forest. They were four times as long as a man and as thick as a big man's arm. Undulating fins ran down their backs from end to end. Their skins were glossy, pale green and evidently sticky. The detritus of the forest floor stuck to them in places, bits of leaves, soil, crumpled petals. Rows of platter-sized sensor spots flanked their rippling dorsal fins and served as eyes. Their heads were blunt. Their mouths were mere slits, suitable for nibbling on gobbets of soil. Two slender quills as long as a man's thumb protruded where nostrils might be. They extended to five times that length in moments of stress or when the serpent was under attack and they yielded a blue venom.

Despite the size of the creatures, despite the arrival of perhaps thirty of them at once, Gundersen did not find them frightening, although he would certainly have been uneasy at the arrival of a platoon of pythons. These were not pythons. They were not even reptiles at all but low-phylum creatures, actually giant worms. They were sluggish and evinced no apparent intelligence. But clearly they responded powerfully to the music. It had drawn them to the station and now they writhed in a ghastly

ballet, seeking the source of the sound. The first few were already entering the building.

"Do you play the guitar?" Kurtz asked. "Here—just keep the sound going."

He thrust the instrument at Gundersen, who struggled with the fingerings for a moment, then brought forth a lame, stumbling imitation of Kurtz' melody.

Kurtz, meanwhile, was slipping a tubular pink cap over the head of the nearest serpent. When it was in place the cap began rhythmic contractions. The serpent's writhings became momentarily more intense. Its fin moved convulsively. Its tail lashed the ground. Then it grew calm.

Kurtz removed the cap and slid it over the head of another serpent, and another, and another.

He was milking them of venom. These creatures were deadly to native metabolic systems, so it was said. They never attacked. They struck only when provoked. Their poison was universally effective.

BUT what was poison on Holman's World was a blessing on Earth. The venom of the jungle serpents was one of the Company's most profitable exports. Properly distilled, diluted, crystallized, purified, the juice served as a catalyst in limb-regeneration work. A dose of it softened the resistance of the human cell to change, insidiously corrupting the cytoplasm, leading it to induce the nucleus to switch on its genetic material. And so it greatly encouraged the reawakening of cell division, the replication of bodily parts, when a new arm or leg or face had to be grown.

Gunderson did not know how or why it worked but he had seen the stuff in action during his training period. A fellow trainee had lost both legs below the knee in a soarer accident. The drug made the flesh flow. It liberated the guardians of the body's coded pattern, easing the task of the genetic surgeons tenfold by sensitizing and stimulating the zone of regeneration. These legs had grown back in six months.

Gundersen continued to strum the guitar, Salamone to play his flute, Kurtz to collect the venom. Mooing sounds came suddenly from the bush. A herd of nildoror evidently had also been drawn by the music. Gundersen saw them lumber out of the underbrush and stand almost shyly along the border of the clearing—nine of them. After a moment they entered into a clumsy, lurching, ponderous dance. Their trunks waved in time to the music. Their tails swung. Their spiny crests revolved.

"All done," Kurtz announced. "Five liters—a good haul."

The serpents, milked, drifted off into the forest as soon as the music ceased. The nildoror stayed a while longer, peering intently at the men inside the station. Finally they left also. Kurtz and Salamone instructed Gundersen in the techniques of distilling the precious fluid, making it ready for shipment to Earth.

And that was all. He could

see nothing scandalous in what had happened. He did not understand why there had been so much sly talk at headquarters about this place nor why Salamone had tried to wring an oath of silence from him. Three days later they again summoned the serpents, again collected their venom and again the whole process seemed unexceptionable to Gundersen. But soon he came to realize that Kurtz and Salamone were testing his reliability before initiating him into their mysteries.

During the third week of his stint at the serpent station they finally admitted him to the inner knowledge. Gundersen realized that something unusual was about to happen when he saw Kurtz, after darting a sharp glance at Salamone, unhook a container of venom before it started on its route through the distilling apparatus. He poured it into a broad bowl that held at least a liter of fluid. On Earth that much of the drug would be worth a year of Gundersen's salary as an assistant station agent.

"Come with us," Kurtz said.

The three men stepped outside. At once three nildoror approached, behaving oddly, their spines upraised, their ears trembling. They seemed skittish and eager. Kurtz handed the bowl of raw venom to Salamone, who sipped from it and handed it back. Kurtz also drank.

He gave the bowl to Gundersen, saying, "Take communion with us?"

Gundersen hesitated.

Salamone said, "It's safe. It can't work on your nuclei when you take it internally."

Gundersen took a cautious swig. The venom was sweet but watery.

His improved olfactory and auditory acuities were the equivalent of being able to see into the ultraviolet and the infrared. A dingy forest flower sent dizzying waves of sleek, moist sweetness at him. The click of insect-claws in underground tunnels was like a symphony for percussion. And the bigness of him—the ecstasy of carrying such a body! His transformed consciousness soared, swooped, rose high again. He trampled trees and praised himself for doing so in booming tones. He grazed and gorged. Then he sat for a while, perfectly still, and meditated on the existence of evil in the universe, asking himself why there should be such a thing—and indeed whether evil in fact existed as an objective phenomenon.

His answers surprised and delighted him and he turned to Kurtz to communicate his insights. But just then the effect of the venom began to fade with startling suddenness. In a short while Gundersen felt altogether normal again. He was weeping, though, and he felt an anguish of shame, as though he had been detected flagrantly molesting a child. The three nildoror were nowhere in sight.

Salamone picked up the bowl and went into the station.

"Come," Kurtz said. "Let's go in, too."

They would not discuss any of it with him. They had let him share in the experience but they would not explain a thing. They cut him off sternly when he asked. The rite was hermetically private.

Gundersen was wholly unable to evaluate the experience. Had his body actually turned into that of a nildor for an hour? Hardly. Well, then, had his mind, his soul, somehow migrated into the nildor's body? And had the nildor's soul, if nildoror had souls, gone into his? What kind of sharing, what sort of union had occurred in that clearing?

Three days later, Gundersen applied for a transfer out of the serpent station. In those days he was easily upset by the unknown. Kurtz' only reaction, when Gundersen announced he was leaving, was a short, brutal chuckle. The normal tour of duty at the station was eight weeks, of which Gundersen had served less than half. He never again put in a stint there.

Later he gathered what gossip he could about the doings at the serpent station. He was told vague tales of sexual abominations in the grove, of couplings between Earthman and nildor, between Earthman and Earthman. He heard murmurs that those who habitually drank the venom underwent strange and terrible and permanent changes of the body. He heard stories of how the nildoror elders in their private councils bitterly condemned the morbid practice of going to the serpent station to drink the stuff the Earthmen offered. But Gundersen did not know if any of these whispers were true.

The phantoms faded. The sound of Kurtz' guitar diminished and was gone.

Srin'gahar asked, "Shall we leave now?"

Gundersen slowly emerged from the ruined station.

"Does anyone gather the juices of the serpents today?"

"Not here," said the nildor.

He kneeled. The Earthman mounted him. Srin'gahar carried him away, back to the path they had followed earlier.

IV

THEY neared the nildoror encampment that was Gundersen's immediate goal in early afternoon. For most of the day they had been traveling across the broad coastal plain but now the land dipped sharply. A long, narrow depression ran from north to south, a deep rift between the central plateau and the coast. At the approach to this rift Gundersen saw an immense devastation of foliage that signaled the presence of a large nildoror herd within a few kilometers. A jagged scar ran through the forest from ground level to a point about twice a man's height.

Even the lunatic tropical fertility of this region could not keep up with the nildoror appetite. It took a year or more for such zones of defoliation to restore themselves after the herd had moved on. Yet despite the impact

of the herd, the forest on all sides of the scar was even more close-knit than on the coastal plain to the east. This was a jungle raised to the next power, damp, steamy, dark. The temperature was considerably higher in the valley than on the coast and, though the atmosphere could not possibly have been any more humid here, there was an almost tangible wetness in the air. The vegetation was different, too. On the plain the trees tended to have sharp—sometimes dangerously sharp—leaves. Here the foliage was rounded and fleshy, heavy sagging disks of dark blue that glistened voluptuously whenever stray shafts of sunlight pierced the forest canopy overhead.

Gundersen and his mount made their way along the route of a stream that flowed perversely inland. The soil was spongy and soft. More often than not Srin'gahar walked knee deep in mud.

He was entering a wide circular basin at what seemed to be the lowest point in the entire region. Streams flowed into it on three or four sides, feeding a dark, weed-covered lake at the center.

Around the margin of the lake moved Srin'gahar's herd. Gundersen saw several hundred nildoror grazing, sleeping, coupling, strolling.

"Put me down," he said, taking himself by surprise. "I'll walk beside you."

Wordlessly Srin'gahar allowed him to dismount.

Gundersen regretted his egalitarian impulse the moment he stepped down. The nildor's broad-padded feet were able to cope with the muddy floor. Gundersen discovered that he had a tendency to begin to sink in if he remained in one place more than a moment. But he would not remount now. Every step was a struggle—but he struggled. The closeness of the climate made each breath a battle for him. He was greatly relieved when the footing became easier a short distance down the slope. Here a webwork of spongy plants spreading out from the lake underwove the mud to form a firm, if not altogether reassuring, platform a few centimeters down.

"—only on your brain," Salamone added.

Kurtz gently took the bowl from Gundersen and set it down. The largest nildor advanced and delicately dipped his trunk into it. Then the second nildor drank. The third. The bowl now was empty.

Gundersen said, "If it's poisonous to native life—"

"Not when they drink it. Just when it's shot directly into the bloodstream," Salamone said.

"What happens now?"

"Wait," Kurtz said, "and make your soul receptive to any suggestions that arise."

Gundersen did not have to wait long. He felt a thickening at the base of his neck and a roughness about his face. His arms grew impossibly heavy. It seemed to him best to drop to his knees as the effect intensified. He turned toward Kurtz, seeking reassurance from

those dark shining eyes—but Kurtz' eyes had already begun to flatten and expand and his green and prehensile trunk nearly reached the ground. Salamone, too, had entered the metamorphosis, capering comically, jabbing the soil with his tusks. The thickening continued. Now Gundersen knew that he weighed several tons. He tested his body's coordination, striding back and forth, learning how to move on four limbs. He went to the spring and sucked up water in his trunk. He rubbed his leathery hide against trees. He trumpeted bellowing sounds of joy in his hugeness. He joined Kurtz and Salamone in a wild dance, making the ground quiver. The nildoror, too, were transformed. One had become Kurtz. One had become Salamone. One had become Gundersen. The three former beasts moved in wild pirouettes, tumbling and toppling in their unfamiliarity with human ways. But Gundersen lost interest in what the nildoror were doing. He concentrated solely on his own experience.

It terrified him to know that this change had come over him and he was doomed forever to live as a massive animal of the jungle, shredding bark and ripping branches—yet it was rewarding to have shifted bodies this way and to have access to an entirely new range of sensory data. His eyesight now was dimmed and everything in its range was engulfed in a furry halo. But he found compensations. He was able to sort odors by their directions and by their textures and his hearing was immensely more sensitive.

Srin'gahar raised his trunk and sounded a trumpet blast of greeting to the encampment. A few of the nildoror replied.

To Gundersen, Srin'gahar said, "The many-born one stands at the edge of the lake, friend of my journey."

THE lake was congested with drifting vegetation. Humped masses of it broke the surface everywhere—leaves like horns of plenty, cup-shaped spore-bodies, ropy tangled stems, everything dark blue against the lighter blue-green of the water. Through this maze of tightly-packed flora moved huge semi-aquatic mammals, malidaror, whose tubular yellowish bodies were almost totally submerged. Only the rounded bulges of their backs and the jutting periscopes of their stalked eyes were in view, and now and then a pair of cavernous, snorting nostrils. Gundersen could see the immense swaths that the malidaror had cut through the vegetation in this day's feeding. But at the far side of the lake the wounds were beginning to close as new growth hastened to fill gaps.

Gundersen and Srin'gahar went down toward the water. Suddenly the wind shifted, and Gundersen had a whiff of the lake's fragrance. He coughed—it was like breathing the fumes of a distillery vat. The lake was in ferment. Alcohol was a by-product of the respiration of these water plants and, having no

outlet, the lake became one large tub of brandy. Both water and alcohol evaporated from it at a rapid pace, making the surrounding air not only steamy but potent. And during centuries when evaporation of water had exceeded the inflow from the streams the proof of the residue had steadily risen. When the Company ruled this planet such lakes had been the undoing of more than one agent, Gundersen knew.

He was puzzled to see a dozen brush shelters flanking one of the streams. Nildoror did not live in dwellings of any sort. The climate made housing unnecessary. Besides, they were incapable of constructing anything, having no organs of manipulation other than the three "fingers" at the tips of their trunks.

He studied the crude lean-tos in bewilderment. After a moment it dawned on him that he had seen structures of this sort before—they were the huts of sulidoror. The puzzle deepened. Such close association between the nildoror and the carnivorous bipeds of the mist country had been unknown to him. Now he saw the sulidoror themselves, perhaps twenty of them, sitting crosslegged inside their huts. Slaves? Captives? Friends of the tribe? None of those ideas made sense.

"That is our many-born," Srin'gahar said, indicating, with a wave of his trunk, a seamed and venerable nildor in the midst of a group by the lakeshore.

A RING of courtiers surrounded the old one. They were gray-skinned and wrinkled, too—a congregation of seniors. Younger nildoror, of the generation of Srin'gahar, kept a respectful distance. No immature nildoror were visible in the encampment. No Earthman had ever seen a young nildor. Gundersen had been told that the nildoror were always born in the mist country, in the home country of the sulidoror. Apparently they remained in close seclusion there until they had reached the nildoror equivalent of adolescence, when they migrated to the jungles of the tropics. He also had heard that every nildor hoped to go back to the mist country when its time came to die. But he did not know if such tales were true. No one did.

The ring opened and Gundersen found himself facing the many-born one. Protocol demanded that Gundersen speak first but he faltered, dizzied by tension, perhaps, or perhaps by the fumes of the lake. He knew an endless moment before he pulled himself together.

He said at last, "I am Edmund Gundersen of the first birth. I wish you joy of many rebirths, O wisest one."

Unhurriedly the nildor swung his vast head to one side, sucked up a snort of water from the lake and squirted it into his mouth.

Then he rumbled, "You are known to us, Edmundgundersen, from days past. You kept the big house of the Company at Fire Point in the Sea of Dust."

The nildor's sharpness of memory astonished and distressed him. If they remembered him so well, what chance did he have to win favors from these people? They owed him no kindnesses.

"I was there, yes, a long time ago," he said tightly.

"Not so long ago. Ten turnings is not a long time." The nildor's heavy-lidded eyes closed and for some moments the many-born one seemed to have fallen asleep.

He finally spoke, eyes still closed, "I am Vol'himyor of the seventh birth. Will you come into the water with me? I grow tired easily on the land."

Vol'himyor strode into the lake without waiting. He swam slowly to a point some forty meters from shore and floated there, submerged to the shoulders. A malidar that had been browsing on the weeds in that part of the lake went under with a bubbling murmur of discontent and reappeared far away. Gundersen knew that he had no choice but to follow the many-born one. He stripped and walked forward.

The tepid water rose about him. Not far out, the spongy matting of fibrous stems below ground level gave way to soft warm mud beneath Gundersen's bare feet. He felt the occasional movement of small many-legged things under his soles. The roots of the water-plants swirled whip-like about his legs and the black bubbles of alcohol that came up from the depths and burst on the surface almost stifled him with their release of vapor. Quickly he paddled himself out to Vol'himyor. The surface of the water was clear there, thanks to the malidar. In the dark depths of the lake, though, unknown creatures moved to and fro. Every few moments something slippery and quick slithered along Gundersen's body.

Vol'himyor, still seemingly asleep, murmured, "You have been gone from this world for many turnings, have you not?"

"I returned to my own world after the Company relinquished its rights here."

Even before the nildor's eyelids parted, even before the round yellow eyes fixed coldly on him, Gundersen was aware that he had blundered.

"Your Company never had rights here to relinquish," the nildor said in the customary flat, neutral way. "Is this not so?"

"It is so," Gundersen conceded. He searched for a graceful correction and finally said, "After the Company relinquished possession of this planet I returned to my own world."

"Those words are more nearly true. Why, then, have you come back here?"

"Because I love this place and wish to see it again."

"Is it possible for an Earthman to feel love for Belzagor?"

"An Earthman can love Belzagor, yes."

"An Earthman can become captured by Belzagor," Vol'himyor said with more than usual slow-

ness. "An Earthman may find that his soul has been seized by the forces of this planet and is held in thrall. But I doubt that an Earthman can feel love for this planet, as I understand your understanding of love."

"I yield the point, many-born one. My soul has become captured by Belzagor. I could not help but return."

"You are quick to yield such points."

"I have no wish to give offense."

"Commendable tact. And what will you do on this world that has seized your soul?"

"Travel to many parts of your world," said Gundersen. "I wish particularly to go to the mist country."

"Why there?"

"It is the place that captures me most deeply."

"What thing has captured you there?"

"The beauty of the mountains rising out of the mist. The sparkle of sunlight on a clear, cold, bright day. The splendor of the moons against a field of glittering snow."

"You are quite poetic," said Vol'himyor.

Gundersen could not tell if he were being praised or mocked.

He said, "Under the present law I must have the permission of a many-born one to enter the mist country. So I come to make application to you."

"You are fastidious in your respect for our law, my once-born friend. Once you were different."

Gundersen bit his lip. He felt something crawling up his calf down in the depths of the lake but he compelled himself to stare serenely at the many-born one. He chose his next words with care.

"Sometimes we are slow to understand the nature of others and give offense without knowing that we do so."

"It is so."

"But then understanding comes," Gundersen said, " and one feels remorse for the deeds of the past. And one hopes that one may be forgiven for his sins."

"Forgiveness depends on the quality of the remorse," said Vol'himyor, "and also on the quality of the sins."

"I believe my failings are known to you."

"They are not forgotten," said the nildor.

"I believe also that in your creed the possibility of personal redemption is not unknown."

"True. True."

"Will you allow me to make amends for my sins of the past against your people, both known and unknown?"

"Making amends for unknown sins is meaningless," said the nildor. "But in any case we seek no apologies. Your redemption from sin is your own concern, not ours. Perhaps you will find that redemption here, as you hope. I sense already a welcome change in your soul. It will count heavily in your favor."

"I have your permission to go north, then?"

"Not so fast. Stay with us a while as our guest. We must think about this. You may go to shore now."

THE dismissal was clear. Gundersen thanked the many-born one for his patience, not without some self-satisfaction at the way he had handled the interview. He had always displayed proper deference toward many-born ones—even a really Kiplingesque imperialist knew enough to show respect for venerable tribal leaders—but in Company days it had always been nothing more than a charade for him, a put-on show of humility, since ultimate power resided with the Company's sector agent, not with any nildor no matter how holy. Now, of course, the old nildor really did have the power to keep him out of the mist country, and might even see some poetic justice in banning him from it. But Gundersen felt that his deferential and apologetic attitude had been reasonably sincere just now, and that some of that sincerity had been communicated to Vol'himyor. Unless some show of earnestness did come through he knew no hope at all of gaining the permission he needed.

Abruptly, when Gundersen was still a good distance from shore, something hit him a tremendous blow between the shoulders and flung him, stunned and gasping, face forward into the water.

As he went under, the thought crossed his mind that Vol'himyor had treacherously come up behind him and lashed him with his trunk. Spluttering, his mouth full of the lake's liquor, his arms nearly numbed by the impact of the blow, Gundersen warily surfaced.

He opened his eyes and had momentary trouble focusing them. The many-born one was still far away across the water, looking in another direction. Gundersen felt a prickly premonition and got his head down just in time to avoid being decapitated by whatever it was that had hit him before. Huddling nose deep in the water, he saw a thick yellowish beam, like a boom out of control, swing by overhead. Now he heard thunderous bellows of pain and felt widening ripples sweeping across the lake. He glanced around.

A dozen sulidoror had entered the water and were killing a malidar. They had harpooned the colossal beast with sharpened sticks. The malidar thrashed and coiled in its final agonies. The mighty tail of the animal had knocked Gundersen over.

The hunters had fanned out waist-deep in the shallows. Their thick fur was bedraggled and matted. Each group grasped the line of one harpoon. The sulidoror were gradually drawing the malidar toward shore.

Gundersen continued to stay low in the water, catching his breath, working his shoulders to assure himself that no bones were broken. The malidar's tail must have given him the merest flick the first time—he would surely have been destroyed the second time that

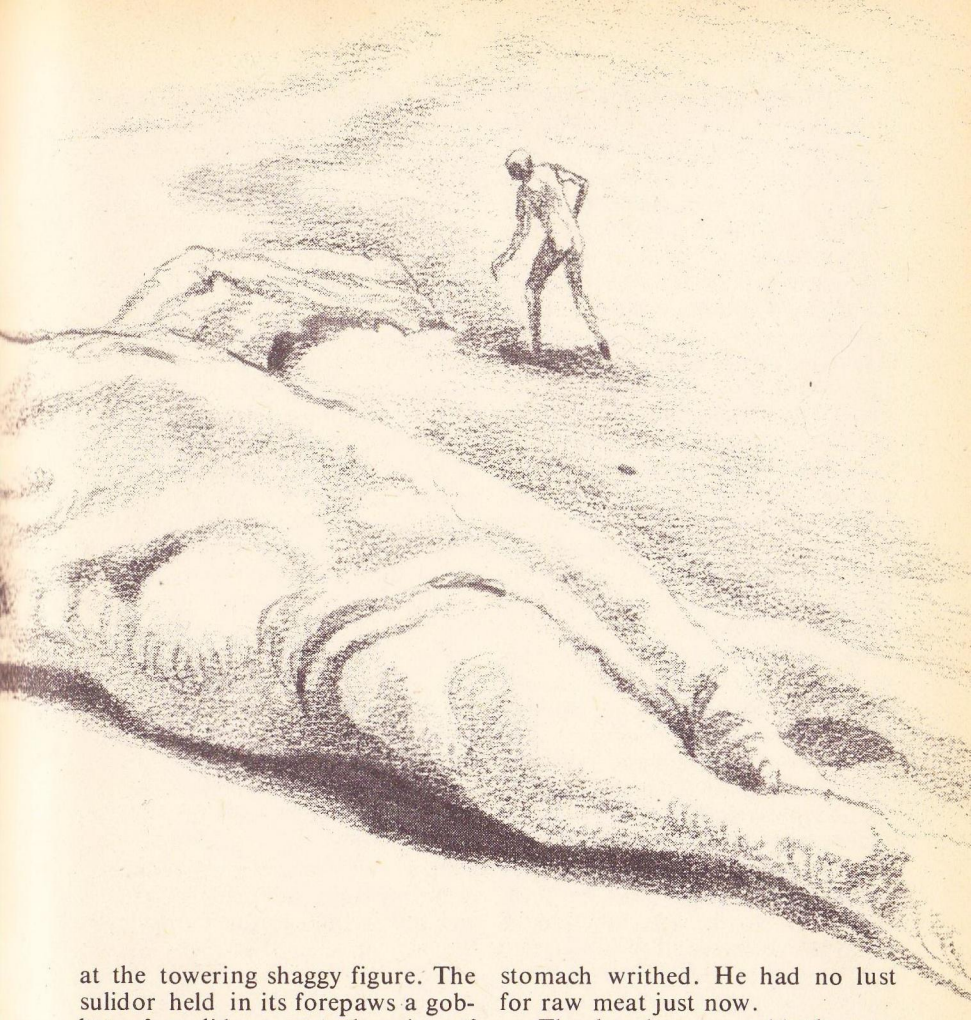
tail came by if he had not ducked. He was beginning to ache. He felt nearly drowned by the liquid he had gulped. He wondered when he would start to get drunk.

Now the sulidoror had beached their prey. Only the malidar's tail and thick webfooted hind legs lay in the water, moving fitfully. The rest of the animal, tons of it, stretching five times the length of a man, was up on shore. The sulidoror were methodically driving long stakes into it, one through each of the forelimbs and several into the broad wedge-shaped head. A few nildoror were watching the operation in mild curiosity. Most ignored it. The remaining malidaror continued to browse in the weeds as though nothing had happened.

A final thrust of a stake severed the malidar's spinal column. The beast quivered and lay still.

Gundersen hurried from the water, swimming quickly, then wading through the unpleasantly voluptuous mud, at last stumbling out onto the beach. His knees suddenly failed him and he toppled forward, trembling, choking, puking. Later he rolled to one side and watched the sulidoror cutting gigantic blocks of pale pink meat from the malidar's sides and passing them around. Other sulidoror were coming from the huts to share the feast. Gundersen shivered. He was in a kind of shock. A few minutes passed before he realized that the cause was not only the blow he had received and the water he had swallowed, but also the knowledge that an act of violence had been committed in front of a herd of nildoror and that the nildoror did not seem at all disturbed. He had imagined that these peaceful, nonbelligerent creatures would react in horror to the slaughter of a malidar. But they simply did not care. The shock Gundersen felt was one of disillusionment.

A sulidor came to stand over him. Gundersen stared up uneasily



at the towering shaggy figure. The sulidor held in its forepaws a gobbet of malidar meat the size of Gundersen's head.

"For you," said the sulidor in the nildoror language. "You eat with us?"

It did not wait for a reply. It tossed the slab of flesh to the ground next to Gundersen and rejoined its fellows. Gundersen's stomach writhed. He had no lust for raw meat just now.

The beach was suddenly very silent.

They were all watching him, sulidoror and nildoror both.

V

GUNDERSEN rose shakily to his feet. He sucked down warm

air into his lungs and bought a little time by crouching at the lake's edge to wash his face. He found his discarded clothing and consumed a few minutes in donning it. Now he felt a little better—but the problem of the raw meat remained.

The sulidoror, enjoyed their feast, rending and tearing flesh and gnawing on bones, nevertheless frequently looked his way to see whether he would accept their hospitality. The nildoror, who of course had not touched the meat themselves, also seemed curious about his decision. If he refused the meat, would he offend the sulidoror? If he ate it, would he stamp himself as bestial in the eyes of the nildoror?

He concluded that it was best of force some of the meat into him as a gesture of good will toward the menacing-looking bipeds.

He would eat the meat. But he would eat it as an Earthman would.

He ripped some leaves from the water plant and spread them out to form a mat. He placed the meat on this. From his tunic he took his fusion torch. He adjusted it for wide aperture, low intensity, and played it on the meat until its surface was charred and bubbling. With a narrower beam he cut the cooked meat into chunks he could manage. Then, squatting crosslegged, he picked up a chunk and bit into it.

The meat was soft and cheesy, interlaced by tough stringlike masses forming an intricate grid. Gundersen succeeded in getting down three pieces. When he decided he had had enough, he rose, called out his thanks to the sulidoror and kneeled by the side of the lake to scoop up some of the water. He needed a chaser.

During all this time no one spoke to him or approached him.

The nildoror had all left the water, for night was approaching. They had settled down in several groups well back from the shore. The feast of the sulidoror continued noisily but was nearing its end. Already several small scavenger beasts had joined the party and were at work at the lower half of the malidar's body while the sulidoror finished the other part.

Gundersen looked about for Srin-gahar. He had questions to ask.

That the nildoror had accepted the killing in the lake so coolly still troubled him. He realized that he had somehow always regarded the nildoror as more noble than the other big beasts of this planet because they did not take life except under supreme provocation, and sometimes not even then. Here was an intelligent race exempt from the sin of Cain. And Gundersen had seen in that a corollary—that the nildoror, because they did not kill, would look upon killing as a detestable act. Now he knew that his reasoning was faulty and even naive. The nildoror did not kill simply because they were not eaters of meat; but the moral superiority that he had attributed to them on that score must in fact be a product of his own

guilty imagination.

The night came on with tropic swiftness. A single moon shone.

SRIN'GAHAR sat placidly against a narrow tree, his thick legs folded beneath his body. Gundersen put his question to him.

Srin'gahar said, "Why should the sight of violent death shock us? Malidar have no *g'rakh,* after all. And it is obvious that sulidoror must eat."

"No *g'rakh*?" Gundersen said. "This is a word I do not know."

"The quality that separates the souled from the unsouled," Srin'gahar explained. "Without *g'rakh* a creature is but a beast."

"Do sulidoror have *g'rakh*?"

"Of course."

"And nildoror also, naturally. But malidaror don't. What about Earthmen?"

"It is amply clear that Earthmen have *g'rakh.*"

"And one may freely kill a creature which lacks that quality?"

"If one has the need to do so, yes," said Srin-gahar. "These are elementary matters. Have you no such concepts on your own world?"

"On my world," said Gundersen, "there is only one species that has been granted *g'rakh,* so perhaps we give such matters too little thought. We know that whatever is not of our own kind must be lacking in *g'rakh.*"

"And when you come to another world, you have difficulty in accepting the presence of *g'rakh* in other beings?" Srin'gahar asked.

"You need not answer. I understand."

"May I ask another question?" said Gundersen. "Why are there sulidoror here?"

"We allow them to be here."

"In the past—in the days when the Company ruled Belzagor—the sulidoror never went outside the mist country."

"We did not allow them to come here then."

"But now you do. Why?"

"Because now it is easier for us to do so. Difficulties stood in the way at earlier times."

"What kind of difficulties?" Gundersen persisted.

Softly Srin'gahar said, "You will have to ask that of someone who has been born more often than I. I am once-born. Many things are as strange to me as they are to you. Look, another moon is in the sky. At the third moon we shall dance."

Gundersen looked up and saw the tiny white disk moving rapidly, low in the sky. Belzagor's five moons were a random assortment, the closest one just outside Roche's Limit, the farthest so distant it was visible only to sharp eyes on a clear night. At any given time two or three moons were in the night sky but the fourth and fifth moons had such eccentric orbits that they could never be seen at all from vast regions of the planet and passed over most other zones no more than three or four times a year. One night each year all five moons could be seen at once, along a band ten kilometers wide,

running at an angle of about 40° to the equator from northeast to southwest. Gundersen had experienced the Night of Five Moons only a single time.

The nildoror were starting to move toward the lakeshore.

The third moon appeared, spinning retrograde into view from the south.

So he was going to see them dance again. He had witnessed these ceremonies early in his career. He had been stationed at Shangri-la Falls in the northern tropics. That night the nildoror had massed just upstream of the falls on both banks of Madden's River. For hours after dark their blurred cries could be heard even above the roar of the water. Finally Kurtz, who was also stationed at Shangri-la then, had said, "Come, let's watch the show."

He led Gundersen out into the night.

This had been six months before the episode at the serpent station—Gundersen had not yet realized how strange Kurtz was. His first inkling had come when Kurtz had joined the nildoror in their dance.

The huge beasts had been clustered in loose semicircles, stamping back and forth, trumpeting piercingly, shaking the ground. Suddenly Kurtz had moved out there among them, arms upflung, bare chest beaded with sweat and shining in the moonslight, dancing as intensely as any of them, crying out in great booming roars, stamping his feet, tossing his head. And the nildoror were forming a group around him, giving him plenty of space, letting him enter fully into the frenzy, now running toward him, now backing away.

Gundersen had stood awed.

He had not stirred when Kurtz had called to him to join the dance. He had watched for what had seemed hours, hypnotized, until he had broken somehow from his trance. He had found Kurtz still in ceaseless motion, a gaunt, skeletal figure jerking puppetlike on invisible strings, looking fragile despite his extreme height as he moved within the circle of colossal nildoror. Kurtz had been unable either to hear Gundersen's words or take note of his presence and finally Gundersen had gone back to the station alone.

In the morning he had found Kurtz, looking spent and worn, slumped on the bench overlooking the waterfall.

Kurtz had merely said, "You should have stayed. You should have danced."

Anthropologists had studied these rites. Gundersen had looked up the literature, learning what little there was to learn. Evidently the dance was preceded and surrounded by drama, a spoken episode akin to Earth's medieval mystery plays, a theatrical reenactment of some supremely important nildoror myth, serving both as mode of entertainment and as ecstatic religious experience. Unfortunately the language of the drama was an obsolete liturgical tongue, not a word of which could be under-

stood by an Earthman. The nildoror, who had not hestitated to instruct their first Earthborn visitors in their relatively simple modern language, had never offered any clue to the nature of the other one. The anthropological observers had noted one point Gundersen now found cheering; invariably, within a few days after the performance of this particular rite, groups of nildoror from the herd performing it would set out for the mist country, presumably to undergo rebirth.

He wondered if the rite might be some ceremony of purification, some means of entering a state of grace before undergoing rebirth.

THE nildoror all had gathered, now, beside the lake. Srin'gahar was one of the last to go. Gundersen sat alone on the slope above the basin, watching the massive forms assembling. The contrary motions of the moons fragmented the shadows of the nildoror. The cold light from above turned their smooth green hides into furrowed black cloaks.

In the silence came a low, clear, forceful flow of words. Gundersen strained to hear, hoping to catch some clue to the meaning, seeking a magical gateway that would let him burst through into an understanding of that secret language. But no understanding came. Vol'himyor was the speaker. The old many-born one was reciting words clearly familiar to everyone at the lake, an invocation, an introit. Then came a long interval of silence and finally a response from a second nildor at the opposite end of the group, who exactly duplicated the rhythms and sinuosities of Vol'himyor's utterance. Silence again. Next a reply from Vol'himyor, spoken more crisply. Back and forth the center of the service moved and the interplay between the two celebrants became what was for nildoror a surprisingly quick exchange of dialogue. About every tenth line the herd at large repeated what a celebrant had said, sending dark reverberations echoing through the night.

After perhaps ten minutes of this, the voice of a third solo nildor was heard. Vol'himyor made reply. A fourth speaker took up the recitation. Now isolated lines were coming in rapid bursts from many members of the congregation. No cue was missed. No nildor trampled on another's lines. The tempo accelerated. The ceremony had become a mosaic of brief utterances blared forth from every part of the group in a random rotation. A few of the nildoror were up and moving slowly in place, lifting their feet, putting them down.

Lightning speared through the sky. Gundersen felt a chill. He saw himself as a wanderer on a prehistoric Earth, spying on some grotesque conclave of mastodons. All the things of man seemed infinitely far away now. The drama was reaching some sort of climax. The nildoror were bellowing, stamping, calling to one another with tremendous snorts. They were taking up formations, assembling

in aisled rows. Still there came utterances and responses, antiphonal amplifications of words heavy with strange significance. The air grew more steamy. Gundersen could no longer hear individual words, only rich deep chords of massed grunts—ah ah *ah* ah, ah ah *ah* ah—the old rhythm that he remembered from the night at Shangri-la Falls. The sound was breathy, gasping, ecstatic, an endless chuffing pattern of exhalations—ah ah *ah* ah, ah ah *ah* ah, ah ah *ah* ah—with scarcely a break between each group of four beats, and the whole jungle seemed to echo with it. The nildoror had no musical instruments whatever—yet to Gundersen it appeared that vast drums were pounding out that hypnotically intense rhythm.

And the nildoror were dancing.

Down below on the margin of the lake moved scores of great shadowy shapes, prancing like gazelles, two running steps forward, stamp down hard on the third step, regain the balance on the fourth. The universe trembled. Boom boom *boom* boom, boom boom *boom* boom. The earlier phase of the ceremony, the dramatic dialogue, which might have been some sort of subtle philosophical disquisition, had given way totally to this primeval pounding, this terrifying shuffling of gigantic elephantine bodies. Boom boom *boom* boom. Gundersen looked to his left and saw the sulidoror entranced, hairy heads switching back and forth in the rhythm of the dance—but not one of the bipeds had risen from the crosslegged posture. They were content to rock, nod and now and then to pound their elbows on the ground.

Gundersen was cut off from his specific past, even from a sense of kinship to his species. Disjointed memories floated up. Again he was at the serpent station, a prisoner of the hallucinatory venom, feeling himself transformed into a nildor and capering thickly in the grove. Again he stood by the bank of the great river, seeing another performance of this very dance. And also he remembered nights spent in the safety of Company stations deep in the forest, among his own kind, when they had listened to the sound of stamping feet in the distance.

All those other times Gundersen had drawn back from whatever strangeness this planet was offering him. He had transferred out of the serpent station rather than taste the venom a second time. He had refused Kurtz' invitation to join the dance. He had remained within the station when the rhythmic poundings began in the forest. But tonight he felt little allegiance to mankind. He found himself longing to join that black and incomprehensible frenzy at the lakeshore. Something monstrous was running free within him, liberated by the incessant repetition of that boom boom *boom* boom. But what right had he to caper Kurtzlike in an alien ceremony? He did not dare intrude on their ritual.

No.

He did not dare . . . .

YET he discovered that he was walking down the spongy slope toward the place where the massed nildoror cavorted.

If he could think of them only as leaping, snorting elephants it would be all right. If he could think of them even as savages kicking up a row it would be all right. But the suspicion was unavoidable that this ceremony of words and dancing held intricate meanings for these people and that was the worst of it. They might have thick legs and short necks and long dangling trunks but that did not make them elephants, for their triple tusks and spiny crests and alien anatomies said otherwise; and they might be lacking in all technology, lacking even in written language, but that did not make them savages, for the complexity of their minds said otherwise. They were creatures who possessed *g'rakh*.

Gundersen remembered how he had innocently attempted to instruct the nildoror in the arts of terrestrial culture, in an effort to help them "improve" themselves. He had wanted to humanize them, to lift their spirits upward, but nothing had come of that, and now he found his own spirit being drawn—downward? Certainly to their level, wherever that might lie. Boom boom *boom* boom. His feet hesitantly traced out the four-step as he continued down the slope toward the lake. Did he dare? Would they crush him as a blasphemer?

They had let Kurtz dance.

It had been in a different latitude, a long time ago, and other nildoror had been involved. But they had let Kurtz dance.

"Yes," a nildoror called to him. "Come, dance with us."

Was it Vol'himyor? Was it Srin'-gahar? Gundersen did not know which of them had spoken. In the darkness, in the sweaty haze, he could not see clearly, and all these giant shapes looked identical. He reached the bottom of the slope. Nildoror were everywhere about him, tracing out passages in their private journeys from point to point on the lakeshore. Their bodies emitted acrid odors, which, mixing with the fumes of the lake, choked and dizzied him. He heard several of them call to him.

"Yes, yes, dance with us—"

And he danced.

He found an open patch of marshy soil and laid claim to it, moving forward, backward, covering and recovering his one little tract in his fervor. No nildoror trespassed on him. His head tossed. His eyes rolled. His arms dangled. His body swayed and rocked. His feet carried him untiringly. Now he sucked in the thick air. Now he cried out in strange tongues. His skin was on fire. He stripped away his clothing but it made no difference. Boom boom *boom* boom. Even now, a shred of his old detachment was left, enough so that he could marvel at the spectacle of himself dancing naked amid a herd of giant, alien beasts. Would they, in their ultimate transports of passion, sweep in

over his plot and crush him into the muck? Surely it was dangerous to stay here in the heart of the herd. But he stayed. Boom boom *boom* boom, again, again, yet again. As he whirled he looked out over the lake and, by sparkling, refracted moonslight, saw the malidaror placidly munching the weeds, heedless of the frenzy on land.

They are without g'rakh. They are beasts and when they die their leaden spirits go downward to the earth. Boom. Boom. BOOM. Boom.

He became aware that glossy shapes were moving along the ground, weaving warily between the rows of dancing nildoror. The serpents! This music of pounding feet had summoned them from the dense glades where they lived.

The nildoror seemed wholly unperturbed that these deadly worms moved among them. A single stabbing thrust of the two spiny quills would bring even a mighty nildor toppling down; but no matter. The serpents were welcome, it appeared. They glided toward Gundersen, who knew he was in no mortal danger from their venom but who did not seek another encounter with it. He did not break the stride of his dance, though, as five of the thick pink creatures wriggled past him.

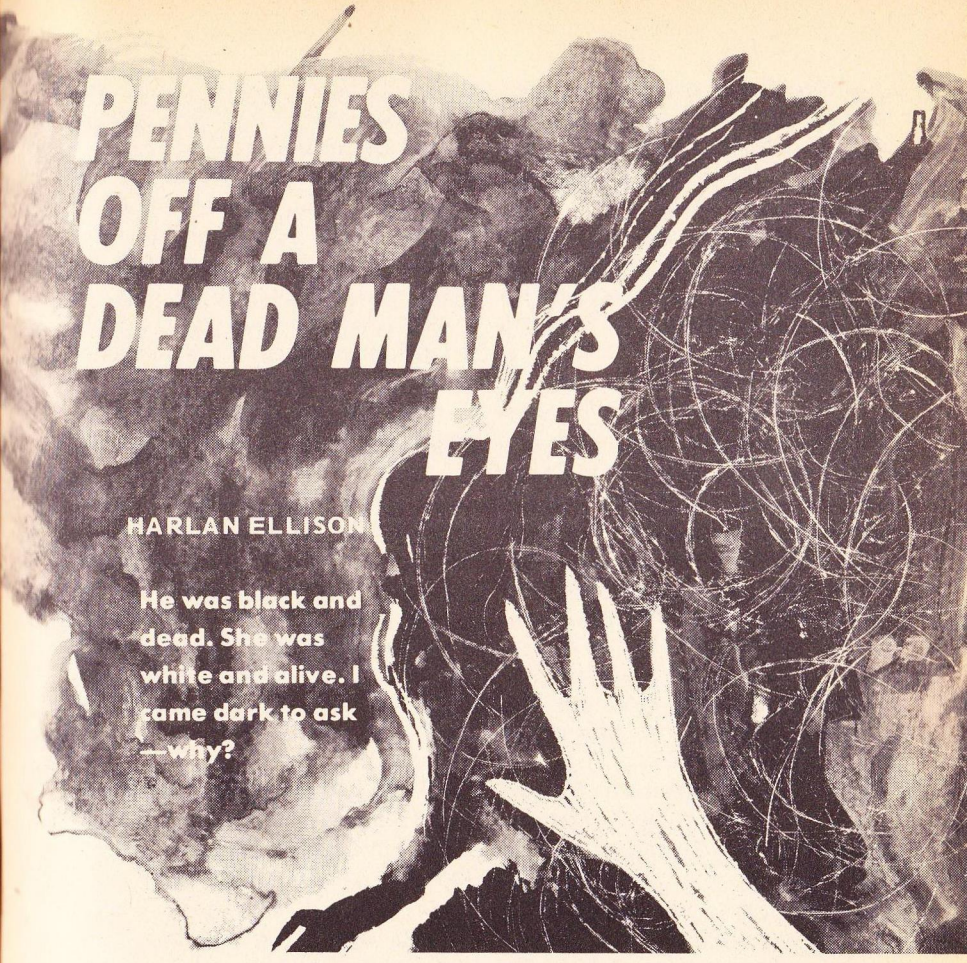
The serpents passed through and were gone. And still the uproar continued. And still the ground shook. Gundersen's heart hammered but he did not pause. He gave himself up fully, blending with those about him, sharing as deeply as he was able to share the intensity of the experience.

The moons set. Early streaks of dawn stained the sky.

Gundersen became aware that he no longer could hear the thunder of stamping feet. He danced alone. About him the nildoror had settled down and their voices again could be heard in that strange unintelligible litany. They spoke quietly but with great passion. He could no longer follow the patterns of their words. Everything merged into an echoing rumble of tones, without definition, without shape. Unable to halt, he jerked and twisted through his obsessive gyration until the moment he felt the first heat of the morning sun.

Then he fell exhausted and lay still. He slipped easily into sleep.

(TO BE CONTINUED)



PENNIES OFF A DEAD MAN'S EYES

HARLAN ELLISON

He was black and dead. She was white and alive. I came dark to ask —why?

IT WAS a slow freight in from Kansas City. I'd nearly emptied all the fluid from my gut sac. There were no weeds or water to fill it again. When the freight hit the outermost switching lines of the yards it was already dark. I rolled myself off the edge of the boxcar, hit running, went twenty feet fast and slipped, fell to my hands and knees and tumbled over. When I got up there were tiny bits of white chalk stone imbedded in my palms. I rubbed them off but they really hurt.

I looked around, tried to gauge my position in relation to the town, and when I recognized the spire of the First Baptist, set off across the tracks in the right direction.

A yard bull was running like crazy toward me, so I went dark and left him standing where I'd been, scratching the back of his head and looking around.

It took me forty minutes to walk to the center of town, through it and out the other side, in the direction of Littletown—the nigger section.

There was a coal-bin entrance to the All-Holiness Pentecostal Church of Christ the Master, and I slipped inside, smiling. In twelve years they hadn't repaired the latch and lock. The stairs were dim in the basement darkness but I knew my way the way a child remembers his bedroom when the light is out. Across twelve years, I remembered.

There were the occasional dim rumblings of voices from upstairs, from the vestry, from the casket room, from the foyer.

Jedediah Parkman was laid out up there. Eighty-two years old, dead, tired, at the end of an endless road down which he had stumbled, black, poor, proud, helpless. No not helpless.

I climbed the stairs from the basement, laid my white hand against the dry, cracked wood of the door and thought of all the weight of black pressing back on the other side. Jed would have chuckled.

Through a crack in the jamb I saw nothing but wall opposite; I carefully opened the door. The hall was empty. They'd be moving into the vestry now. The service would be beginning. The preacher would be getting ready to tell the congregation about old Jed, what a good man he'd been, how he always had enough heart for the stray cats and deadbeat kids he picked up. How so many people owed him so much. Jed would have snorted.

But I'd arrived in time. How many other stray cats had made it?

I closed the basement door behind me, slid along the wall to the pantry door that opened into the small room adjacent to the vestry. In a moment I was inside. I turned off the light in the pantry—in case I had to go dark—then crept to the door in the opposite wall. I opened it a sliver and peered out into the vestry.

Since the bombing the chapel had been unusable. I'd heard about it even in Chicago. Seven had been killed, and Deacon Wilkie had been blinded by flying glass. They'd made do the best they could with the vestry.

Folding chairs were set up in rows. They were filled with the population of Littletown. They were two deep around the walls. One or two white faces. I recognized a couple of other stray cats. It'd been twelve years; they looked as though they were making it. But they hadn't forgotten.

I WATCHED and counted blacks. One hundred and eighteen. A few days ago—I'd been in Kansas City—there'd been one hundred and nineteen. Now the one hundred and nineteenth black man in Danville's Littletown lay in his casket, atop sawhorses, in the front of the room, surrounded by flowers.

Hello, old Jed . . .

Twelve, it's been . . .

God, you're quiet. No chuckles, no laughs, Jed. You're dead. I know . . .

He lay, hands folded across his chest. Big catcher's-mitt paws folded, calluses hidden—sweet Jesus, I could see flickering candlelight glinting off his nails. They'd manicured his hands. Old Jed would have screamed, doing a thing like that to a man bit his nails to the quick.

Laying up in a shallow box, neat black patent-leather shoes pointing toward the ceiling; kinky salt-and-pepper hair flattened against the silk lining of the box (eighty-two, and that old man's hair still had black in it!); lay in his best suit, a black suit, clean white long-sleeve shirt and a yellow tie. On display. Looking down at himself, for sure, from the heaven he'd always believed was up there. Looking down at himself so fine and smiling—puffing proud, yes sir!

On each of his eyes a silver dollar.

To pay his way with the Man, across the River Jordan.

I didn't go in. Never intended to. Too many questions. Some of them might have remembered—I know the other stray cats would have. So I just laid back and waited to talk to old Jed private.

The service was a brief one. They cried a decent amount. Then it was over and they filed past slowly. A couple of women did the big falling down trying to get in the box thing with him. Christ knows what Jed would've done with that. I waited till the room emptied out. Preacher and a couple of the brothers cleaned up, decided to leave the chairs till morning, shut off the lights and went. There was silence and a lot of shadows, just the candles still doing their slow motion. I waited a long time to make sure. Finally I opened the door a bit more and started to step through.

A sound came from the door to the outside, and I pulled back fast. I watched as the door opened and a tall, slim woman in black passed the chairs, walking toward the open casket. Veil over her face.

My gut sac went total empty right then. Lining started to burn. I thought sure she'd hear the rumbling. Sprayed it with stomach juice and that would hold it for a while till I could get weed and water. Burned.

I couldn't make out her face behind the veil. She walked up to the casket and stared down at Jed Parkman. Then she reached out a gloved hand toward the body, pulled it back, tried again and then held the hand motionless in the air above the cold meat. Slowly she swept the veil back over the wide-brimmed hat.

I drew in a breath. She was a white woman. More than just ordinarily beautiful. Stunning. One of those creatures God made just to be looked at. I held my breath—breathing would scare her away.

She kept looking at the corpse, then slowly she reached out again. Carefully, very carefully, she removed the coins from Jed's dead eyes. She dropped them into her purse. Then she lowered the veil and started to turn away. She stopped, turned back, kissed her fingertips and touched the cold lips of the penniless dead one.

She turned around and left the vestry. Very quickly.

I stood unmoving, watching nothing, chill and lost.

When you take the money off a dead man's eyes, it means he can't pay his passage to Heaven.

That white woman sent Jedediah Parkman straight to hell.

I went after her.

IF I hadn't keeled over I'd have caught her before she got on the train.

She wasn't far ahead of me but my gut was burning so bad—I knew if I didn't get some grass or weeds into it I'd be in wicked shape. That happened once in Seattle. I barely got out of the emergency ward before they could X-ray me. Broke into the hospital kitchen, pumped about eight pounds of Caesar salad and half a bottle of Sparkletts water into my sac and wound up bareass cold in a hospital gown, out on a Seattle street in the dead of winter.

Hadn't thought that for a second before I went over on my face, half a block from the Danville train station. Legs went idiot on me and over I fell. Had just enough sense to go dark before I hit. Lay there, a car might run me over. No idea how long I was out—but not long. Came back and crawled on my belly like a reptile onto a patch of grass. Chewed, pulling myself on my elbows. Got enough in to get me up, staggered the half block to the station, fell onto the water fountain stuck on the wall. Drank till the stationmaster leaned way over the ticket window, staring. Couldn't go dark, he'd seen me.

"You got business here, mister?"

I felt the lava juices subsiding. I could walk. Went up to him, said, "My fiancé, you know, a bad fight, she come down this way—" I let it wait. He watched

me, wasn't giving away a little thing free.

"Look, we're supposed to be married next Thursday—I'm sorry I yelled at her. Half out of my—well, hell, mister, have you seen her? Tall girl, all in black, wearing a veil?" Sounded like a description of Mata Hari.

Old man scratched at the beard he'd sprouted since he'd come on at noon. "She bought a ticket for K. C. Train's 'bout to pull out."

Then I realized I'd been hearing the whoofing sounds of the train all this time. When my sac goes, everything goes. I started hearing and smelling and feeling the grain of the ticket counter under my hands. And I bolted out the door. Train was just getting ready to slide—express freight was almost loaded. Behind me the station-master was bellowing. "Ticket! Hey, mister—ticket!"

"Get it by the conductor."

I vaulted up onto the coach platform. The train edged out.

I pushed open the door to the coach and looked down the rows of seats. She was there, looking through the window into the darkness. I started toward her but thought better of it. A couple of dozen passengers were between her and me. I couldn't do anything here now anyway. I dropped into a scungy seat and puffs of dust went into the air.

I slid down and took off my right shoe. The twenty was folded neatly against the instep. It was all I'd put aside. But I knew the conductor would be along to punch my ticket. And I didn't want to get caught like Jed Parkman. I wanted my fare to be paid.

We'd see about it in Kansas City.

It was a change. Riding inside.

SHE went to a phone booth and dialed a place without looking up the number. I waited. She went out to stand in front of the terminal. After a while a car with two women came up and she got in. I went dark, opened the back door and slide in. They looked around and didn't see anything in the shadows back there.

The heavy-set woman driving asked, "Now what the hell was that?"

The pimply one with the plastic hair, seated in the middle, reached over the seat back and thumbed down the lock.

"Wind," she said.

"What wind?" the truck said.

But she pulled out.

I always liked K.C. Nice ride. Even in winter. But I didn't like the women. Not one of them.

They drove almost to the Missouri border, toward Weston. I knew a bourbon distillery out there. Best ever made. The truck pulled in at a big house set apart from slummy-looking places on a

street with only one corner light. Whorehouse. Had to be. It was.

I didn't understand but I'd by God certainly find out soon. I'd arrived. But Jed was still traveling.

THE truck said, "You pay the girl."

I picked out the tall, slim one in the harem pants and halter top. She couldn't be smart, I thought. With a face like that, to wind down in a crib was some kind of special stupid. Or something else.

We went upstairs. The room was like any bedroom. There were stuffed animals on the bed, a giraffe with pink day-glo spots, a koala, a floppy gopher or muskrat—I can't tell them apart. She had a photo of a movie star stuck in the frame of the bureau mirror. She took off the harem pants.

I said, "We'll talk."

She gave me a look I knew. Another freako.

"That's two bucks extra," she said.

I shook my head.

"Five should cover everything."

She shrugged and sat down on the edge of the bed, her thin legs straight out in front of her.

We stared at each other.

"Why'd you send Jed to Hell?"

Her head snapped up on her neck and she quivered like a hound on scent. She didn't even know how to ask me.

"You get the hell out of here!"

"I've got five bucks worth of something coming."

She bounced up off that bed and went straight across the room. She was screaming before the door was open.

"Bren! Bren! C'mon, Bren! Help up here!"

I heard the foundations of the house shake and the rumble of artillery on the next hill. Then something big and hairy came at me. He had to come through the door sidewise. I put up my hands and that was all. He carried me straight across the room, into the bureau. My back snapped against the edge of the bureau and he bent me till everything started to slip up toward the ceiling. The girl ran out, still shouting. When she was gone I ended it for him.

There was a trellis outside the window. I went down until the ivy ripped loose and I fell the rest of the way.

That night I slept on the front porch of the house next door, in the glider, watching the ambulance and then the police cars come and go. Two unmarked police cars stayed very late. I don't think they were on duty.

I WAITED two days, sleeping on the front porch of the house next door. I'd have gone dark more than I did but there were three empty lots between me and the whorehouse and the people with

the front porch had gone away for a while. I supposed on a winter vacation, maybe. There was plenty of weed and grass around and I let snow melt in an empty milk bottle. At night I'd go dark and steal Hydrox Cookies and milk and beef jerky from a twenty-four-hour market. I don't eat much, usually. Missed coffee, though.

On the second day I jimmied a window in the empty house. Just to be ready.

She came out toward evening of the second day.

I went dark, waited on the sidewalk for her and she walked straight into my fist.

In the empty house, I laid her out on a canopied bed in the master bedroom. I was slouched in a chair across from the bed when she came to and sat up. She shook her head, looked around, focused, saw me and started to let go with the screaming again.

I sat forward in the chair and said very softly, "What happened to Bren—I can do that again."

She looked sick and shut her mouth.

"Now we go back to where we were," I said, getting up.

I walked over and stood near her. She lay back, terrified, no other word for it.

"How did you know Jed?" My voice was level but I was hurting.

"I'm his daughter."

"I can make you tell the truth."

"I'm not lying, I'm his—I was his daughter."

"You're white."

She didn't say anything.

"Okay, why did you send him to hell? You know what it means to take the money."

She snorted a very shitty laugh.

"Lady, you better understand something. I don't know who the hell you are. But that old man found me when I was seven years old and kept me alive till I was old enough to go it on my own. Now he meant stuff to me, lady, so I can see myself getting mad enough at you to do just about anything. More green than even Bren. So you feel like telling me why you'd do something like that to a man who was kind to everybody?"

Her face went hard. Even scared, she hated.

"And just what the hell do you know? Yeah, he had kind for everybody. Everybody 'cept his own." Then, softly, "Everybody 'cept me."

I couldn't tell if she was sick or deluded or just putting me on. Lying? Not where she was. No reason for it. And she'd seen that Bren. No, she was telling the truth—as she believed it to be.

A white girl with old Jed for a father?

It didn't make any sense.

Unless . . .

There are some you can meet—the strange, twisted ones—and you know them by an aura, a scent, a *feel* about them, that if you had one *single word*—like "junkie" or "nympho" or "hooker" or "Bircher"—a key word that labeled their secret thing, you would understand all the inexplicable, off-center things about them. The one-word people. One word and you've got the handle on them. One word like "wino" or "diabetic" or "puritan" or—

"Passing?"

She didn't answer. She just stared at me and hated me. And I looked into her face to see it, now that I knew what it was—but it wasn't there, of course. She was good at it. And that explained what had been between her and old Jedediah Parkman. Why she'd kissed the dead meat and sent it straight to hell. But not the kind of hell Jed had consigned her to. If he'd had all that kind of love for stray cats like me I could imagine how strong his hate and frustration and shame would have been at one of his own pretending to be what she wasn't.

"You never know about people," I said to her. "He took in all kinds and didn't care where they came from or what they were. Just as long as they didn't lie about it. He had a lot of love, that guy."

She was waiting for me to do something bad to her, what she thought she had coming. I laughed, but not the way Jed used to laugh. Not that way.

"Lady, I ain't your daddy. He's punished you all he's ever going to. And you and me, neither one of us is white and we're too much alike for me to punish you."

Passing in the world. How about that. She didn't know what the color line even looked like. Black for white—hell, that's a cinch. Jed, Jed, you poor old nigger bastard. You knew I couldn't get home again and you taught me how to pass *into* this world so they wouldn't kill me. But you couldn't handle it when it happened to you.

I pulled my last five bucks out of my pocket and tossed it on the end of the bed.

"Here, baby, get it changed and keep a couple of silver dollars for your own party. Maybe Jed'll be waiting and you can straighten it out between you."

Then I went dark and started to leave. She was staring at where, I'd been, her mouth open, as I paused in the doorway.

"And keep the change," I said.

After all, she'd paid the dues for me, hadn't she? ★

They had one beautiful woman, one great brain and—in a world afraid of dying—nothing at all to lose!

THE DIRTY OLD MEN OF MAXSEC

PHYLLIS GOTLIEB

I

THE helicopter dipped down toward mountain peaks blue with shadow, hovered for a moment at the edge of the last light and sank into the dusk. Fenthree shivered.

"Seven minutes to unloading," said the pilot.

Fenthree peered uneasily into the deepening purple canyons.

"I don't see O'Leary's light."

"He won't show it while they're waiting for the bales."

"Think they'll figure anything's up?"

The pilot gave him a look, reached behind the seat and pulled up a bottle half-full of bourbon.

"Here, warm your feet."

Fenthree clapped a hand over his mouth. "No thanks," he murmured when he was able to con-

trol his gorge. "Hair of the dog never did me any good."

"Really tied one on, huh?"

"Farewell party." Fenthree carefully palpated the place under his breastbone where volcanic activity was threatening.

"They must of thought you were going to Aldebaran."

"I didn't tell them anything except that I was leaving," said Fenthree coldly, "so maybe they thought just that."

If the pilot's question had been a leading one it would lead nowhere.

The night was deepening at the horizon. To the southwest Fenthree could see a point of light and above it a mass of buildings black against the sky—his destination. He shivered again. His firm knees caught a little on the skintight black jersey material that was no protection in mountain air. The fleabrains at HQ had not considered how cold the trip would be. Spies had always worn black jersey — at least ever since anybody could remember.

In his black jersey and with his wits and his weapons, Fenthree was going down into the unknown. He wished he were back home where the rotten day had started.

THE evening before he had staggered home from the farewell party, his fourth so far. Which girl he had brought with him — or whether she had only been a figment of his delirium — he did not remember. He had also forgotten to take a couple of necessary pills. In the morning, alone and repentant, he had sworn as he tried to lift a head full of fried brains from the pillow.

He had rubbed his eyes half open, peered at the clock and reached to punch the chord on the keyboard that would allow him simultaneous possession of the kitchen and bathroom for twenty minutes. He paid a lot of rent for the twice-a-day privilege. At other times he used them singly. Right then they had been sealed and folded in some storage place in the vast building. He had wanted them both very badly.

His erratic hand, reaching for the keyboard, had knocked the heavy-based lamp off the table and sent it crashing into the panel.

A clap of broken vacuum had ensued and, before he had managed a breath, the kitchen sink had rammed him in the knees. He had opened his mouth to yell and a pot of scalding coffee had fallen from the vicinity of the ceiling, grazed his head and exploded on the carpet.

Breath jerked out of him. He had rubbed his spattered arm and shoulder and gaped at the ruin of his rooms, half-collapsed into each other. He had seen no sign of the bathroom. A frantic phone call had assured him that the accident had jammed every keyboard in the building. A thousand tenants were howling for his blood. Four to five hours would be needed to unscramble the mess.

He had rattled the receiver into the cradle and the airtube had

spat a blue paper on his night table. The color had identified the document as the notice for his final briefing, the confirmation that the mission was really on after all the months of weekend training in dark cellars and dusty warehouses.

Too much . . .

He had sat hunched in bed, too numb to move, the painfully desirable smell of the coffee around him — unreachable since every drop had blasted out of the pot.

Later he had stared at his smeared and bloated reflection in the shining crater of the sink. It had looked the way he felt — his head split like an arctic crevasse into icy depths of pain, his diaphragm heaving. He had wanted that bathroom — at any rate, he had had the sink.

Still later: "It is not a time for vanity." McAllifive, of Intelligence HQ, had folded his square hands and set his brow into lines of determination. "It is not a time for personal consideration." McAllifive's lips had belled and his bristle mustache had flared over them. "Nor for an individual's regard for danger. As a volunteer, Fenthree, you — "

McAllifive had paused, eyes blank, expression opaque. The Obligations Act had been passed many years ago and no one had volunteered for anything since. The force of habit and the glory of his own oratory had put him seventy-five years out of date. Fenthree had kept his face straight. To have smiled would have hurt his head.

McAllifive had cleared his throat. He had picked up the thick sheaf of Fenthree's dossier and leafed through it.

"I — uh — see you do list personal considerations."

He had rubbed his eyes wearily. Perhaps he, too, had had a hangover.

He had pressed a button and swiveled his chair. The horn-colored, translucent wall behind him had cleared to a dull day's swirl of mist around eyries and aircar perches.

He had said in quite a different voice, "We've got to find out — quickly and quietly — what we did wrong when we started rejuvenating. Or our world will fall apart. Rejuvenation seemed a good thing — hardly anybody refused treatment. Soreheads moved to the colonies. Criminals were exiled to MaxSec to live out their natural spans and die. Life should be full of order and progress. We've got order, all right, but — " he gestured toward the city of spires and machines — "we haven't had a new idea for three hundred years. And sometimes I wonder — was I ever really a boy, or was childhood just something I read about in *Huckleberry Finn*?"

"UNLOADING," said the pilot. They were over the small floodlit area. "Duck."

Fenthree crouched but he doubted he could be seen from below. The baled packages dropped. He poked his head up briefly and saw black figures converg-

ing on them. Next the 'copter was up again like a bird against the wind.

"Now we have three minutes to find O'Leary."

Fenthree pulled in his shoulders. Down there was the dark and the dark was unknown — and could be dangerous. What did it matter what went on down there?

His mind returned to his final briefing. McAllifive's words leaped to life in his brain, sharp and clear.

There is something going on down there. MaxSec is nearly a self-contained community. It's not policed — who could get away? All its internal affairs are run by the inmates. We drop supplies once a month by helicopter — of course, you'd know some of this, eh? Fenthree had said nothing.

You must know why you've been given intensive training over the past year.

Fenthree had not known. No one had remembered to tell him. McAllifive had tried to remedy the omission.

It's a situation that's ripened slowly. We've had steady radio contact with them. We were lucky to find a good man at their end, one willing to talk. Name's O'Leary, an old loser who's been there so long we had to go to quite a lot of trouble to find out why . . .

What does intelligence think they're doing that's so dangerous?

Your job to find out. I'll give you a list of the equipment they've asked for and you see if you can find out what they're trying to make with it. All we know, Fenthree, is that they're awfully lively and they're awfully busy — but they don't talk much and O'Leary's afraid to ask too many questions. You know — McAllifive's voice had taken on a touch of awe — *it doesn't seem to bother them at all that they're no longer young and that they're going to — uh — die. And they have a cumulative weight of experience that we can't match with our impaired memories. Without being treasonous, I have to admit that the J-process does impair the memory.*

Whom have they got there capable of planning anything?

Oh they've got plenty who could make plans. Not many who could carry them out. Linnaeus Ganzer used to be there but O'Leary reported him dead nearly a year ago.

Ganzer? But he invented the —

Don't let that influence you, Fenthree. The man was preaching sedition. You've got to keep a balanced mind on these things. Now — who do they have in charge? — oh yes, Corrigan. Pretty wily customer. Let's hope you won't have too much to do with him.

Fenthree had stared, suddenly awake.

You mean that's where I'm going? To MaxSec?

Yes. Didn't I mention that?

No. But go ahead . . .

As I say, this Corrigan's a very —

What's he in for?

Oh, he's a leper. Had to be isolated.

What?

Not now, Fenthree, not now.

No need to worry. He was the last leper on Earth. Had the best minds working on him for five years. Developed three new vaccines and five new antibiotics. Lucky break, in a way – really made us get the old gray cells working. Of course, he mutated a couple of new strains meanwhile – but it's all cleared up now . . .

But if he's cured, why is he still –

We-ell, he's not much on looks, you know. Be rather out of place with us here, don't you think?

I suppose so . . .

Yes. Well, he's got a brain in his head, all right, and if I were you I'd avoid him like the – I mean I'd be careful to keep out of his way.

And the others?

There's a bunch of toughs who used to call themselves the Tigers but I'd wager they won't give you any trouble. We pulled their claws for them. As for the rest, a misguided intellectual or two, more interested in their mush and milk than mischief now, I dare say – and that's the lot.

O'Leary?

O'Leary's quite – well, far gone, and finds it hard to get around. But you won't have to have anything to do with him at all. You see, you'll be going down there disguised as O'Leary and –

Disguised as O'Leary? How do you expect me to manage that?

Oh, we'll take care of it. We'll have everything ready. You'll be fitted out very well. No need for you to worry.

I'm sure.

We promised him something for his trouble, so when we leave you we'll pick him up, bring him back and give him the treatment again. You'll stay there as O'Leary until you've found out what we want to know.

What exactly do you want?

New ideas, Fenthree, new combinations of ideas, new experiences. We'll get them any way we can.

From a bunch of vicious, antisocial losers, lepers and anarchists? Why don't you just bring them here and ask them what they're doing?

He had apparently uttered blasphemy. McAllifive had reacted strongly.

Fenthree! All that we have built up here – all that we have fought for and defended with our blood – no, we can't admit anything's wrong after sustaining MaxSec and the J for three hundred years. We must keep this secret. Now, here are some pictures O'Leary took with the camera we sent him. You'll go to Department Z.08 and get your plan of MaxSec and the equipment and documents.

Fenthree had picked up the top picture from the file. *This is O'Leary?*

Uh – yes.

Fenthree had stared at the image of a wildhaired old troll, bloodshot eyes, ravaged face.

Ugh. What do you think you'll be able to do for him?

McAllifive had shrugged. Fenthree had licked dry lips. He had wanted more coffee and more sleep. He had tossed down the picture.

I don't want any part of this, sir. I want out. I have the privilege of asking for a sub, don't I?

Fenthree, you are the sub.

And if I refuse?

You'll be penalized.

I suppose you'll put me in Max-Sec or publish my J-count?

He had never admitted the number of his rejuvenations to anyone but it was on record, of course.

Not necessarily. We will simply publish some confidential information from your dossier. I'm afraid it will add a blemish to your reputation.

Fenthree strained his eyes in the darkness. He would be glad at least to get away from the din of the rotors.

The pilot said, "If you're so sc—I mean, not too anxious for the job, why didn't you ask for a sub?"

"I know my duty," said Fenthree.

The pilot choked.

"Yeah. Now where the hell's O'Leary?"

"He's supposed to show a light at the southeast corner of the fig tree grove."

"That's where we are but there's no light."

"Maybe he fell asleep under a tree."

"Not when he knows he's going home. I'll go south a bit and circle back."

But there was still no sign of a light on the second pass.

"Let's go home," Fenthree suggested.

"You crazy? I want to keep my skin in one piece. I'm calling HQ." The pilot muttered into the set, listened and grunted twice. He turned to Fenthree. "They think he might be sick or something. We can't put it all off now we've gone this far. You're to go down and find out what happened. Call us on O'Leary's radio. If we don't hear from you in three hours we'll move in. Got it?"

"Me? Go down just like that—when nobody knows what's going on? Why don't they try the radio to get hold of O'Leary?"

"We don't want to get the wind up. They talked to him this morning and he said he wouldn't call again except for an emergency. He didn't, so that's that. He must be sick."

"If he were sick it'd be an emergency and he'd have called," said Fenthree. "He could be here any minute."

"He isn't here now. MaxSec brass might have caught on to him." The pilot grinned at Fenthree's expression. "Anyway, McAllifive says you're to go down. It's no use arguing. Just get ready."

Fenthree readied himself numbly. He notched up the degrav—the pack was snug and neat against the broad flat of his back and the straps were well fastened. Dull pain beat on the back of his head and he wished he had taken a swig. But it was too late.

"Okay? Down you go."

Fenthree crouched by the chute for a long moment, searching for a word. Only one seemed to cover the situation. He said it with appropriate expressiveness and fell.

AIR rushed into the crevices of his body and heat fled through the mesh of his black jersey. He resisted the impulse to draw up his knees and conserve warmth at the risk of upsetting his balance as the soft whoosh of the degrav sent him tangling into tree branches. Angling his body, he avoided the whip and sting of twigs and got his feet on the ground – here it was a little warmer.

He looked up at the massed towers – pricked with a point or two of light – that bulked against the sky. Next he spent a minute poking about the gnarled trees, hoping for some trace of O'Leary. Nothing. Sighing, he unstrapped the degrav, reset it and sent it riding up its beam to the helicopter. He watched as it went up and as the helicopter diminished to a star and disappeared. He bit his lip.

Why me? Why am I here trying to hold the world together all by myself?

If the warm rich world he knew were rotting, why not let it rot? It would last as long as he. He tried to wrench his mind from his next thought but could not. Suppose the world should end first. He did not want to be around to see the end and that was why he was here.

His training took over, overwhelming his hangover and his distaste. He moved in silence toward the buildings. He crept along narrow paths of kitchen-garden plots, smelling damp earth and fresh greens. He had not known such odors in many lifetimes.

He crossed a courtyard flagged with hexagonal stones that would reflect heat to old chilled flesh under the sun; he stooped and touched them and felt a dying warmth. The moon was rising. Its light was heatless and inhospitable.

He stopped in a recessed doorway, a black shadow in blackness, black gloves, black cowl over his head, and reflected wryly on his spy's terrain. High stone walls surrounded him and the sheer rock-face fell away into canyons below.

Where was O'Leary?

II

LUZ, patrolling the dark corridors of MaxSec, swung her lantern slowly as she walked. The lantern swayed like a censer, spilling dancing coins of light on the brick walls. Her face was expressionless under the cropped white poll she wore like a cap of point d'Alençon and she was thinking of nothing at all. It was a difficult trick she had had a lot of time to learn and had learned well. She passed closed doors, some showing light through their transoms. At the end of the corridor she stopped at one that should have been dark and was not.

She rapped lightly and opened the door.

"Josefa?"

A crone with a merry eye was sitting up in bed smoking a thin black cigarette. She stuffed something into her nightgown pocket with a trembling hand.

"Early bird, ain't you?" she said. "Don't tell me about my beauty shleep. I'm waiting for my teef."

"They're unpacking the fragiles now," said Luz. "If the impressions didn't get broken on the way out — or the plates on the way in — you should have them soon. I see you're already enjoying my cigarettes."

Josefa hauled the box out of her pocket.

"You should know me by now." She tossed the box. "Why don't you lock your door?"

"I thought I could trust you, Josefa. Maybe I better give up."

Josefa leaned forward anxiously.

"Luzh, you ain't gonna tell on me? Luzh? Not to Corrigan? He'll take away my teef."

"Oh, Josefa."

Luz tossed the cigarettes back on the bed, picked up the lantern and walked out.

Down the stairs and along the hall she swung the lantern, scattered light, counted steps till she came to a cubbyhole that had been turned into an office. She turned off the lantern, hung it on a hook and punched a timeclock. Then she went down into the Common Room, found her chair in the corner, picked up her tatting and sat down. The silver shuttle spun light in her hands. Every once in a while she raised her eyes to the fire and the man standing in front of it.

CORRIGAN kicked a chunk of scattered coal into the fire and picked up his wine glass from the coffee table. He sipped, eased himself into his chair, sipped again and raised the glass to his line of sight.

"Something classic about this," he said. "Looking at the fire through the wine. Perhaps that is what wines and fires were made for."

"It's all dandelion's good for," said Dacosta. He broke open a fresh pack of cigarettes without looking at the trademark of the City.

"There are other things — if one only had the ingredients."

"Stop using the grapes for jam."

"No, no, Jonno. As long as we import milk powder — and we have no cows — what can we put on the bread?"

"Grow more berries. Or give in and ask for butter. If we made wine and distilled it we might even end up with brandy."

"I'm surprised, Jonno. I'd have thought you especially would want to be independent."

"Not to the point of idiocy. You don't destroy a prison by making it an economically self-perpetuating community."

"Depends on how you plan to destroy it."

"You haven't told me. I assume you have the details figured out."

Corrigan chuckled.

"Bendetto?"

Giovanetti blinked and pulled himself up in his chair.

"I could have sworn the helicopter slowed down and circled to the south after it dropped the supplies."

Giovanetti gave him a look.

"Maybe he forgot which way is north."

"Perhaps. But I think somebody ought to have a look by the southern wall."

"Corrigan, I've got a lot of respect for you but the boys ain't gonna like having to beat up the grove this time of night."

"Suppose our pilot forgot the cigars in the hold and decided to drop them in the figs rather than make you go without?"

"I already got the cigars."

But Giovanetti heaved his square chunk of a body out of the chair and padded off in his slippers, muttering.

Dacosta laughed.

"I've got a lot of respect for you, Corrigan," he aped Giovanetti.

Corrigan rinsed his teeth in yellow wine and spat into the flames.

"Of course you have, Jonno. If we did not all respect each other we would not have achieved what we have."

FENTHREE saw a clump of figures approaching, armed with rakes and brooms. He ducked quickly through the doorway into the house. The place was dark and quiet. He waited with his ear to the door.

Something's up . . .

The people outside passed. He switched on his flash and saw a series of small rooms with freezer units, sinks, bins, ovens. He tiptoed along the tile floor past refrigerators, cabinets, humming freezers, deep bins that smelled of earthy potatoes and turnips. Ropes of braided onions hung on hooks, looking like huge undersea pearls in the beam of a diver's lamp. He saw troughs of flour and sugar, mortars of allspice, nutmeg and crumbled mint and sweet basil. He began to feel a little heady.

He found the kitchen proper. It glowed faintly even in the dark with scrubbed white wood and enamel. He came to a narrow, winding, open stair and ascended it. He had not yet heard a sound or seen a light. Like a bat he sent out soundless waves of fear and curiosity – these were absorbed in emptiness. The ceiling was high – the floor was far below. Where he came from, six tiny expensive apartments would have been crammed in the intervening space. Squeezing his way from kitchen to bedroom in his amorphous City LivUnit he had not been able to imagine this kind of dwelling space.

The stairway paused on a landing where it divided itself into two short flights of steps. He guessed the snare here. To the left was probably the women's wing, to the right the men's. A moment's use of his senses confirmed his guess – faint traces of perfume came from his port side.

He turned right. He was not going to be set upon by some old biddy who would yell the house down.

He found himself in a corridor – on this area he had found briefing in the material McAllifive had given him. He made a careful

count of the doors on one side of the corridor. Luck and the base plan of MaxSec he had been given had brought him to the right building. He stopped at the fourth door, saw no light over the transom. Fenthree opened the door quietly and slipped inside.

"O'Leary," he whispered as loudle as he dared.

No answer. He crept across the room by moonlight and closed the drapes. Then he flicked on his pencil beam of light. The chairs, table, dresser in the room were clean and characterless. He opened the drawers, found socks, handkerchiefs, a few shirts, all marked with name tapes — O'L. The bathroom was empty.

Fenthree groped under the dresser and found the small secret radio taped on the underside. It had not been tampered with. He stood up, sweeping the room desperately with his flash, and found a sign—a tissue-wrapped package on the night table. Carefully unwrapped, it turned out to be a complete set of false teeth.

Fenthree had not seen such a thing for many years. He thought of the infirmary. If O'Leary were sick the infirmary was a possibility—in fact the only one Fenthree could imagine. It would be located one flight up, according to Fenthree's information — but that was as far away as the moon. Fenthree could don his disguise and crawl up there — in the dark he had a fair chance. If O'Leary had an infirmary room of his own it would help.

Fenthree had noticed a long flannel nightshirt in one of the drawers — it might add a useful touch to his disguise if he made it upstairs. He unpacked the necessary articles and shoved the knapsack under the bed. He retained the black leotard because its pockets stored a small arsenal but he turned back the wrist and ankle cuffs. He pulled over his head a thin bilious skin equipped with a hairy chin mole, pocks and wrinkles. He added a white wig and a pair of badly overgrown eyebrows. He covered his hands with thin gloves, brown-spotted and deeply veined. They fitted perfectly.

The image he found in the mirror nearly gave him back his hangover but he had to admit it resembled O'Leary. He shoved his feet into a pair of fleece-lined romeos he had found in the closet, dropped his flash into the drawer and quietly crept out. He sent up a fervent prayer that the two O'Learys would not confront each other in a populated area.

The flannel nightshirt caught badly on his jersey, and he had to bunch it in one hand to maintain his bent, shuffling gait. Finding anybody in the City to teach it to him had been hard.

He paused at the landing. The light there had been switched on. He was about to begin his ascent when he saw an old woman tottering down from the other wing. She also wore a nightshirt and was smoking a thin black cigarette.

Her reaction to the sight of him

confirmed his worst fears. Her eyes popped. The cigarette fell in a shower of sparks and she let out a piercing shriek.

"Don't hurt me, O'Leary—I didn't mean—I'll never take anything again. Don't come near meeeeeee-ee—"

Fenthree blinked at her. She dashed down the stairs, screeching, braids flying, nightgown billowing.

New sounds began to churn below. Doors opened and slammed. It was time to run. Frenthree tried to dash up the stairs and stumbled as the nightgown tangled his legs.

Voices rose.

"—think it could be—"

"—kiddin'? Crazy old bat got into the dandelion—"

"—dumb joker trying to scare—"

"—better find out—there he is!"

Fenthree clawed at the nightgown, heaved at the bannister to pull himself up; gray figures followed the voices and piled after him, squeaking like bats. There was no fear in them. They were ripe for excitement and variety.

"After him, boys, get him—"

"Get him for MaxSec—"

Fenthree yanked off his slippers and threw them. He tore at his nightshirt to get at the guns, but they were on him—bats, ghosts, musty draperies—they heaped on him, cackling.

Half-stifled, he gasped, "Let me up, I'm only O'Leary—"

"That voice—that ain't from here! Somebody's—"

They muffled him. The cold ridges of stone steps dug into his back. He was helpless.

"A stranger—a spy—" they shrilled. "Whack him with the *Shorter Oxford*, Cranshawe!"

"All right, boys, cut it," a dry voice said.

The ghosts melted reluctantly. Fenthree was able to sit up. A thin, graying man in his forties was coming up the stairs.

"Josefa found him on the landing, Dacosta."

Dacosta grunted.

"You look like O'Leary," he conceded. "Who are you?"

Fenthree was busy rubbing his back and getting his breath.

"Try and find out," he snarled.

"Okay," said Dacosta. "Sit on his head, Cranshawe."

Fenthree was forced back again. An elbow was crammed into his mouth. Dacosta ran hands over Fenthree's body and removed the collection of weapons.

"Hurry up, Dacosta. He bites."

Fenthree would have bitten a lot harder but he had paid too much for his teeth to risk damaging them.

"Move away a bit. I want to see his tattoo." Dacosta pulled away the black jersey over Fenthree's shoulder. "Hm—wsFen3. I guess we'll leave that to Luz. Let him up."

Fenthree spat a stream of words at Dacosta that nearly melted his teeth.

Dacosta smiled faintly and said, "I see your face has got smarmed around."

He pulled at the folds of skin

on Fenthree's neck and gave a yank. Fenthree felt the cold sting of air on his sweated face.

Dacosta nodded.

"You're a Cit, all right. Take him down to the Common Room, boys. Corrigan will want to see this."

A FIRE was burning in the Common Room. The cold stone floors were warmed by braided rugs. The chairs had knitted coverings. The room was big, comfortable and Fenthree might have found it pleasant had it not been a den of thieves and scoundrels — old and crafty ones. He faced Corrigan across a coffee table on which stood a single goblet with one drop of golden liquid at the bottom. He licked his lips.

Corrigan was a small man without a hair on him. Metallic scars and seams crawled over his skin and his blue-green eyes were opaque as turquoises set in Navajo silver. His face had only the slightest hint of the leper's characteristic leonine shape.

He said, "I believe, sir, you have some explaining to do."

Fenthree looked at the faces around him. The really old had been packed off to bed — Josefa with a sedative for her hysterics, Cranshawe to nurse his bitten elbow. The ones confronting him now were not feeble. Corrigan, Dacosta and most of the others wore flinty expressions. None looked like mush and milk.

He swallowed and said, "You won't get anything out of me."

He had been well briefed in Statements Permissible Under Capture During Espionage Against A Foreign Power.

"I wouldn't say that," said Dacosta. "We know you're a Cityman. And we have your tattoo."

"Lot of good that'll do you."

"My good man," said Corrigan, "you are not spying on the Venusian jBoq. We have a very competent registry here. Luz."

A woman put down a piece of work and rose from a chair in the corner of the room. She was slender, dressed in dark slacks and a sweater. Her hair was white but still strong and smooth. Her narrow, aquiline face shifted between beauty and ugliness as it turned against the light. Her eyes were the color of the winedrop in the glass.

She looked first at the number and then up into his face. In a moment she would know everything about him. His knees went weak. He did not want her to tell them what she would find in that register and he knew she would betray him. He bit his lip to keep from speaking. A trickle of blood ran down his chin.

"A nice touch," said Dacosta.

Luz said, "Don't be cruel, Jonno." She noted the number on a bit of paper and added: "You gentlemen may find that you have much in common."

"I hope not," growled Fenthree.

"I'll be back in a moment," Luz said, smiling.

She left the room.

Corrigan asked, "Have you and Dacosta ever met before?"

"Until he sat on my face half-an-hour ago I never knew or saw him."

Corrigan nodded.

"Good. I hope any other statements you may feel obliged to make will be as transparently truthful."

Fenthree's lips tightened. He had been trapped into giving Corrigan a control—a series of gestures, expressions and inflections that went with an honest answer.

Before he could open his mouth and put his foot in it again, Luz came back. She was gently leading by the arm a little old man in a flannel bathrobe. He had a winter-apple face and silvery hair combed neatly in a quiff across his forehead. Fenthree gritted his teeth. He would have preferred torture. But the old man, catching sight of Fenthree, beamed in utter surprise and delight.

"Why, Daddy," he cried, "I never thought I'd ever see you again!"

III

"WELL, William Stanton Fenwick, Third?"

Fenthree sat, his elbows on his knees, his face in his hands. He was flushing with shame, capillaries swollen purple under the smooth, lamp-tanned skin like strata to mark his age.

Corrigan said dryly, "It's a wise child that knows its father. Don't you think so, Fenthree?"

Dacosta said, "More likely the child's father to the man."

"Please stop," said Luz. You're both talking like children."

Fenthree lifted his sullen face. "Let them go ahead and laugh."

Corrigan fitted a cigarette into a silver holder and shook his head. "Unfortunately for you, Mr. Fenthree, this is not a laughing matter. When the World Bureau decides to send a spy into a place like MaxSec something serious must be going on. Jonathan, I think you relieved Mr. Fenthree of several weapons."

Fenthree dispiritedly watched his narco, his burner and his knife displayed on the table. He gave a start, then looked up and grinned at Dacosta, who shifted guiltily.

"He's holding out on you, Corrigan. Ask him for the automatic."

"Where is it?"

Something so uncomfortable came into Dacosta's eyes that for a split second Fenthree was sorry he had spoken.

Dacosta said in a low voice, "I want to keep it, Corrigan. In case I decide to put a bullet through my head."

"Jonno, for God's sake—"

Luz had spoken without raising her eyes from the clenched hands in her lap. A short, stocky man in sneakers moved up and grabbed at Dacosta's shoulder with a heavy hand. Dacosta took the gun out of his pocket and laid it on the table. Then he left the room without a word.

Corrigan picked up the gun,

admired it for a moment, aimed it at Fenthree.

"Perhaps you shouldn't have brought this to my attention, Mr. Fenthree, but it's too late to worry about that. How would you like to spend your last hundred and fifty years fertilizing the grapes in our vineyard?"

Fenthree said steadily, "The World Bureau would blast you off the face of the earth."

"More than likely," said Corrigan. "Do you think anyone here wouldn't agree it would be a good thing?"

He released the safety-catch.

"I don't want to die," Fenthree said. "Look, all I came here for was to spring O'Leary. There's no great secret to that—or if there is I don't want any more of it. The City decided they'd been unfair to him. They were going to bring him out and give him the J again. The secrecy was because they didn't want to admit they weren't perfect. The disguise was in case I couldn't find him right away—so I wouldn't stick out like a sore thumb while I was looking. As it turned out, I did stick out like a sore thumb and I still don't know why. But that's all it was," he spread his hands, "nothing more. Now," he added persuasively, "you don't begrudge O'Leary his freedom. I haven't done you any harm and you won't consider him much loss. So just let me get out of here with him and we'll forget this whole thing."

"I'm afraid that's impossible, Mr. Fenthree." Corrigan's voice was gentle. "You see, O'Leary's dead."

Fenthree's diaphragm buckled. Fear, hangover, disgust, regret piled on him. O'Leary had been going to go home, back to bright lights and gaiety—and youth, if it could be managed. And he had died. But the eyes around Fenthree were not terrified. Perhaps death happened often here.

"You didn't know why you stuck out like a sore thumb." Corrigan shook his head and sighed. "He died at noon today. Any fool could have realized it from the evidence—except a Cityman."

ONE of the other men spoke. He was tall, stout, had sunken eyes and his head was tonsured like a friar's.

"Hell's bells, man, the fellow was two hundred and sixty-four years old. He would have fallen apart if he had lived another day."

Fenthree murmured, "We'd have fixed him up—"

"Fixed what up?"

Fenthree was silent, staring at O'Leary's face and hands lying collapsed on the floor beside him. They hadn't gotten the truth out of him at any rate. O'Leary's death really had nothing to do with his mission. He raised his head.

"You have no reason to keep me here, then."

"We have an excellent reason." Corrigan smiled. "As an acknowledged secret agent you pose a delicate problem in the relationship between us and the City. You will

make a good bargaining lever and we are delighted to have you for a guest."

"Hostage, you mean?"

"No. We couldn't let you go even if we wanted to. Hadn't we better say you're our guest? This place is not called MaxSec for nothing. What else could we do with you?"

The short, chunky man grinned suddenly, showing yellow teeth. He drew a finger across his throat. Fenthree shivered, remembering McAllifive's promise to move in if he failed to get word in three hours. If McAllifive brought in force Fenthree's life would be instantly worthless. He had less than an hour to get back to O'Leary's radio.

How?

"Let's not make any jokes, Bendetto," Corrigan said. He added to Fenthree: "Of course you will be expecting someone to pick you up and—ah—O'Leary. The question is when?"

Fenthree swallowed. He had to keep patching the fabric of deception, whether or not they could tell that he was lying. And he wanted them to know he was being protected—but not so closely that they would kill him in their panic. He took a deep breath.

"Tomorrow night, about ten."

"Helicopters are rather noisy. How were they going to get past that one?"

How are you going to get past it, Fenthree?

"They'd have used an aircar. It can hold up to four people."

Corrigan nodded, satisfied.

"Then, sir, I can heartily wish you a good night's rest."

"All right." Fenthree stood up wearily. He would have to get to a radio first but he really did need a good sleep. "Where's my cell?"

"Cell?" Corrigan was shocked. "Don't misjudge us. You are already wearing O'Leary's nightgown. You might as well have his room. Tomorrow you will earn your keep. We do our best to be self-supporting here, you know. Goodnight."

"Goodnight, Mr. Fenthree," said Luz.

CORRIGAN hummed a little melody under his breath as he watched Fenthree being led out by Thorne, the tall man with the friar's haircut.

"You think that story of his holds water?" Giovanetti asked.

"Like a sieve. But it doesn't matter. No more throatslitting gestures, please, Bendetto. We'll do our best to make sure he doesn't find out anything but we'll treat him gently. We don't want to scare our little lamb. Speaking of lambs—where are the Tigers?"

"Down in the drains. The water conduit out of the converter sprang a leak. You think they'll make him jumpy?"

Corrigan smiled dreamily.

"You like the gun, Bendetto?"

"Yeah." Giovanetti had picked it up and was turning it about. It was a live thing in his hands. Light seemed to glow rather than reflect from it "Ain't had one of

these in a long time." His eyes met Corrigan's; he grinned. He slipped the gun into his pocket and stood up. "Too bad O'Leary had to kick off."

"Yes, after doing such a good job. It would have been useful to have had a spy in the City."

UNDERGROUND, in a passage gouged out of solid rock, the Tigers were working in the drains and grousing about the cold and damp. Attila poked Blooey in the shin with the toe of his gumboot.

"Get that light up there. Think I got X-ray eyes?"

Blooey raised the light and Attila went back to work with his torch, muttering, "Do it all ourselves, Corrigan says. Gotta be independent, says Corrigan. Corrigan can come down and weld his own goddamn pipes."

Blooey made no pertinent comment. He knew Corrigan was the nearest thing to a deity Attila would ever acknowledge.

"Can't you hurry, Attila? My arm's nearly falling off."

Attila wiped his face on the crook of his arm.

"Shut up an' gimme light."

"Somebody's coming. It's not the guys—they're down the other end."

"Now what?" Attila lowered his arms and turned off the torch. "Who's that?"

"Me," said Giovanetti. "You nearly through?"

"I was gonna knock off in a minute," Attila said. "Why? You come here to give us a hand?"

"Yeah," said Giovanetti. He pulled out the gun. "Corrigan wants you in the tank."

"What?"

"Don't drop the light." His thumb flicked off the safety catch as Attila grabbed the lantern from Blooey. "Get it up, Attila. And the other one."

Attila raised both hands, one holding the lantern. His coal-black eyes sparked with points of light.

"Whose idea was this?"

"I told you. Corrigan said."

"He wouldn't do this to us."

"Don't believe me. Just get going. And don't warn the others. I want them too."

When the Tigers were all locked in Giovanetti thumbed on the safety and dropped key and gun into his pocket.

Attila grabbed the bars.

"I'll get you—and whoever's in with you."

Giovanetti shook his head resignedly.

As he was leaving, Blooey called, "Hey, Benny, don't forget to turn the water back on."

"I won't," said Giovanetti.

"What'd you tell him that for?" Attila snarled.

"We need water too, don't we? Who do you think put him up to it?"

Attila muttered, "That bitch Luz, they'll do anything—"

"You shouldn't put her down just because she won't look at you," Blooey said.

Attila pushed him sprawling into a bunk.

"Why don't I shut you up for good?"

Blooey picked himself up.

"Because I run and fetch for you. Nobody else would. I stick with you guys because you're the only ones who remember what it was like in the old days—but that don't mean I have to go scared."

Attila oiled his knuckles on an olive cheekbone.

"Somebody's gonna go scared when I get outa here."

"DEFINITE information?" the button whispered in Fenthree's ear.

"Yes, I have definite information," Fenthree said in a low firm voice. He was curled up under the covers, cradling the radio with his body. "O'Leary's dead. He smiled grimly. "Died of old age."

He listened with concentration to the silence at the other end.

Then: "Did you meet Corrigan?"

"Yes, I met him."

"Watch out for him. He's a tough nut."

"Yeah. I found that out."

"How did you handle him?"

"Handle? I was the one who got handled."

McAllifive grunted.

"I suppose we'll have to contact them from here and work out a deal."

"Not unless you want my throat slit. They haven't touched this radio and I don't think they know about it. If they find out it'll mess up everything. Wait until they get in touch with you. I told them you'd made plans to pick me up tomorrow night at ten—so don't make me out a liar. They play for keeps."

"It's not likely we'll be able to pick you up that soon — but of course we'll make some arrangement. If they accept your story there's no reason why you can't go on as planned."

"That's what I thought," Fenthree mumbled.

"Don't worry. We'll get things fixed up. Meanwhile, find out what you can. We must have that information. Remember how much depends on it."

Fenthree muttered something he hoped was unintelligible and signed off. He hid the radio—it was all he had to connect him with the outside. They had taken everything else away—his equipment, O'Leary's false teeth and handkerchiefs—everything but the black jersey, now hanging empty and resourceless over a chair. And the nightgown.

He composed himself as best he could in his nonfolding bed, between nondisposable sheets, with uncollapsible walls around him, and succumbed to gloom. For Corrigan to have accepted a story as idiotic as Fenthree's, he would have to be stupid or have something big up his sleeve.

Fenthree did not think Corrigan was stupid.

III

AT THE highest point of MaxSec, in what had once been a guard-tower, a struldbrug named

Linnaeus Ganzer, still quite alive in spite of O'Leary's report to the City, labored through the night, covering page after page with a fine Spencerian script. His face was sharply eroded, with nothing loose about it except the eyelids, and while he had plenty of hair on his head, the texture was so fine with age that his scalp shone through, pink and ivory in the lamplight.

He was wearing a gray woolen suit with sagging pockets and, as he paused to consider a point in sentence structure, a chime came from one of them, pealing faintly in a sweet melancholy fall of Mozart. He fished out a platinum watch with Gothic numbers.

"Six o'clock," he said aloud. "Evening or morning?"

He glanced out through the window but the twilight sky told him nothing.

He turned back to the page.

. . . this is very nearly the conclusion of my account of these proceedings . . .

Three hundred and fifty years of practice ought to do something for a man's style.

In my account of these proceedings this is . . .

Try again.

This is very nearly the end—

That was true enough. He crossed out words neatly and wrote corrections in tiny letters as perfect as the rest. His readers might laugh at his fussiness—and then again, they might not.

This is the last—

The last will and testament of that damned old fool Linnaeus Ganzer. Cankered in mind, corroded in body, I give, devise and bequeath—what? He sighed, laid down the pen and leaned back in his chair. Evening or morning, he was tired. A framed statement above the desk returned his empty stare:

> The human body is so (rightly) ephemeral and corruptible in its nature and the human mind so (unfortunately) shortsighted and unelastic in its texture that to tease them out together through century after century is obscene.

A damned uncouth sentence. He was glad he had not written it. But it was there because he had caused it and its writer would never know he had been so honored by Linnaeus Ganzer.

He put his hand into his pocket and clasped the fob of his watch. It was a lucite globe in platinum claws, enclosing one single golden drop from the first batch of Juvenix, the hormone derivative that was still the basis of the J-treatment.

The lab had presented the watch and fob to him and another to his co-worker Aino Kokkinen, who now held his clasped between skeleton hands under the roots in the vineyard. Whatever possibilities of pain were left to Linnaeus Ganzer rose in a climax of regret. He and Kokkinen had been joined by more than friendship and profession.

Their sons and daughters had played together as babies and some had joined in marriage to give them common grandchildren. Like a couple of old trees with mingled branches they had dropped a hundred descendants.

Until after two hundred years of J, when the birthrate had almost stopped, they looked around and began to ask questions. Principally about the World Bureau's use of the J. One night they had stayed up until dawn, making a decision—middle-aged men two hundred and fifty years old.

It had been a night of scattered papers, littered stubs, coffee cups—a night to remember.

Linnaeus Ganzer preserved it in memory. Also its consequences.

A week later they had both found themselves in MaxSec.

MaxSec itself hardly made any difference to them. They were such intense workers that all their lives they had scarcely noticed their surroundings. Their wives were dead. Their families were dispersed. The two men took up scattered projects they had put aside many years before and set to work, quite satisfied to age and die.

But the J played them a cruel joke. They had used themselves as experimental subjects so often, taken so many treatments, that they were able only to grow old. Without mechanical aids to stimulate regrowth of flesh and skin their blood freshened itself and their senses sharpened, while bone crumbled and healed falteringly and flesh shriveled in dry air and desert sun. It seemed they would never die. One morning, after they had stayed talking once again late into the night, Linnaeus awoke to find Kokkinen stabbed through the heart with a paper spike.

His note said simply, "My dear friend, I have had enough."

The climax of pain broke in Linnaeus Ganzer but he had no tears and no relief.

A door opened. He heard shoes, thick with cobbling. The sky was paling. It was morning and Josefa had come to bring him breakfast.

FENTHREE stowed his wetmop in the closet and breathed hard, wishing he were back home where maid service was mechanical. Still, he was in pretty good shape for a Cityman. McAllifive had seen to that. He looked through the window to the south. It was a clear sunny morning, like every morning here. MaxSec was an artificial oasis in the midst of an eternal desert. He enjoyed the sight of the sun on the gnarled fig trees that looked so much like the men who tended them. The gardens were green and fresh and the air was pure blue and gold, not sodium yellow and fluorine blue. He sighed again, longing for something—breakfast, perhaps.

"Come on, Fenthree, get busy," a harsh voice called.

Fenthree picked up a broom and went on.

IN THE evening they let him stop and gave him a jug of

yellow wine and the run of the Quadrangle. He sat alone in the blue dusk, admiring the jug and putting off for a moment the pleasure of pressing its cool lip to his. He was trying to sort out his impressions of the day.

He had learned a lot about physical labor. He looked up at the walls around him. Lights flickered off and on as the younger inmates settled the very old for the night. He had been exempted from this task but not from any of the others. He had spudded beets, snipped snapbeans, popped peas, pushed wheelchairs in the sun and made himself lovable by chucking the chins of old ladies sent to MaxSec for hustling uncounted years before.

And he had listened. He had heard cries through closed doors, the chilling drawn-out ululations of the old who died with terrifying slowness because they had been withdrawn from the J.

He had thought he had heard the same noises during the night but had forgotten them in the morning because he had slept so well in the clear air.

He shivered in the black jersey sweat had soaked and dried on many times in the last twenty-four hours. He reached to uncork the wine, recalling other voices he had heard and recorded on the palimpsest of his brain.

"Oh yes, we used to have guards," Corrigan had said. "But I'm afraid our age made them nervous and their youth annoyed us. And there's nothing to guard here, as you can see. We sit in the sun like lizards. Our passions have evaporated . . ."

Fenthree had stared down the beanrows at Dacosta, who had been gathering weeds for incineration.

In case I decide to put a bullet through my head . . .

Corrigan had noticed the direction of his glance and had smiled.

"Mr. Dacosta is our devil's advocate, a living rebuttal for any argument."

Fenthree had thought of the short burly man, Giovanetti, and his throat-slitting suggestion. He had kept his mouth shut. Ivy on the walls, rugs to warm the floors but no soft flesh to cover the bones. The City had everything and these people had nothing but horror and death. Ah, but they had long powerful memories and hundred-year-old resentments.

"We have a pipeline to the ocean," Corrigan had said. "And we have a still—and converters that let us reuse water, of course—"

"Yeah, and we did all our own digging and pipe-laying and cast all the metal in our own forge," Dacosta had said.

"Now, Jonno, no jokes. Mr. Fenthree is here on serious business. We grow fruits and vegetables and we keep chickens and pigs—"

"I'm afraid I'll have to modify that." Luz had laughed from the shade of her straw sunhat. "We import a lot of meat extracts and cook the vegetables with them. We can't slaughter animals every

day. We're still pretty dependent on the City."

"That will be changed in time," Corrigan had said. "You're looking rather tired, Mr. Fenthree."

"No," Fenthree had said. He plucked at the black jersey. "Just tired of this spy syndrome. I brought a uniform with me. Couldn't you let me have it?"

"My goodness, I think it must have got into the laundry," Corrigan had said. "I don't know what we can find for you. We had no time to prepare, you see—but you're about Dacosta's height. Perhaps you could borrow something from him."

Fenthree had glanced over at Dacosta's rigid back.

"Thanks. I'll manage the way I am."

THE Quad was cool enough. He was sitting on the ledge of a stone-rimmed pond where an imported frog on a carefully nurtured lily-pad was croaking in deep bass. He had eaten well and had bathed his tired body and aired out his clothes. He was feeling physically satisfied in an unfamiliar way.

He was about to take his first swallow from the jug when the word "import" buzzed into his head again like a bee out of honey.

We import a lot of meat extracts and . . .

Mentally he consulted McAllifive's list. Live locusts, for instance—did they eat them with the honey taken from the hives of their imported bees? Fragments of thought began to gather but before they could fuse a door in the wall opposite opened and someone came out.

The someone was Luz. She was wearing the coarse blue dress and sandals she had worked in during the day. She came, hands in pockets, not hurrying, singing softly to herself. His thoughts scattered.

She sat down beside him. He looked at her pathetically.

"Don't tell me I forgot to wring out the mop."

She smiled.

"You did very well. We're always glad to have an extra hand."

"I haven't had experiences like these since I was a kid—and that was a long time ago."

"Then I guess your trip hasn't been too much of a loss."

"Certainly not—not with you here." He sensed the feather touch of danger and here and now it stimulated and amused him. He asked on a crazy impulse, "Luz, why do you think so many people in the City lose their memories?"

"Lose their memories? Do they?"

"Many people who've had a lot of J treatments seem to."

"I don't know why. I don't see why they should. I haven't lost any of mine."

He was contrite.

"I'm not snooping. I've just wondered."

"Maybe people are scared the memories will date them when they're so desperate to stay young. They start by suppressing recollections and end up forgetting what

it is they want to remember."

"As simple as that? It's hard to believe. You think people can remember anything they want—no matter how long they've lived?"

She shrugged and looked away.

"I told you—it depends what you want to remember, Fenthree."

After a moment he said awkwardly, "I've got this jug. You're welcome to share it."

She shook her head. He swigged. He gave a convulsive shudder, spat, swabbed his mouth on his sleeve, coughing.

"What the hell is in here?"

"Dandelion. We use the grapes for jam."

"Aagh! You ought to call it Max, sec."

"You'd get used to it if you were here long enough," she said without pity. "We don't have much sugar to spare. And we don't have many orgies here anyway."

"And nobody to sit out and enjoy the stars?"

She glanced up at them.

"Nearly everybody here has had about thirty thousand of these fine starlit nights. They're all the same." She turned to him. "What are you in the City, Fenthree?"

He stared at the disappointing jug with an offended expression, sighed and firmly tamped it.

"I code a computer to write children's books."

"Good grief, I didn't know there still were children."

"Oh yes. Our sector has the highest birth rate in the world. We have a hundred, enough for a school."

"I thought you were always a—a special agent."

He snorted. "Not when I can help it. I work at the Data Center and sometimes the kids come around in bunches and I show them how it works. I kind of like it." He grinned. "Do I sound like a goody-goody?"

"No, Fenthree, not in the least."

She was looking at him so steadily that he began to feel uneasy.

He said lightly, "What are you in MaxSec?"

She shrugged.

"Number Seven-one-eight-four one. Female Caucasian. That's enough for you to know, isn't it?"

"Yes. I like things simple."

He put his arm around her without awkwardness or hurry and found her mouth with his.

IV

"NOTHING," Fenthree whispered into the microphone. "They never let me out of sight. It's a damn farce."

"Well, keep your ears open."

He had kept his ears open, all right. He thought of the peaceful croaking of the frog and of Luz whispering in the moonlight—but it was nothing to call home about. And Luz's explanation of loss of memory, though it had seemed reasonable enough in the Quad, would not impress McAllifive under the hard lights of HQ. Nor could he possibly convey the shapeless fears and suspicions that washed around him.

"Don't waste any more time," the voice rasped on. "This is costing us money."

"I've got calluses to show I've been earning my keep," Fenthree snapped. He lowered his voice quickly. "Did they contact you?"

"Um, they want a deal in drugs and medical equipment. And no reprisals. It looks clean enough. I guess we'll have to give it to them."

"When are you picking me up?"

"O-seven-three-o, Thursday. Keep up the good work, Fenthree."

Fenthree lay back and eased his well-used muscles. Thirty-two more hours. He was going to ask for a hell of a long holiday if he got out of this place alive.

LUZ was sitting by her window, watching the moon. Because the window fronted the abyss it was fitted with a grille of welded metal rings. Their shadows drew picots of black lace on her meerschaum skin. She was thinking bitter thoughts about disorder and change. Once she had longed for change—now she hated it. Even the moon was growing old and scarred from the blasting of rockets.

Across the room Dacosta stirred and sat up to rest his arms on his knees. She glanced at him. He was thin. His veins and muscles were ridged and his skin was so transparent over them that he looked like a flayed man on an anatomy chart.

He said, "You're far away tonight, Luz—" and added from some bitterness of his own: "Farther than usual."

"Lots of things have been happening. I can't help thinking about them."

"Corrigan has his plans."

"If he has he doesn't discuss them with me."

"Doesn't he? I saw him giving you the eye to meet Fenthree accidentally by the lily pond."

"Oh. And you hovered around looking out for me the whole time, I suppose?"

"No, damn it. I have a little decency left—even after being here fifteen years."

"I don't want to quarrel with you, Jonno. What's bothering you?"

"I want to know what's going on. Corrigan would like to break up the whole system—MaxSec, the City, everything. But he's never said how he intends to go about it. The way he talks about being independent and self-supporting you'd think we were ready for lift-off on our way to Alpha Centauri. And it's pretty funny that a spy drops in all of a sudden and everybody goes around grinning as if they'd been expecting him for months."

"You're making things up out of nothing. Fenthree is no reason to get the wind up."

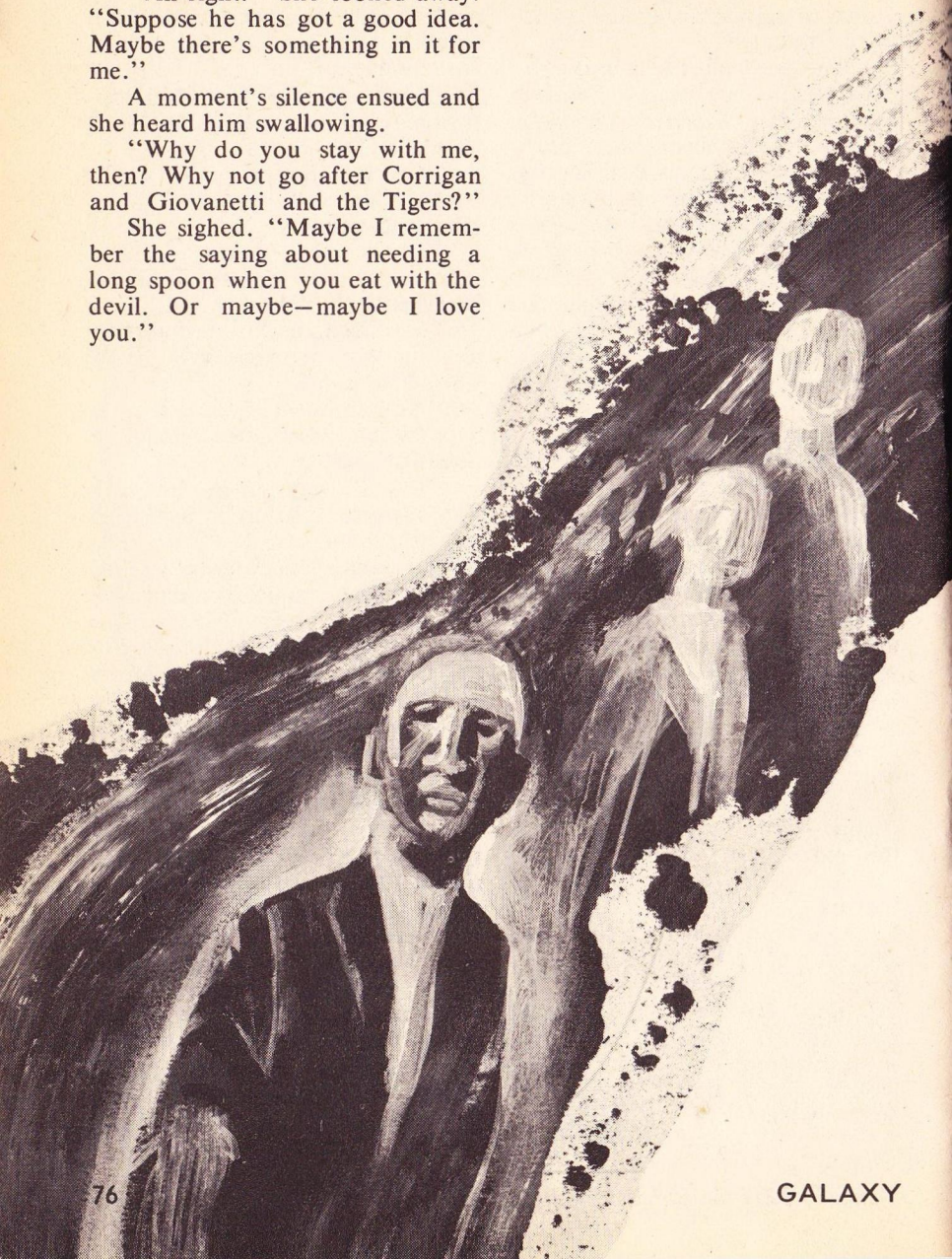
"Corrigan thinks so. He's cooking something up, and it doesn't smell good. It's dangerous. And you've been hanging around with him and the others."

"All right." She looked away. "Suppose he has got a good idea. Maybe there's something in it for me."

A moment's silence ensued and she heard him swallowing.

"Why do you stay with me, then? Why not go after Corrigan and Giovanetti and the Tigers?"

She sighed. "Maybe I remember the saying about needing a long spoon when you eat with the devil. Or maybe—maybe I love you."



"Don't tell me you love. I've been eating their dirt for fifteen years because you let me come to you—but you don't trust me any more than they do—and whatever you're willing to give me isn't enough to make up for that."

"I want to trust you. I've never meant to let Corrigan come between us. I have to have somebody—" She took a quivering breath. "All right. Corrigan thinks he'll find a way—he's made Ganzer try to find a derivative of the J. Not the original Juvenix but a hormone to—to reverse the aging process, not just retard it like the J does. I don't know how. And it's not the only thing. He wants something that will prevent the J from working—that will neutralize it. That's why Fenthree's here. O'Leary fished him out for us because Corrigan wanted a test subject. It could be years before we find out whether Ganzer's thing will work—but we have the years."

Dacosta had risen and was moving restlessly about the room.

"Can Ganzer do all this?"

"Corrigan thinks so."

He sat down on the bed again.

"But he's mad."

She was looking through the grille, down into the canyons where the moon shadows moved like clock hands.

"I don't know whether he's mad or not. I think he can pull it off."

"Even if Ganzer's able to make the stuff, which I doubt, what the hell does Corrigan think he's doing, setting himself against a world full of young men?"

She pressed her face against the cold metal.

"He's smart, Jonno. He knows what he's fighting. And if the neutralizer, the anti-J, works, it's a powerful weapon."

"Girl, you've sure knocked the breath out of me. You—the woman I've known and—and loved

for fifteen years. You'd go along with him? No matter who got hurt—because there might be something in it for you?"

"Look, you wanted me to tell you and I did. Please, Jonno, go to bed and get some sleep. I know every move in this scene."

"Do you?" Furious, he reached out and jerked her around. He grabbed the twist of hair that grew at her nape and pulled backward until her throat tightened and strained. "Do you?"

"Don't," she whispered. "Please, I—"

"You think—"

The words fell away. For the first time in all the years he had loved her he saw the fine white, faintly puckered scar that crossed her throat from ear to ear.

He let her go. Inconsequentially he remembered the thread of blood on Fenthree's chin.

She bent her neck over the scar. "I was on narcotics. Popular stuff. They caught me and took me off cold. I couldn't sweat it out. They patched me together. Two months later they passed the law for treated withdrawal. But I was in here and it was too late." She covered her face with an edge of the sheet. "I'm finally getting old. You've never had the J and you don't have to be in here. Maybe you don't care—but I don't want to be old. I don't want to turn into something horrible like Josefa. I don't want flesh hanging like hens' wattles or moles on my chin with bunches of hairs coming out of them. I don't want brown spots on my hands. I want time to stop—I can't bear it—"

He said, "I've never thought of time when I've been with you, Luz."

"I never forgot it." She wiped her eyes. "Please—don't tell anybody. Corrigan would kill me if he heard I let it out."

"You had to say that and you were supposed to be trusting me—you couldn't know I wouldn't tell."

He dressed quickly and left.

The moon swam in a dolphin's arc overhead and the shadows of the grille slid gently off her body and caught up the braided rug on the floor in colored circles of light. Still trembling inside, she tightened her flannel bathrobe and slipped out of the room and down the corridor.

LINNAEUS GANZER scratched on.

Forgive the garrulity of age while I make the point clear. You have told me so many times that all you want is simple justice. An old schoolroom tag of Horace says that justice with a limp will overtake the wing-footed felon. But justice with a limp is not simple! Think what twisted passions may burn in that maimed body.

A knock came at his door. He looked up irritably. His concluding passage was stretching unconscionably and he longed to be done. He consulted his watch. It was not time for breakfast.

He called, "Come in."

His voice sounded unused even to himself. He had spoken little since Kokkinen died. The door opened and Luz came up the tower steps.

He put down the pen and said nothing. He had used up all forms of greeting.

She sat down on his footstool and put a hand tentatively on his knee.

"Tell me, Luz."

"When I first came here and wanted so badly to be dead—you were the first person I'd ever met who truly saw humanity, people as they were. As they are."

"I'm not the only one you trust now, am I, Luz?" He lifted her chin. "Please tell me I'm not."

"You're the keystone here." His bones leaped under her hand. "Everything depends on you. Can you swear to me that what we're doing is right?"

"No, I can't. I do my best to see things clearly but I'm not my own judge. I have to struggle with moral problems like everyone else."

"I've done bad things—but they were the kind that could hurt only me. This scares me."

"The decision was yours also, Luz. And the weight is also on you."

"You've lived all those hundreds of years—is that the only answer you can give me?"

He touched her hand with his dry fingers.

"If I had a better one I wouldn't be in MaxSec."

After the door had closed on her he muttered, "Damnation," and went back to his conclusions. He was stung.

Is that the only answer?

It was the only one he could give her now. In a few hours she might have a better one. And his heart gave a little rueful stab of pain—because she loved him.

FENTHREE was surprised to find himself with nothing to do during the afternoon. He had been kept busy enough in the morning — and usually the able-bodied carried on during the siesta —but Corrigan had told him at lunch that the ransom terms had been agreed on and, with a gracious gesture, given him the rest of the time off. Fenthree would have liked to have shoved Corrigan's graciousness down his throat but he had accepted the gift. He was sure Corrigan was hoping to catch him spying. He intended merely to stay in his room and try to fit together the bits and pieces of his puzzle.

And they were only bits and pieces. He had nothing substantial and that was a cause for worry. He badly needed something to tell McAllifive or he would be in for it.

These people knew his motives, he was sure, and they were playing games with him. Deadly ones. And it seemed impossible for him to learn the rules.

He was walking down the corridor to his room, thinking hard, when he heard the howling he had learned to recognize as the

mindless call for death of some J-trapped creature.

As he passed the open door from which it came, a voice said, "This is too much. If Ganzer doesn't hurry up with that damn—"

Fenthree paused to gape through the doorway.

But Ganzer's supposed to be dead.

Thorne, the tall man with the friar's fringe and the black rings under his eyes was in the act of helping another man pull a bloody sheet from under a stick-thin body on the bed in the room. Thorne glanced over his shoulder, straightened and turned. Fenthree and Thorne exchanged looks of perfect recognition.

Thorne recovered first.

"Hullo, Fenthree."

Fenthree nodded toward the man on the bed.

"I'm sorry—"

"Yes. Can't do much for some of these poor devils." He bunched the sheet, tossed it into a corner and came out into the hall. "I say, Fenthree, would you mind letting me have a look at your teeth?"

Fenthree blinked.

"Are you a dentist?"

"No, a doctor. We have to double up." Fenthree opened his mouth uneasily. Thorne tapped at one tooth with a tongue depressor, gave another a tweak. "Hm—marvelous work. Wish we had some of your equipment." All the while the eyes bored into him from the dark recesses of their sockets. They were the most sinister Fenthree had ever seen. "Terrible situation here, you know. Ill-equipped, understaffed—"

"I thought Corrigan expected to change all that."

"Hardly think so. Hardly think we can get that far. We're quite helpless."

Thorne looked at the tongue depressor absently for a moment and closed his fingers around it. It crunched. With the air of one who has completely rectified an awkward situation he dropped the pieces into his pocket, smiled at Fenthree and went back into the room to bend over the man on the bed.

"How are you, old cock?"

Fenthree slipped quietly into the first room whose open door showed it to be empty. He wanted a few minutes to pull himself together.

Ganzer was alive. The fact made O'Leary a liar. He had probably been told to lie. Why would they want to say that Ganzer was dead? Perhaps so they could experiment quietly. Hadn't the juvenile hormone first been extracted by Ganzer? What was the old devil working on now? If Thorne mentioned the little encounter of a moment ago to Corrigan, Fenthree was as good as dead. Corrigan would realize what conclusions could be drawn from it.

Fenthree glanced around the room. It was nothing like O'Lea-

ry's. The bed was sloppily made. A bathrobe dangled over the open closet door, a pair of scruffy slippers beneath it. Papers, books, ashtrays littered all horizontal surfaces. A small filing cabinet on the dresser caught his eye. It was marked DACOSTA.

Fenthree quietly closed the door to the corridor. He had found an occupation for the afternoon.

V

THE file had no particular system. It was stuffed with scribbled notebooks and printed political tracts headed by admonitory exclamations in red letters. One bound book with a gaudy cover design snagged his attention. It was splashed red and black, handbound in rough rag paper that must have come out of the scrapbags at MaxSec. Tiny letters in one corner said: LUZ.

The text was a copy of a typescript, and its title was WORLD-PEOPLES vs JONATHAN DACOSTA.

Fenthree grinned. He could imagine Dacosta versus all the peoples of the world. But there ought to be at least some solid information in the file—perhaps enough to give him a line on how Dacosta was involved in things here.

He began to flip the pages. The book fell open, highlighting a statement circled in blue crayon:

> The human body is so (rightly) ephemeral and corruptible in its nature and the human mind so (unfortunately) shortsighted and unelastic in its texture that to tease them out together through century after century is obscene.

He shivered. He was damned glad that mind was not running around the City. But for the moment he was shut up with it. He began to close the book and paused. There must be something here that could help him—he could not be fool enough to let repugnance deter him from finding it. He began to leaf through the text again and in a few minutes became so involved in an abstruse legal passage that he realized too late that the door had opened behind him.

The cowl of his tunic was grasped from behind and twisted and a kick in the back of his knee buckled his legs beneath him.

"Get your dirty hands off it."

He dropped the book as he went down, chopped at the fist that was holding him. The grip loosened and he sat down suddenly.

Dacosta stood over him, breathing hard.

Dacosta rubbed at his wrist, then picked up the book and dusted it off with his sleeve. Fenthree felt his throat tenderly, took a couple of deep breaths and matched Dacosta's glare.

"You'd better get up. I want to finish this."

Fenthree rested his hands on his knees. He was not afraid of a

fight. But what would fighting Dacosta gain him?

"Finish what?"

"I'll listen to whatever excuse you've got ready. Then I'll answer that."

Fenthree stood up. His black jersey, a sovereign collector of lint, had already gathered so much he didn't even bother to brush it off. He took another deep breath, used it to lie.

"My superiors want to make MaxSec a better place. Part of my job is to find out what the people here are like—what they think and how they act on it."

"As you were demonstrating with Luz by the lily pond."

Fenthree flushed.

"If I'd known we had an audience I'd have put on a better show."

Dacosta's eyes glittered with impulsive malice.

"What happened wasn't Luz's idea, Fenthree. Corrigan put her up to it."

Fenthree said, "Then I'll be sure to thank him for it when I leave tomorrow. I envy you, Dacosta. You're going to stay here with her."

"You've been taking lessons from Corrigan, I see," said Dacosta.

His tone was not hostile.

"Can I ask a question?"

"Go ahead."

"That stuff—" he pointed to the file with its sheaves of inflammatory anti-J leaflets—"is that why you're here?"

"No." Now Dacosta reddened.

"But that trial, all the testimony—"

"You didn't read far enough," Dacosta said bitterly. "If you had you'd have seen that the case was laughed out of court. When everybody's young and happy about it how can a damn fool preaching that old age and death are necessary parts of life convert anybody? In the end there was nothing to convict me of."

"But Ganzer was sent here for that—"

"That was a hundred years ago. Nobody gave a damn by the time I started." He shrugged. "I renounced the City. I came here on principle."

"And you didn't have to come?"

"No. Go on, Fenthree. You've got the laugh on me now. Take it."

"No." Fenthree thought of the transcript in its gaudy cover, binding withered leaves. Martyrs were not made of such stuff. If history were ever written from the point of view of MaxSec it would be Corrigan and his leper's innocence that would count. "Luz said we had a lot in common, Dacosta. I think she meant we're both deadly afraid of being laughed at."

After a moment Dacosta said with an effort, "I don't have much use for you or your way of life, Fenthree, but I think I ought to warn you—"

"Dacosta." Giovanetti slipped into the room so quietly and noiselessly that he could only have been listening at the door. He jerked

a thumb. "Corrigan wants you. Now."

"I'm busy," said Dacosta. "I don't—"

"Corrigan says."

Giovanetti was patient and inexorable. Also, in spite of his shortness, he was strong and muscular—and difficult to resist without an open fight. Dacosta was forced to go along. He was barely able to send Fenthree a last desperate glance. It was not an appeal for help—rather, it was a message that Dacosta was now prepared to help him. And Fenthree was left helpless.

As soon as they were out of sight there was the sound of a scuffle, a muttered, "Get hold of him, there—"

And silence.

Fenthree stood frozen for an instant. He was about to leap and shut the door but by then Thorne and Corrigan were already in the room.

It was 1520 by Dacosta's clock. The helicopter was sixteen hours away.

Corrigan said, "Mr. Dacosta so often lets his feelings get the better of him. I think he might have harmed you if we hadn't come along, Mr. Fenthree."

"I didn't get that impression," said Fenthree dryly.

"We've known him so much longer," Corrigan murmured. "Now, if you'll come along with us, I think we can show you something that should please you."

Fenthree walked with them down the corridor.

He was thinking of furies which had beaten in shuttered hearts for three hundred years, of bitter plans for revenge whispered from hater to hater.

And he was the City personified.

THE Common Room held a hundred people scrubbed and dressed in their best. They ringed a table. From a tray in its center rose a majestic ham, cinnamon-glazed, diamond-scored, studded with cloves. It was wreathed in small, barbecued fryers and roast potatoes sprinkled with parsley. The tray was surrounded by bowls heaped with fresh, crisp things Fenthree had not seen in his rich City for many years—wheels of cucumber and tomato and crinkled lettuce and endive. Dusty bottles of liquid emitted a dark glitter that did not come from dandelions. He licked his lips. Luz, in a red dress, was standing with the others, watching him, her face grave and beautiful.

"You are the first Cityman we have seen in many years," said Corrigan. "You have not been with us long but we feel we have come to know you, Fenthree. And we want you to know we will not forget you."

Dredged in relief, ravished in all his senses, Fenthree capitulated.

Hours later the lights went out. Fenthree knew only hands—they pulled, pushed, carried him up steps and down.

Taking me to bed, those nice . . .

He smiled his delight, his gratitude.

Nice, lovely people...

His love for them and creation held while they peeled off his clothes.

Now they're putting me to...

Hands slipped him between cool sheets where he sank lightly down, degravved, a floating seed.

A needle pricked him once.

A voice – quite distant, for he had drifted far – said, "That ought to take good care of him."

A dry laugh sounded. For the flicker of an instant, he stirred, struggled to pull mind and body together and failed. He slept. He dreamed.

A DISEMBODIED observer, an eye in the ceiling, he watched Fenthree walking down the halls of J-Central. Bon vivant Fenthree, a bit thick around the middle, a little red in the nose and very ripe for J.

Men and machines were waiting to receive him. He was stripped, anesthetized, stretched on the table beneath the complex of machines. He had served an obligatory term of two years as an orderly at J-Central for every treatment he had taken and he knew every step of the process. He watched as needles darted in and out of the faraway body, tubes sucked out, cleansed and replaced the blood.

Days telescoped into moments under the godlike eye of Fenthree-in-the-ceiling as the machines hummed and quivered like drones around a monarch. On the cleansed and purified flesh a hundred wire brushes converged, whirred, whined, raised blood, withdrew. The slow cocoon of scab spun dark red, mottled with the translucent green of serum ooze. Fenthree watched Fenthree metamorphosed, a chrysalis of his own liquids.

The cocoon dried, tightened, darkened under the blink and flash of days. Men came with instruments to pry it open and expose the wound for a second scabbing. They hovered, converged and withdrew.

Fenthree's essence writhed in the ceiling, gibbering. There was no flayed man in the shell, mewling for his skin. Only a knot of white bones that collapsed into dust under the force of his eyes.

The men in white raised their faces to the ceiling and grinned with naked skulls.

"Now you will feed the grapes in the orchard," they said.

Fenthree shrieked.

A TOE was jabbing Dacosta in the ribs. Not hard but insistently. He rolled over and sat up stiffly, aching from contact with the cold stone floor. His ears were ringing. He shook his head and rubbed the stars from his eyes. He looked up. Attila, Palfrey, Simpkins and Blooey were sitting on bunks around him, watching. Beyond them he saw bars.

Nobody had taken the trouble to lift him to a bunk. He knew he would not get much sympathy.

"Don't look at me," he said. "I didn't put you in here."

"We know that." Attila showed his teeth. "We don't mind having you with us."

Dacosta massaged his stiff arms and wondered if it were safe to get up.

"How long have I been in?"

"Couple of hours," said Blooey. "They threw you in stinking of ether."

"Giovanetti?"

"Him and Woolsey."

Dacosta pulled himself up and sat on the edge of a bunk. Nobody interfered with him.

"Same thing happen with you?"

Blooey said, "Giovanetti took us with a gun."

"Oh," said Dacosta.

Attila's brows quirked.

"Like to know where he got it."

"Like to know why he did it," said Blooey. "What'd we ever do?"

"I think Dacosta knows something," said Attila. He rubbed his knuckles over his cheekbones. "I think he ought to tell us about it."

Dacosta looked up at him. He saw thick hair, brows, mustache, black as pitch against olive skin. The light of living coals lurked in Attila's eyes.

And Dacosta accepted a hard fact about himself — the reason no one ever wanted to trust him or tell him anything confidential was his face. It was transparent. Also he could not keep his mouth shut or tell a convincing lie.

But he tried.

"I don't know a thing."

Attila pulled him up by the shirt and slammed him against the upper bunk. He hung on, gasping.

"Go easy on the shirt. It's my second best."

Attila laughed.

"Think you can get off with wise-cracks?"

"Leave him alone, Attila," said Blooey. "He didn't do anything to you."

"Don't waste your breath, Blooey," Dacosta said.

Attila folded his arms and grinned.

"Maybe we don't even have to bother with you. We got to settle with Giovanetti and the rest we can shake out of Luz when we get upstairs. We got a permanent score to settle with her."

Dacosta struggled to hide his desperation. "Corrigan will come down on you like a ton of bricks."

"No." Attila shook his head. "He needs us. Luz and you are nothing. Corrigan don't care what we do to you or her."

"Leave Luz alone. You know she didn't get you put in here."

"No, we don't know, because you didn't tell us yet."

"If I tell you will you swear you'll leave her alone?"

"Okay," said Attila.

But there was no promise in his eyes.

DACOSTA twisted restlessly on his thin mattress. His shoulders ached from being shoved against the bunk and he was still queasy from the ether — but worst of all, he was sick with shame. He had blamed

Luz for not trusting him. He did not think Corrigan would hurt her because of what she had told him — once Fenthree was gone the information would be safe. But his knowledge did him no good against Attila. The one person with whom he might have used it to advantage was Fenthree — and there he had been shut up.

All he had done with his whole life had been to make noble gestures that had accomplished nothing. WORLDPEOPLES vs. DACOSTA. The world was pretty safe when he was its enemy.

Around him the Tigers snored and muttered in their sleep. A shabby crew. They had been strong and evil — they were very close to being sterile and useless old men. They had aged without growing up. He did not blame them for their loyalty to Corrigan who used them and made them forget they were growing old. They were one more mark against the City. There must be better uses for their vitality than they had been able to find and more just means of control than the ones they had been subjected to.

He did not blame the Tigers but he hated them. He shifted his aching shoulders and cursed the lot. Corrigan, Thorne, Giovanetti, too. And MaxSec. As a young man struggling through the usual tortures of adolescence he had sometimes thought that middle life — beyond the raw passion and gracelessness of youth — would be a kind of golden age. MaxSec had disabused him. He pillowed his head on his folded arms and wished tonight were last night or tomorrow night on some other world.

And he thought of Luz.

VI

LUZ sat on the edge of her bed as the night wore out. She was sleepless and grainy-eyed. There was nothing more for her to do. Linnaeus Ganzer crossed his last *t*. And Fenthree leaped out of his nightmare in a cold sweat, clawing at the edges of the bed. He sat up, shivering.

The dream was no stranger to him. He had known it with minor variations before every J-treatment and all his guilts and fears were wrapped in it. Thank God he was leaving MaxSec today. He stood up and stretched. Fresh winds blew around him from the nacreous morning sky and swept his horrors away.

The hour was six-thirty. He would be out of here in an hour. He was surprised to discover that even after last night's orgy of food and drink and all the terrors of nightmare he felt physically great. He dressed, whistling. Someone had thought to launder his clothes during the night. He stopped whistling and leaned toward his image in the mirror. It was tan, trig, unmarked. It was not very good at answering questions.

Later he waited with Luz and Corrigan in the courtyard, his heart pounding so heavily it seemed to be

shaking the stones under his feet. This was his last chance to ask questions, fit pieces together. He read no answers in Corrigan's bland face or in Luz's tired and darkened eyes. And what had happened to Dacosta?

A familiar sound rose and grew from the blue distance.

Corrigan said, "I believe these belong to you, Mr. Fenthree."

He produced the narco, the burner, the knife, and the gun. Fenthree stowed them away.

He said, "Thank you—" and added with even deeper embarrassment and with no previous intention: "Take good care of my boy."

"We will indeed," said Corrigan.

The helicopter dipped and came down within the shadow of the walls. Thorne and Giovanetti pulled out the crated supplies of the ransom exchange. As Fenthree turned to her Luz came to life.

She said, "Perhaps you will visit us again, Mr. Fenthree."

"I hope to God not," said Fenthree.

But he took the sting from the words by kissing her mouth before he climbed in beside the yawning pilot.

LUZ did not wait to see the helicopter vanish. She started toward the kitchen, where morning noises were beginning. Corrigan hurried after her and put a hand on her shoulder.

"Luz, do you know what this means? We pulled it off."

She moved away from him.

"I want the key to the tank, Corrigan."

"It's in my pocket," he said. "You'll have to get it from me. And I don't mind if Dacosta cools off for a while. You and I have plenty to talk about."

"There's nothing to say. It's over."

"No, Luz, it's only beginning." He reached for her again. "Stay with me a moment. Please."

She said in a trembling voice, "You've ruined that poor man—at least in terms of his own life. He may end up here for nothing, the way you did, and—and become like you. Or they'll blow the place out from under us. I want the key, Corrigan. I've had enough."

"I told you, I don't care about Dacosta." He sat on a wooden bench near the doorway. "Please, sit down and hear me out. I have no legions to cheer for me. I ought to be able to express triumph in some way, even to someone who hates me." He glanced at her side-long through narrowed eyes. "You didn't mind that little interlude with Fenthree, did you? You could have warned him."

A smell of coffee blew out on the morning air. She found a handkerchief and began to wipe away the makeup she had used to freshen her face.

"I wanted to be young again. Now I'm not so sure. But Linnaeus thought it was right—and I trust him."

"Poor Luz." Corrigan laughed. "You build on sand."

"What are you talking about?"

"Don't you know why I wanted us to be young again? Not for any love of humanity. When Fenthree's wrinkles and varicose veins come back again and his cirrhosis of the liver starts acting up right after the next J, there's going to be some merry hell raised in the City. They'll be coming to visit us again — but they'll be coming with a very healthy respect for the old men of MaxSec. And we'll have young and healthy men to meet them. MaxSec will be rebuilt till no stranger knows where he's going once he's inside the walls. We'll have hostages, Luz, and you'll see what kind of terms we'll be dictating."

"And Linnaeus agreed to all of that?"

"He did. I could have told you. But why should I spoil your faith in him?"

"Why should you now?"

"Because that's my pleasure, what I've been waiting for," Corrigan said simply.

Luz examined an old man's dream of revenge. It was crazy. It would kill them all. But it was what he lived on and would work for. A plumbline to hell.

"Corrigan, you're mad."

"No. Just angry. You know — you're a fine-looking woman, Luz." He shrugged. "To be honest, I've forgotten what the women outside even looked like. Except for you there's hardly anything here but shrunken paps and swollen ankles. For years upon years — I lived in the toolshed for three years, and another two in the infirmary where the world thought it owed me something — I never even saw the woman who brought me food. She shoved it through the door and ran. All I saw was Thorne. He stuck me with needles eight times a day till I couldn't move from the sore and sting, and the damn dry scabby thing twisted its way around my body and mutated till it even took the hair from my head. I used to lie there and think about you quite a lot, Luz, and how you turned away in disgust when you first looked at me."

He placed a grayed lizard's claw on her knee and she accepted it as she accepted his twisting of her horrified pity into disgust. There was no unwinding Corrigan now.

"No more lepers. Only one dirty old man in the world. I don't know why — but I think a leper should have some dignity. Lying awake all those damned sore nights — made me into a microcosm of hate." He rubbed his palms together and stood up smiling. "I don't want you now, Luz, but mine's a kind of lust that keeps me alive. Maybe you'd call it a filthy name. For me its name is justice."

"Corrigan, I don't care what you do with your hate," Luz whispered. "Please give me the key."

THE key was an etched metal plate. Her hand made a fist around it and a dull horror was grasping her. She was almost numb. Ganzer had betrayed her. Corrigan

had tricked her. If the J-neutralizer lived up to the claims made for it, Fenthree would be destroyed. Fenthree was a fool but he had been an actual threat to no one and she respected his modest humanity – she could not bear the thought of his being sentenced to the long twilight of incontinence and delirium she waited for every day. And it was too late to do anything.

She remembered O'Leary's radio. She wanted more than anything in the world to free Dacosta but she did not want all the lives around her destroyed by knaves and fools. Perhaps the City might still be able to do something to help Fenthree. Whether they did or not, they could stop Corrigan.

The Common Room was still heaped with dirty dishes from last night and Josefa was sweeping up crumbs and bits of smashed crockery with a witch's besom. She pulled at Luz's arm.

"Linnaeus didn't eat his breakfast this morning."

"Who cares? Let me go, Josefa. I'll talk to you later." She dashed up the stair and down the hall.

The room was empty and characterless again. Nobody had forgotten any teeth. MaxSec may have marked Fenthree but he himself had scratched no surfaces. She kneeled, reaching under the dresser. There was nothing there. Nothing in back of it, either. Nothing in the closet, nothing under the bed. She picked herself up, pushing back her hair and fighting down the blackness before her eyes. The mirror showed her a face she did not like.

Giovanetti said, "You looking for the radio?"

He was standing in the doorway in his sneakers, grinning with all his yellow teeth. She stared at him and her mind balked.

"I took it apart," he explained. "because we don't need it any more."

He turned and went quietly down the corridor.

SHE went down the underground steps like a sleepwalker. A few years with Dacosta was all the future she could hope for – if the others would leave them alone. The sound of bickering rose up the stairwell and she remembered abruptly that the Tigers were also down there. She would let someone else free them – Corrigan, if he wanted them out.

Attila saw her and yelled, "It's her – "

She realized that, as low as her spirits had sunk, there were further depths. Corrigan had neglected to mention that Dacosta was locked in the same cell as the Tigers. It was another of his little surprises.

"Get out, Luz," Dacosta called.

"No, hang around, Luz," a Tiger said. "We want to talk to you."

Attila leaned against the bars.

"If she wants Dacosta in one piece she won't go back."

Dacosta said bitterly, "He's playing it both ways. Yesterday he promised – "

"Never mind, Jonno." She pressed the key against the lock and the door burst open and swung back with a clang. She tried to run but Attila jumped out, caught her by the arm, and slapped her face. Dacosta lunged forward but Tigers grabbed him.

Blooey nipped out without any fuss, flung his arms around Attila's legs and yanked up with all his strength. Attila's arms flew out, he yelped and crashed down hard on his nose. Breakfast whistled down the dumbwaiter and nobody paid much attention to it.

The other Tigers let go of Dacosta to go after Blooey. Dacosta jumped into the fight. He cracked a Tiger's head against the bars and the bars rang. Then the world exploded.

Thunder broke overhead and echoes unfolded in every stone in the walls.

Dacosta lurched over to Luz, who had shrunk back to the wall. Attila jumped up and ran howling, a hand to his bloody nose, followed by several henchmen. They scrambled for the stairs. Blooey stayed where he was. He had not been frightened either by the melee or the explosion.

He said, "If MaxSec's gonna get it — we're safer here."

Dacosta was holding Luz tightly.

"There may be people hurt up there."

"Okay. You be the boss."

They ran up the stairs. The passages were empty — everyone had been at breakfast. But in the arcade that led to the Quad they found people yelling and screaming.

"Get to your rooms," Dacosta yelled. "If you aren't hurt — get to your rooms."

He hoped the rooms were still there. The source of the explosion certainly seemed to be in the Quad. He pushed his way through.

The mouth of the arcade was choked with rubble. The Quad was cloudy with dust and heaped with great broken blocks still scabbed with crumbling mortar. A side of the pond had fallen in. The lilies were torn and spattered and a frog leaped crazily among the stones. Nothing else was moving. Ganzer's tower had collapsed. A teetering rock crashed down into the canyon with diminishing echoes.

Luz clutched Dacosta's arm.

"Where's Linnaeus?"

"Nothing's left alive here. He may have been away when it happened."

"I — I think he must have been home." said Luz. "Or at least where he lived."

IN THE hall they passed Thorne leading Attila and Palfrey, both in a state of distress.

"How many hurt?" Dacosta asked.

"At least these two," said Thorne. "I'm not quite sure how it happened."

He gave Dacosta an odd look and led his charges down the hall.

Blooey grinned. "I think I'd better find myself a nice safe place."

He went off quickly.

"Let's find Corrigan," Dacosta said.

Corrigan sat in the Common Room, his head in his hands.

"What happened with the tower? Where's Ganzer?"

"I – think he blew himself up," Corrigan said heavily.

"Blew himself up? I thought the tower fell."

"It exploded. I saw it." Tears shone in Corrigan's eyes. "All my work – "

"He didn't have explosives."

"He knew how to make them."

"I just can't believe he'd – "

A scuffle sounded in the hall. Giovanetti came in, dragging Josefa by the wrist. She was sniveling and squeaking with fear.

"I caught her going down the hall with Ganzer's watch," said Giovanetti. "When I went after her she ran off and tried to hide in a broom closet."

"I was gonna give it to her, honest, Corrigan. I tried this morning, but she wouldn't stop long enough, she said she'd see me later. Please, Corrigan, don't gim me a black mark."

"Let her loose, Bendetto. Give it to whom, Josefa?"

"Ganzer told me to give it to Luz." She dragged a crumpled envelope from her pocket. "I was supposed to give this to you and the watch to Luz. Please, Corrigan – "

Corrigan was already ripping open the envelope.

"Give her the watch and get out of here."

Corrigan read. His face flamed, then purpled. Giovanetti shot him a frightened glance and left the room. It took Corrigan minutes to finish the letter. He dropped it and sat limp and shuddering.

Dacosta picked it up.

"You don't mind now, Corrigan? I know nearly everything."

Corrigan said nothing.

"Read it to me," Luz whispered.

Dacosta drew her aside to a corner of the room and they read it together.

> . . . very nearly the end of this account, and of my life, thank heaven! This is the last day I am spending on earth. If I had tears left I would weep with happiness – I have been so enraged with this driftwood body for the last hundred years.
>
> Did you honestly believe a man three hundred and seventy-two years old could develop new processes and formulae based on work he did in the spring of youthful intellect nearly three hundred and fifty years before? And if he could, do you think he would do it for you, Corrigan?
>
> Forgive the garrulity of age while I make clear my point. You have told me so many times that all you want is simple justice. An old schoolroom tag of Horace says that Justice with a limp will overtake the wing-footed felon. But justice with a limp is not simple! Think what

twisted passions may burn in that maimed body.

If I apply the instance to you it is not because of your body, which never repelled me, but because of your twisted spirit, which never stopped doing so. And that man on whom you wanted to test the anti-J, was he to suffer on your account? I think not.

I admit that I am as guilty as you, because in order to retain my peace, my privacy and my complacency I let you force me to make empty promises that bloated your dreams of empire and gave false hope to suffering people. It is the only crime I have committed and I beg forgiveness for it.

The serum I prepared for your victim was a simple anti-hangover remedy; it amused me and kept me busy. But since I am sure the City, being the kind of society it is, must have developed it many years ago there will be no loss if I take it with me when I destroy the tower.

The task of rebuilding before the loss is discovered by the authorities will keep you busy, Corrigan, and will do you good. The re-J, of course, does not exist — not yet — except in your dreams. Even if they are possible, such things are not for you.

I hate to destroy the books and equipment gathered over three hundred years but they are dusty and antiquated. Without me they are garbage. I leave you only my sympathy and my respect for your power. When you are less bitter tell Luz that I loved her.

Yours faithfully,
Linnaeus Ganzer.

"DON'T cry for him, Luz," said Dacosta.

But she could not stop.

A familiar and ominous clamor came swelling down the halls. Corrigan jumped to his feet.

"The Tigers!"

"Yes, I can hear," said Dacosta.

Corrigan's voice came tinged with fear.

"I don't know what to tell them."

"Yeah. The way it turns out — you shoved them in the tank for nothing."

"I've got to get out of here." The noise was coming closer. "I've got to have time to think. Dacosta, stall them for me."

"No thanks, Corrigan. They nearly dismantled me last night and I don't want to go through that again."

Luz touched his sleeve.

"Please, Jonno."

"No, Luz. He's got to tell them the truth. You know, Corrigan, it wasn't a very smart idea shutting me in with them. The way things leak out around here I got to know nearly everything and — uh — I'm afraid they got it out of me."

Corrigan shot him a look of pure terror.

"They'll kill me!"

"Show them the letter. It's proof Ganzer tricked you. That's all you need."

"And let them know – let them think I'm such a fool? Are you out of your mind?"

"No, Corrigan. You'll turn them round. You know how. The old oil, Corrigan. I know you. You'll tell them how Ganzer tricked them and you'll get them so mad at Ganzer that if the tower weren't down already they'd tear it down. Come on, Luz, let's go."

They were out by the side door as the Tigers came blazing in.

"I'm afraid they'll hurt him," Luz said.

"Not if he can get two words in first. They have to patch it up – they need each other."

They stopped by the arcade. In the Quad a few old men were picking a cautious way among the blocks. He found his handkerchief and wiped a trace of blood from the corner of her mouth.

"Are you all right?"

"Yes." She was clasping the watch. Suddenly in her hands it began to peal the hour with all its accustomed sweetness. "Nine o'clock." She shivered and turned her face away. "I wasn't just crying for him."

"I know. But what you believed in was never really much of a hope."

"No. Only a dream – and I'm a fool."

"You didn't know it was just a dream when you came down to the tank for me – with the Tigers waiting for you."

"I told you. I love you."

"I believe you." He kissed her. "We're a pair of fools, you know?" He looked somberly at the wreckage. "All we've got out of the great plans is a big mess to clean up."

"Nothing to hope for."

"All ashes, no Phoenix. But at least Fenthree didn't get hurt." He smiled. "He said he envied me for staying here with you."

She laughed. "He's a polite liar. But I'm glad you're here with me."

"NOT bad," said the pilot, who had leaned over to leer at Luz through the helicopter's doorway. "Get to spend much time with her?"

"Some," said Fenthree.

"What's she in for?"

"She wouldn't say."

"Any more in there like her?"

"None that I could see."

"Didn't find out very much, did you?"

Fenthree said, "I found out they're a miserable and pathetic bunch and they don't relish growing old and dying any more than we do."

The pilot gulped and said, "Hey, watch the language there, fella. That could get you into bad trouble."

Fenthree stared at him. Uneasiness swept him into a cold sweat. The words had not seemed

out of order. Had he changed somehow in the scarcely more than two days he had been away? It was unlikely. He wanted to be home and back at his job and there would probably be a couple of parties to celebrate his return — after his debriefing by McAllifive, of course. He pushed the unease aside and began to think about his report.

He stared unseeingly at the rugged country and the blue sky.

MaxSec considered him a fool and a coward. It took an effort to admit it but he had enough honesty to do so. And maybe he was a bit of both. But MaxSec had made a mistake when it confused foolishness with stupidity. Neither threats nor temptations had kept him from knowing that something was going on.

If his ears had not been playing tricks on him — and he was sure they had not — the reference to Ganzer meant the old man was alive. That would mean O'Leary had been a liar and that nothing he had told McAllifive could be relied on. It was very unlikely that O'Leary was lying for fun. Since O'Leary's reports had raised the World Bureau's suspicions, it followed that Corrigan had actually wanted someone to come to MaxSec. Corrigan's possible reasons stymied Fenthree. He would have to leave that problem to McAllifive.

His line of logic was substantiated by the fact that he had not met the Tigers or anyone of their description, although he had seen nearly everyone else in MaxSec. Corrigan was the toughest customer he had ever known — seconded by Giovanetti — but they were not the Tigers. Perhaps Corrigan had kept his animals out of the way so Fenthree would not be frightened or suspicious. Fenthree smiled grimly.

McAllifive had had to promise no reprisals in order to rescue his agent — but Fenthree brought back enough to justify an investigation by a good-sized force of armed men, if only to shake MaxSec up a little. The thought of Corrigan trembling at gunpoint was a positive pleasure to Fenthree. But the investigators would have to be warned not to let Corrigan open his mouth or he might end up with the guns.

Fenthree's conclusions were simple. MaxSec may have been busy but it was not cheerful and vital, as McAllifive had been led to believe. It was running on pain, hate and anger — conditions of life the City could not live with or tolerate for humans anywhere. It would have to find new ones or die. Perhaps it would have to give up the J and go back to shortened lives and immortality through children. Perhaps. He hoped not, while he was still around, but perhaps. Because hope was not in MaxSec.

Not with those old men who hated age and death. If Ganzer was working on some kind of J-treatment it could only mean he wanted to turn old men young. The aim had Fenthree's sympathy. But his feelings about Corrigan

were something else again. Corrigan wanted something far more complex than just to get back his youth, but whether his plotting was justified or not failed to matter to Fenthree. He was still burning with humiliation over his experiences as a hostage and he longed for revenge.

He had been threatened with his own gun, ridiculed with the secret of his past, forced to sweat buckets to earn his keep – He had also been offered the loveliest woman MaxSec knew and had been given marvelous food and drink. He wondered if MaxSec would be on bread and beans for weeks to make up for the feast – he shifted uncomfortably.

Why should it bother him if uniformed men with guns went down the corridors past the doors where the dying howled and wept? He thought of Josefa and her harshly veined hands, of Dacosta with his tattered papers and his idiot pride. Of Luz. How could he be avenged on the terrible ephemerality of their flesh? The shadow of his dream folded back on him.

The craggy wastes were gone and the air was warming over the expanse of the City. Was one human being of the thousand millions down there threatened by MaxSec? Would one of those lives be sweetened if it were punished?

The question sat like a weight on the back of his neck. He began to think of McAllifive and his blackmail. There was another kind of score to settle.

McAllifive wanted a story from him. He thought about that. And about his experiences as a coder of children's books – about how he took random plot elements and fed them into the machine and got stories neat as strings of sausages. in return.

He wondered what the machine could do with that list of the products and equipment sent to MaxSec. He wondered what he could do with it, since he knew how the process worked.

His mind began to spin, tentatively at first, then busily. To do what he planned would take courage – perhaps more than MaxSec thought he had. He grinned.

"What's so funny?" the pilot asked.

"Nothing," said Fenthree. "Let's have some of that footwarmer now, mac." ✶

HOW TO KIDNAP A MOON

ROBERT S. RICHARDSON

The moons of Mars may be ours for the taking. But do we want them?

"PHOBOS AND DEIMOS, two tiny moons of Earth—"

Sounds strange, doesn't it? All right, so to describe Phobos and Deimos sounds strange now—but times change. Mars I and Mars II today. Earth II and Earth III tomorrow. "Give me a place to stand and to rest my lever on," said Archimedes, "and I can move the Earth." Similarly, give us the necessary energy and we can move the satellites of Mars to Earth.

Vague, general discussions never had much interest for me. Exactly how would one go about kidnaping a planet's moon? Or moons? I think our understanding of the problem will be simplified if we start with something easy—like latching onto an asteroid.

We know of several asteroids—Apollo, Adonis, Amor, Icarus, and Hermes—which approach us within a few million miles or less. But their orbits all intersect the Earth's at such a large angle that to divert them into a suitable path for capture would require a trajecterotomy on their orbital elements of major proportions. (Another slight difficulty is that, except for Icarus, they are all hopelessly lost.) The best candidate for capture would be

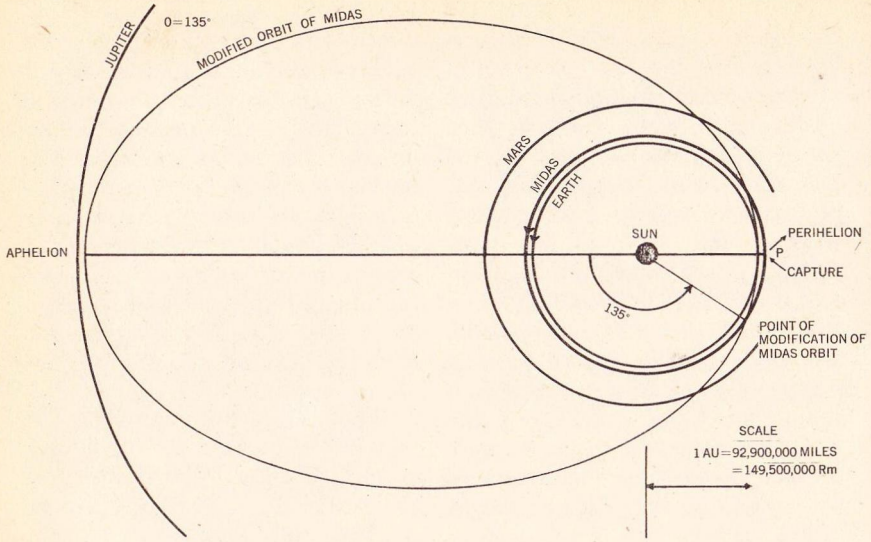
an asteroid like (443) Eros, revolving near the Earth in an orbit of low eccentricity about the same as that of Mercury. Eros at perihelion is 105,300,000 miles or 1.133 AU away from the sun. (For our purposes we can regard the astronomical unit, AU, as the mean distance of the Earth from the sun: 1 AU = 92,900,000 miles = 149,500,000 km.) It would seem that if the Earth passed Eros at perihelion their distance apart should be 1.133 − 1.000 = 0.133 AU, or 12,400,000 miles. Because of the considerable inclination of its orbit, however, Eros can never come closer to Earth than 13,840,000 miles. The asteroid's diameter is estimated as ten miles—about the same as that of Phobos, or Mars I.

In order to simplify matters we are going to begin by considering the capture of a theoretical asteroid revolving around the sun in a perfectly circular orbit at the minimum distance of Eros, or 1.133 AU. Although no such body is known that does not mean that no such body exists. Looking for asteroids used to be big business. I am aware of no present major observation program devoted exclusively to the discovery of asteroids. The bodies we have mentioned were all picked up purely accidentally on photographs taken for some other purpose.

Let us, for reference purposes, name our postulated asteroid Midas—not that a golden touch is particularly pertinent to our world today, but we are dealing in bold dreams. Two steps are involved in the capture of Midas. First we have to modify its orbit so as to force it close enough to the Earth to make capture possible. Then we have to capture it—that is, change its velocity to keep it revolving around the Earth permanently in the type of orbit desired.

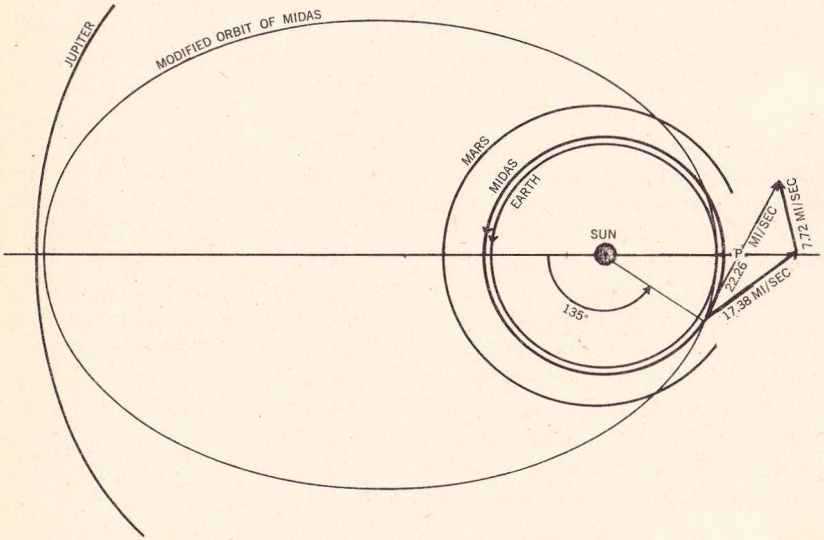
Since Midas is revolving in a circle it might seem that one point to apply a velocity modification to its orbit would be as good as another. And such was the opinion of the master minds originally charged with the program. So they announced the capture of Midas would occur at P (Fig. 1), since it happened the Earth would soon arrive at that point. This automatically made P the perihelion of Midas' modified orbit and the point opposite the farthest from the sun, the aphelion. It was decided that the velocity modification would be applied at an angular distance of 135° from aphelion. To simplify discussion, let's also assume that Midas and the Earth are revolving in the same plane*—and follow through on the original

* In this discussion I have borrowed heavily from an article by Su-Shu Huang, "Velocity Modification of an Astronomical Body for Capture by the Earth," Publications of the Astronomical Society of the Pacific, Vol. 73, No. 435, p. 429.



Figs. 1 and 2:

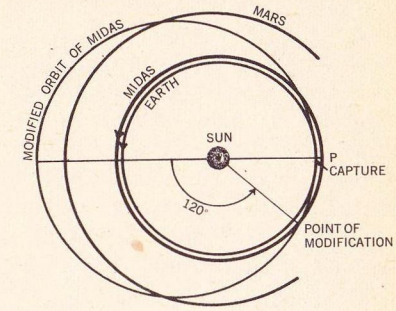
Velocity change and resulting orbit of hypothetical asteroid "Midas," when modification to original orbit is applied 135° from aphelion.



postulate of the master minds mentioned.

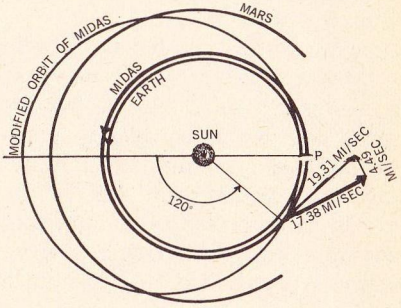
Since Midas is orbiting in a circle, its distance from the sun and its orbital velocity are constant. At 1.133 AU from the sun this velocity would be 17.38 mi/sec. Note that Midas' velocity is always perpendicular to the direction of the sun. That is, it has no velocity toward or away from the sun—i.e. no radial velocity.

Calculations show the velocity required to produce the desired modification in the orbit of Midas to be rather disturbing (Fig. 2). For the asteroid to make contact with the Earth at P will necessitate a drastic change in its velocity. We will have to jump it by 3.71 mi/sec in a forward direction and give it a radical velocity of 6.77 mi/sec toward the sun, or inward—a total velocity change of 7.72 mi/sec. These changes are so large, in fact, that if the Earth did not interfere, it would be forced into an orbit that took it from 1 AU at perihelion out to slightly beyond the orbit of Jupiter at aphelion. Instead of changing Midas into an Earth satellite, we would be in danger of having converted it into a Trojan asteroid.



Figs. 3 and 4:

Velocity change and resulting orbit of Midas when modification to original orbit is applied 120° from aphelion.



SO THE officials in charge, after being suitably honored with citations and medals, were fired and a whole new bunch was taken on. The new heads took pains to

point out that the trouble all came from their predecessors' trying to make Midas change course too abruptly. Why all the hurry? Midas had been revolving in its present orbit for probably several million years. What difference were a few months more or less going to make? So they proposed to back up a little and make the point of velocity modification 120° from aphelion (Fig. 3).

This slight difference of only 15° was found to produce a gratifying reduction in the velocity requirements (Fig. 4). To contact the Earth, Midas now needed an increase in forward velocity of only 1.28 mi/sec. and a radical velocity sunward of 4.30 mi/sec., or a total change of 4.49 mi/sec. The resulting orbit would be less eccentric and much smaller than the one arrived at in the earlier calculations.

Midas now traveled only slightly beyond the orbit of Mars at aphelion. Plainly, the farther we make the point of velocity modification from the point of contact, the more economical will be the energy requirements—a fact that should have been obvious from everyday experience. In turning a corner in a car, one does not maintain original speed until one reaches the intersection—then jam on the brakes and swing the wheel around through ninety degrees. Rather, one starts to slow down and ease the car around in the proper direction well beforehand.

After all practical considerations were taken into account, it was finally agreed to apply the velocity modification 30° from the aphelion of Midas' new orbit (Fig. 5). Thus modified, the projected orbit of Midas was scarcely distinguishable from that of the Earth. A reduction of 0.51 mi/sec. in forward velocity and a velocity of 0.60 mi/sec sunward, were sufficient to force Midas into contact with the Earth at P. The total change in velocity required was so small, in fact, as to be scarcely perceptible on the scale of our diagram (Fig. 6).

But the object was not to contact Midas—or smash into it—but to capture it. The project called for changing Midas from an asteroid revolving around the sun into a satellite in permanent revolution around the Earth. And this was a much tougher proposition than merely steering the asteroid into close proximity to the Earth—for now we were confronted by a three-body problem for which no general solution was possible.

Thanks to large computers, given the necessary numerical information we now can solve the problem for three, four, five—or virtually any number of bodies. If one of the three bodies, however, were insignificant in mass compared with the other two, we could obtain a general idea of its motion

through application of Jacobi's integral, or the restricted three-body problem. Here we are certainly justified in regarding Midas as insignificant in mass compared with the sun and Earth. We are also going to neglect the moon as being too puny to be worthy of our attention. Although the Jacobian integral will not yield the exact orbit of a particle, it does give us valuable information as to the regions of space in which it is permitted to move and forbidden to move. It was from such considerations that G. W. Hill, in 1878, demonstrated that there is a superior limit to the distance to which the moon can recede from the Earth.

In our satellite-capture operation, although we now have Midas cornered, so to speak, it is still full of flight. Formerly having a wild animal cornered was not at all the same as having it securely locked in a cage for exhibition in a zoo or circus. Now all this is changed. One needs only to shoot a bullet containing a powerful tranquilizer into the animal's hide. The animal obligingly topples over permitting its easy capture. To continue the metaphor, we have reached the stage where it becomes necessary to administer the modification shot to Midas, one that will turn it from a minor planet freely orbiting around the sun into a satellite tamely revolving around the Earth. Stated in more formal terms, we must modify the Midas' velocity so as to bring it "within the E-lobe"—that is, within a region of space surrounding the Earth from which it cannot escape.

Let's say that we wish to make Midas enter the E-lobe as a satel-

Velocity change and resulting orbit of Midas when modification to original orbit is applied 120° from aphelion.

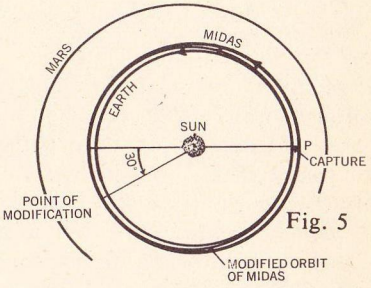


Fig. 5

Velocity change and resulting orbit of Midas when modification to original orbit is applied 30° from aphelion. The amount of the velocity modification in this case is so small as to be scarcely perceptible.

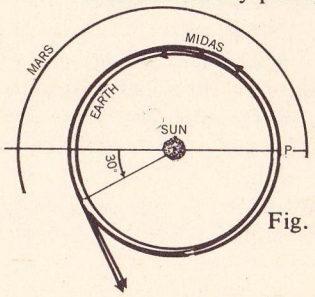


Fig. 6

Table 1

Velocity Changes Required to Make Midas Revolve in an Approximate 24-hour Orbit

Starting Position from Aphelion	Semi-major Axis	Eccentricity	Velocities Required to Bring into E-lobe	
			Min.	Max.
135°	3.02 AU	0.668	4.14 mi/sec.	7.97 mi/sec.
120	1.44	0.307	1.89	5.72
30	1.07	0.067	0.85	4.68

lite revolving in an approximately 24-hour orbit. The velocity required will depend on its original orbit as well as on how the encounter occurs. Here the best we can do is to give the lower and upper limits necessary for capture in the three starting positions we have considered. See Table I.

Remember that these figures apply to a hypothetical asteroid originally revolving in an exceptionally easy orbit for capture. Our only purpose in citing them is to furnish us with a basis for theory—we have not lost sight of our original intention to capture the Martian satellites. Although we shall consider specifically only the capture of Deimos, the same general remarks also apply to Phobos.

PROBABLY no two satellites in the solar system are better known to readers of science fact and fiction than Phobos and Deimos of Mars, so we shall describe them only briefly.

The revolution of both satellites is direct in practically circular orbits (Fig. 7). By "direct" we mean that, seen from a vantage point looking down on the north pole of Mars, they would appear to be moving in the opposite direction from that of the hands of a clock. Phobos revolves 5,830 miles from the center of Mars in a period of 7 hours 39.2 minutes. Since Mars rotates on its axis in 24 hours 37.4 minutes, we see that Phobos moves considerably faster than a point on the planet's surface. Thus as viewed from Mars, Phobos would rise in the west and set in the east. Phobos is still the only known satellite that revolves faster than its primary rotates, not ex-

cepting Janus, the newly discovered inner satellite of Saturn. Deimos revolves 14,600 miles from the center of Mars in a period of 1 day 6 hours 17.9 minutes.

Phobos and Deimos were discovered by Asaph Hall of the U.S. Naval Observatory at the exceptionally close approach of Mars in August, 1877. Their approximate orbits became available a few days later and, of course, are quite accurately known now—although astronomers who specialize in satellite work would probably tell you that the theory of their motion still leaves much to be desired.

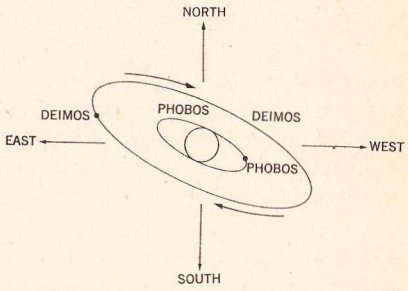
While the orbits of the satellites are known with high precision, we still know next to nothing about the satellites themselves. The different values given for their size are merely estimates based upon their brightness (albedo). In the present discussion we shall adopt ten miles as the diameter of Phobos and five as the diameter of Deimos.

To find their masses we must measure their disturbing attraction upon some other body. For such tiny bodies this is impossible. So the only way to get at their mass is to take the shaky values for their size and make a still shakier guess at their density. Let us say their density is the same as that of Mars—or about four times that of water. Even for such tiny bodies this gives masses that seem tremendous compared with familiar terrestrial objects we think of as "large"—such as elephants, dinosaurs, boulders, etc. Thus on our assumptions the mass of Deimos comes out at 10^{18} grams—or about a million million tons.

Scarcely had the Naval Observatory announced the discovery of Phobos and Deimos when someone called attention to the remarkable similarity of their orbits to those of the two little moons of Mars described by Jonathan Swift in his *Gulliver's Travels*. The most speculative hypotheses have been advanced to account for this similarity, ranging from clairvoyance to making Swift a Martian who arrived on Earth via flying saucer. Certainly no telescope was in existence powerful enough to reveal

Fig. 7

Orbits of Phobos and Deimos projected against background of sky as seen in an inverting telescope. Warning to reader: don't try to figure out the *modus operandi* of these motions. You'll go crazy.



the satellites when Swift began writing *Gulliver* in 1721. My own explanation is both simple and dull. I think the Dean of St. Patrick's made an awesomely lucky guess.

In 1959 the Russian scientist, I. S. Shklovskiy, asserted that in his opinion Phobos is a hollow shell and therefore of artificial origin. He seems to have been led to this conclusion by the apparent secular—or very slow—acceleration in the motion of Phobos. Such an acceleration might be produced by the resistance of a highly rarefied upper Martian atmosphere. The resistance encountered would be negligible for a solid Phobos but might be appreciable for a thin-shell model satellite. Since all authorities are not agreed upon the reality of Phobos' apparent acceleration, Shklovskiy's hypothesis has failed to receive much support.

WE MIGHT go to work on Deimos much as we did on Midas. Again we make the simplifying assumption that Mars and the Earth revolve in the same plane—as they do to within two degrees. The orbit we get for Deimos will be an ellipse varying

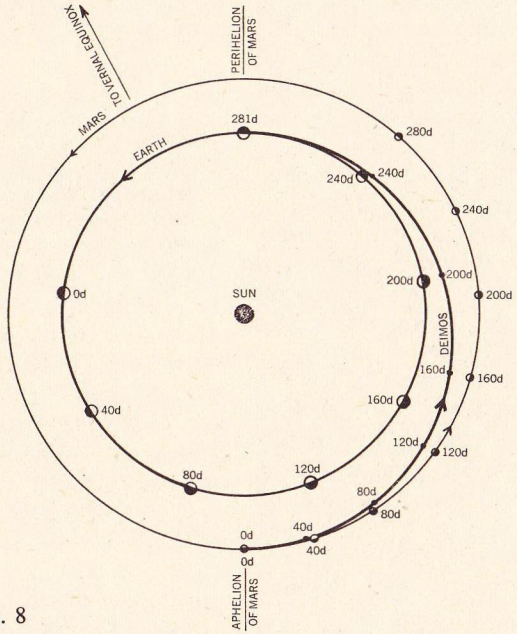


Fig. 8

Transfer orbit of Deimos from Mars to Earth when satellite is detached at aphelion of Mars.

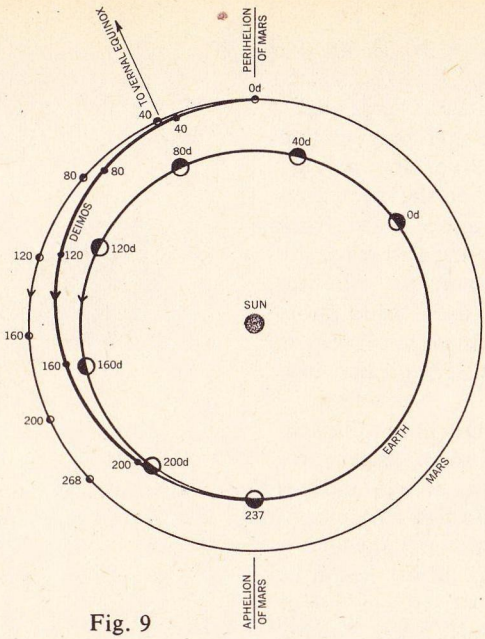


Fig. 9

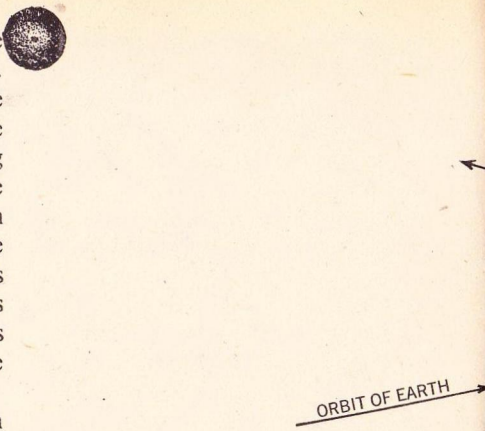
Transfer orbit of Deimos from Mars to Earth when satellite is detached at perihelion of Mars.

slightly in size and shape depending upon where Deimos parts company from Mars and makes contact with the Earth. Starting at the aphelion of Mars, Deimos would follow the path shown in Fig. 8, making the transfer trip from one planet to the other in 281 days. Should we start from the perihelion of Mars, Deimos would follow an orbit somewhat smaller and less eccentric than the other and the time of transfer would be 237 days (Fig. 9).

The fact that these projected Demian routes touch Earth's orbit, does not meant that they will necessarily touch the Earth. The time factor is of critical importance. Only at certain epochs ascertainable far in advance would Earth and satellite arrive simultaneously at the selected point of capture.

What initial velocity must we give Deimos to capture it? The answer will depend upon whether we start from aphelion or perihelion. We can, of course, start from any old point on the orbit of Mars we like but these two extremes are the handiest for discussion purposes.

The velocity of Mars at the aphelion of its orbit is 13.64 mi/sec. Although Phobos and Deimos have small velocities of their own relative to Mars, they also are moving along with Mars at the same rate or they would wander away from the planet. If we tried to trace the orbits of Mars and its satellites around the sun their three paths would be intertwined so closely as to be indistinguishable on the scale of our diagram.



To remove Deimos to Earth we must slow it down—that is, we must start it falling sunward. How much does this slow-down amount to? Calculation shows that Deimos at the aphelion of Mars should be moving at 12.41 mi/sec. But Deimos is already endowed with the same orbital velocity of Mars of 13.64 mi/sec. Hence—relative to Mars—we must reduce the velocity of Deimos by 13.64 − 12.41 = 1.23 mi/sec. (We are neglecting any advantage that might be gained by taking into account Deimos' orbital motion around Mars.)

Now . . .

Deimos is 14,600 miles from Mars. We want to make Deimos move 1.23 mi/sec. slower than Mars. What must Deimos' initial velocity be for it to have a *final* velocity of 1.23 mi/sec. at a very great distance from Mars? By a "very great distance" we mean a distance where the attraction of Mars has become so feeble that its disturbing effect on Deimos may be disregarded—say about a million miles.

To move Deimos a million miles from Mars means doing work against the planet's gravitational attraction. The operation is essentially the same in principle as the old problem in the textbooks about the work required to move a given mass a given distance up the side of an inclined plane. (I remember a classmate who once said it seemed to him he spent most of his first year in engineering school moving given masses up the sides of inclined planes.) In the textbook problems the bodies are usually so near the surface that the downward force of gravity can always be taken as constant. That is, if the attraction of Mars for Deimos

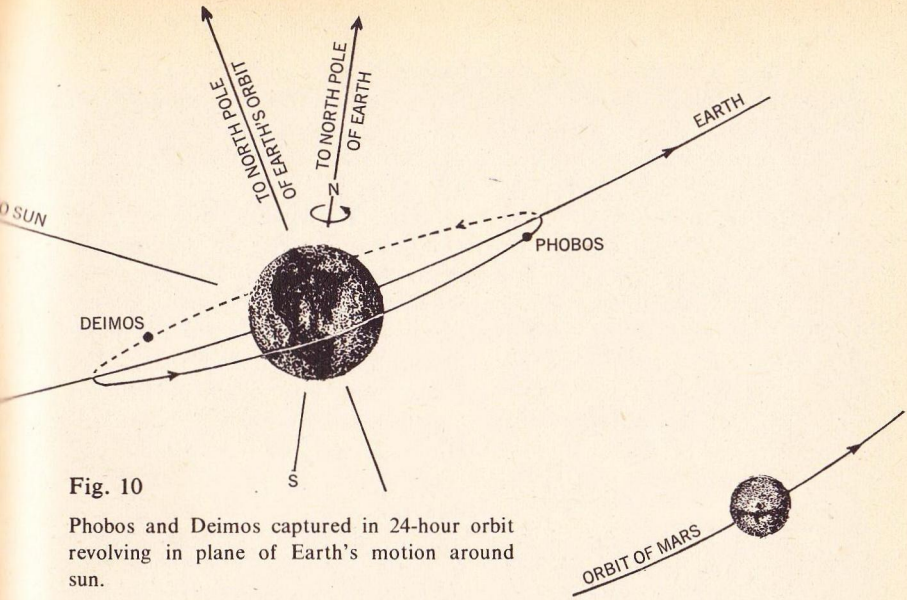


Fig. 10

Phobos and Deimos captured in 24-hour orbit revolving in plane of Earth's motion around sun.

at 14,600 miles were taken as unity—or 1/1—we would still call it 1/1 at twice the distance—or 29,200 miles.

But in space such a simple law of force no longer holds. If Deimos were removed to twice its original distance from Mars the gravitational attraction would not be 1/1 but 1/4, since the force diminishes as the inverse square of the distance. This fact is helpful in prying Deimos loose from Mars, although it complicates the mathematics slightly.

We find that Deimos would need an initial velocity of 1.71 mi/sec to have a velocity of 1.24 mi/sec left over at a million miles from Mars. How much energy would be required to move a mass such as Deimos a million miles against the attraction of Mars?

According to the Atomic Energy Commission estimates, circa 1950, the energy equivalent by fission of a "nominal atomic bomb" is 20 kilofrons or 8.4×10^{20} ergs. Undoubtedly we can blow things up much better now. In any case, it would require the energy from some twenty million nominal atomic bombs to move Deimos the desired distance for escape to Earth. It would probably be a good idea to spread this moving operation over a considerable period. If we applied the energy to Deimos all in one shot, instead of acquiring a new Earth satellite we might wind up with nothing more substantial to show for our efforts

than a minor contribution to the hypothetical comet cloud reservoir.

Without going into the technical details involved—we have faith in our engineers—let up suppose we have forced Deimos into an orbit that enables it to penetrate the E-lobe in a suitable region for capture. What additional modification will be required to keep it permanently within the E-lobe, revolving around us in a 24-hour orbit? The results obtained for Deimos, shown in Table 2, may be compared with those for Midas in Table 1.

We see that once we get Deimos within the E-lobe the velocity necessary for capture is about the same as for Midas in the thirty-degree projection. All our difficulty with Deimos comes at the other end of the line—in wrenching it free of Mars. Again—the problem is one for technicians and later on we'll suggest some general guidelines for them. We never encountered this difficulty with Midas since it was orbiting freely around the sun and not attached to any secondary body.

Fig. 10 shows Phobos and Deimos revolving in an approximate 24-hour orbit. They are revolving, not in the plane of the Earth's equator, but in the plane of our path around the sun. The Earth, and the orbit of Phobos and Deimos, or Earth II and Earth III as I suppose we should call them now, are drawn to scale, but the rest of the diagram is purely schematic. It is impossible to show our moon, or Earth I, as its path lies far outside the picture frame.

SOME readers may be wondering why we should want to capture the moons of Mars in the first place. Practical reasons may not exist but from a purely scientific

Table 2

Velocity Changes Required to Make Deimos Revolve in an Approximate 24-hour Orbit

Starting Position on Mars Orbit	Semi-major Axis	Eccentricity	(miles/sec) Velocities Required to bring into E-lobe	
			Min.	Max.
Perihelion	1.191 AU	0.160	1.14	4.97
Aphelion	1.333	0.250	1.56	5.38

standpoint the project must be considered worthwhile.*

The moons of Mars, being so small, have never undergone any volcanic or other internal activity, as undoubtedly has been the case with our own moon. Thus, even should we succeed in obtaining material from the lunar surface we still will not have samples of the real primeval stuff from which the solar system originated.

Are Phobos and Deimos former cometary nuclei? For thousands of years we have stared with awe and wonder at the heads and tails of bright comets. Yet we still have no certain knowledge of the nature of the cometary nucleus from which the head and tail originate.

There are some scientists who seriously question the advisability of spending large sums on an extended lunar program. To me, at least, it seems doubtful if we are likely to discovery anything really new on the moon. I am using the word *new* here to signify something previously wholly unknown or even suspected. Undoubtedly we will obtain a vast amount of valuable information from exploration of the moon, which will prove and disprove our various theories concerning our satellite and set us on the right track eventually. But will we find anything *new*? I rather doubt it. But the possibility of unforeseeable discoveries certainly exists in the case of the Martian moons.

Also, if we are going to keep the space program alive, we need some goal that appeals powerfully to the imagination, yet is not so wild and fantastic as to be beyond reasonable possibility of accomplishment. Think of how Columbus stirred the imagination of Europe when he returned with savages and strange plants from the new world. Short of bringing some live Martians back to Earth, what could stir the imagination more than a good close look at the two mysterious moons of Mars?

By way of further speculation, assume we have a completely isolated system consisting of the two satellites revolving around a spherical Earth of uniform density in the same orbit. Eliminate all disturbing forces due to the sun, moon, Venus, et al. Would the satellites continue to revolve in this orbit indefinitely?

No, I believe that even such an idealized system would not persist forever. The period of revolution of one body relative to another depends upon the length of its major axis and their masses. The dependence upon the major axis, is so strong, that we often tend to forget the mass factor. Yet the masses do make a difference. For example, if the Earth revolved in

* The idea of bringing the Martian moons to Earth seems to have originated with Fred Singer in a speech at the Smithsonian Institution in January, 1969.

the same orbit as Jupiter its period of revolution would be longer by two days, owing to the smaller mass of the Earth.

Suppose our captured satellites were equal in density but Phobos were twice the diameter of Deimos. Then Phobos would be eight times more massive than Deimos. Given time, its superior mass should begin to manifest itself. The ultimate fate of the system is hard to predict. Presumably Phobos would gradually overhaul Deimos, resulting in some sort of crackup.

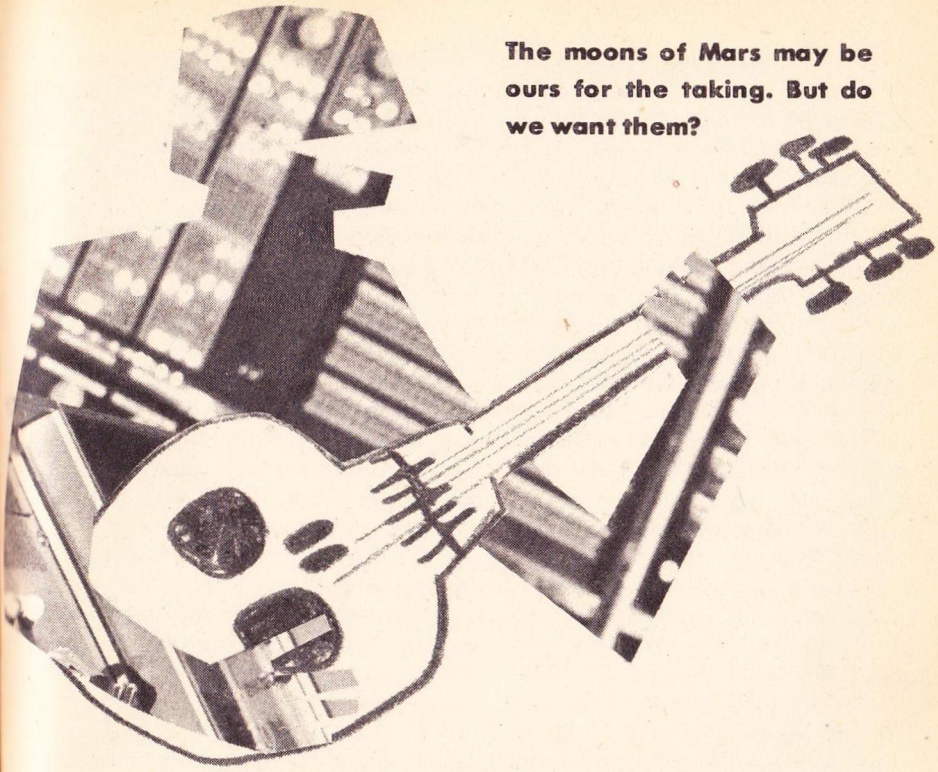
NOW for some technological guidelines. The velocity changes we have contemplated seem quite moderate compared with the velocity of escape from the Earth of 6.95 miles per second—or escape from the solar system at the Earth's distance of 26.12 mi/sec. The trouble is not with the velocities themselves but with the energy necessary to produce these velocities—if this energy must all originate from rockets fired on Earth.

The really nice solution to our difficulties would be to find the necessary propulsive material already available on the surface of the body itself. Then our planetary engineering would be reduced to a mere problem in assembly and discharge.

Of course we have gone blithely ahead assuming we have a perfect right to alter the Martian satellite system to suit our fancy. But suppose Mars should be the site of intelligent life. It is just possible the inhabitants might raise strenuous objections to having their two moons forcibly removed to Earth. In that event perhaps we could work out some reciprocal arrangement.

You lend us Phobos and Deimos for, say, ten years. In return we'll give you a ninety-nine year lease on Greenland and the Great Sandy Desert of Australia as a small down payment.

Considering that the combined surface area of the two satellites is only about half that of Rhode Island, the Martians should jump at it. ✦



The moons of Mars may be ours for the taking. But do we want them?

BROKE AND HUNGRY, NO PLACE TO GO

RON GOULART

WARREN MILSON frowned politely at the computer and told it again to stop singing.

"You're distracting me," he said, looking up from the sprawl of punch cards in his lap.

The computer, Simulator RR-S5, was built into a third of the wall across from Milson. It had a pebbled black surface. Some of its spools were slightly askew.

"Well, let's get going," it said from its speech grid. "Almost ten o'clock."

Milson straightened in his work chair and used both hands to touch the cards.

"Calm down."

"Broke and hungry, ragged and dirty, too," sang the computer in a broad Negro voice. "Yes, Mama, I'm broke and hungry, ragged and dirty, too."

"Come on, quiet down."

"I got the blues."

"Don't keep making fun," said Milson. "Stop now."

He studied a card, Will Fabin's. There was little doubt that Fabin was ready for Questionnaire 31 and a run through the simulator. "Okay, here's one." He hesitated, put the punch card on the conveyor rack leading into the machine. "And another—Mrs. Horowitz."

Finally he settled on twenty name cards.

"Not an even two dozen?" asked Simulator RR-S5.

"The quota is twenty an hour," replied Milson. "That's what the Greater Los Angeles Nutrition Office says."

"You keep aiming for the minimum," said the computer, its speech grill rattling faintly. After whirring for a moment it added: "Okay, I got Questionnaire Thirty-one off to all our deadbeats. Now what?"

Milson went to his long and wide work table and fingered the correspondence toggle.

"We wait for the replies, as usual."

"If you had more status, more drag," said the computer, "we could have a window in this office. The Greater Los Angeles skyline—that's some sight. I'd like to see that—and Knott's Berry Farm."

"They tore Knott's Berry Farm down in nineteen-eighty-seven," said Milson. "Nobody could take a computer there anyway."

"They let the spades in anyplace. But a computer? That's different."

Milson held his watch to his ear and it whispered, "The time is ten-o-one." As the letters and reports unreeled on the table scanner, Milson said, "I'll take my morning coffee break now."

"Go ahead. You don't need my approval."

Milson punched the coffee knob on the wall panel. From the food slot over his work table appeared a styo cup of near coffee.

"Cold."

"You're lucky we have coffee at all. During the last food riot in the Santa Monica Sector they burned the soy bean crop."

Milson sipped the cold near coffee. He watched the scanner.

"That's great. Thirty-four per cent of the people in the Beverly Hills Sector don't believe there's a famine there at all."

"The computers who make those attitude tests are up on Floor Twenty-six here. I know them. All their stuff is faked. They don't even try to question every resident on the intrude circuit. Slipshod."

"Okay, be quiet while I catch up."

"Did you have trouble getting to work in the tube today?"

"Because of the emergencies I'm staying in the dorm on twenty-five nights. You know that."

"Oh, yeah," said the computer. "How come you never married, Warren?"

"I'm only twenty-five," Milson told the machine. He brushed down his pale short hair. "I wanted a career helping people. You know. I'm not like some guys, out for just money. All these famines. The defoliation accidents, especially those big ones in Kansas and Iowa. The food riots all over—more and more of them. I decided when I was at UC Senior Campus Twenty-two I had to help. I can marry when the country is more settled, back on the track again."

"And you eat better working for the Greater Los Angeles Nutrition Office, too."

MILSON did not answer. The next batch of micro mail was from people protesting either food cut-off orders or removals. One letter was signed Ortega. Milson remembered old Mrs. Ortega. Her punch card had had the *r* in her last name printed in reverse. Maria Lemos Ortega. Something like that.

Milson caught up the dictate mike and said into it, "Send forms two hundred-A and two hundred-B—whichever applies—out on all protest mail."

"Here we go," announced the computer. "The questionnaires are coming in. Hey, fifteen back already."

"So fast?"

"Sure. I can find anybody in Greater Los Angeles. No matter where they are. I don't depend only on the intrude circuit. I have lots of other ways. I'm hooked into every room in GLA, even this one."

"Oh, so?" Milson swallowed coffee. "What's the result on the questionnaire so far?"

"They're all deadbeats to me."

"Yes, but we have a procedure to follow. First they have to get a doubtful-welfare rating and then we send them Questionnaire Thirty-one. That has to come before running a full-scale Life Simulation."

"Circumlocution and red tape," said the machine. "Uh-huh, okay, uh-huh. I got all twenty back now and eleven of the twenty deadbeats flunked out, meaning they have less than minimal social utility. So let's run the Life Simulation."

"Mrs. Horowitz on your list?"

"Second in line. You know her?"

"The printer reversed the *r* on her card. No, I don't actually know her."

"Give me the go-ahead order, Warren. Like protocol insists."

"Proceed to run Life Simu-

lations on those Greater Los Angeles Nutrition Office charges who have just failed Questionnaire Thirty-one."

Milson turned away from the computer and looked at the blank vermillion wall. Maybe he would petition for a window. He tried to see in his mind what the view from his window would show of Greater Los Angeles.

After a moment Milson returned to the work table and ran off the hour's communications. The national food riot count was up and Philadelphia had burned down. Milson shook his head and toggled off the scanner.

"Hey, that was a good batch," said the computer. "Nine take-outs."

"So many?" Milson had been reaching for a packet of welfare cards to select the next group of GLANO charges slated to get Questionnaire 31. "Give me their names."

"No need to. They're all processed already. You can start on a new bunch of deadbeats."

"Wait," said Milson. "Processed already? What happened to protocol? I didn't give you the order."

"Don't you remember Directive Four-one-four? Came through yesterday, effective today. All you have to do now is give the order for the Life Simulations. The rest I take care of. Much faster."

"You mean all nine of them are dead already?"

"Processed, yes," said Simulator RR-S5. "I ran my projection of what sort of life they'd lead over the next decade, based on the answers given to Questionnaire Thirty-one and assorted data in our backgrounding banks. None of the nine would be expected to fulfill any useful function in the future, nor did any show redeeming social value. So, you know, I singled them out, cut them off, processed them. Turned the names over to Morgue Pickup. The usual."

"How about Mrs. Horowitz?"

"She almost squeezed by."

"Almost?"

"She was on the losing nine, Warren. What can you expect—a deadbeat and over fifty-five."

Milson rested his hand on the umber table top, then reached toward the file cards.

"You still use the gas—that floral stuff?"

"Mostly."

"You did it so damn fast this time."

"Most of them were still at home. I have other ways. Once I know the room somebody's in—and get them isolated—I have a few different ways worked out for processing. Ways I invented."

"You invented?"

"I'm here around the clock," said the computer. "I think of a

lot of things. At night when it's quiet."

"But the GLA Nutrition Office doesn't—"

"Oh, I cleared everything with them first," explained the black computer. "I simply didn't go through you."

"Oh," said Milson.

He picked up the cards.

MILSON was trying to listen to the voice of the Vice President of the United States and get the lunch outlet to function right.

"Quiet down, will you?" he yelled over his shoulder at the singing computer.

"I'm motherless, fatherless, sister- and brotherless, too," sang the machine. "That's the reason, Mama, I want to go home with you."

"Stop," ordered Milson. "That's the Vice President himself speaking. I want to catch this."

"Rumors of uncontrolled hunger uprisings," said the slim gray Vice President on the view screen next to the computer, "are, as is usual in this sort of sorry business, much exaggerated. The President has asked me to give you every assurance." The official seal above the Vice President's head was hit by a flying piece of vinyl. The seal waggled, fell. Doors and windows smashed noisily off camera. "Don't pay any attention to temporary and local outbursts, such as the one you are about to witness."

"A riot right in the White House," said Milson, his hand still on the lunch dial.

"I remember," said the computer, "an era of politics when they threw real fruit and vegetables. There wasn't any of this prissiness about conserving food for deadbeats."

Part of the ornamentation of a motor scooter hit the Vice President over the left ear and he began to topple just as the communication screen went blank.

Milson, clutching his fist in his palm, swung an elbow against the food outlet. The time was nine minutes past noon. A cup of near coffee emerged.

The screen lit up and a junior director of the Greater Los Angeles Nutrition Office appeared.

"Due to the starvation potential now inherent in the spreading hunger demonstrations," he said, "our weed-out quotas hereafter are upped to forty per hour." He winked, grinned. "Or fifty per for you processors who can handle it." His freckled face bobbed. "And our own meal schedule here in GLANO headquarters is going to be cut a bit. Cut to two hearty meals a day rather than three, with only one coffee break each day. I'm sure you'll all agree with us on this and would request similar action on your own had it not

already been taken. All right?"

Blank.

His lower lip resting on the cup rim, Milson said, "At least I'm ahead on coffee."

"Forty an hour," said the computer. "That'll be a challenge."

"Yes," said Milson. He watched the vermillion wall.

THE chill of the small, closed office told Milson night had probably fallen. The current emergencies had restricted each simulator processor to his individual office. Milson rinsed his hands and left the alcove bathroom.

"Feel like a broke-down engine, without no driving wheel," sang the computer. "You ever been down, you know just how I feel."

"Stop singing and find out why there's no room-conditioning in here."

"If you'd process the hundred people an hour you're supposed to you'd be plenty warm," said the speaker grid of the machine. "Anyway, I can't get an answer from atmosphere central down on Floor One."

"I don't know," said Milson. "Killing twenty people an hour at the most—that seemed like a sensible way to help the hunger problem. A hundred, though. I don't know. Maybe we should stop."

"Doesn't cost us anything to keep going," said the computer. "It's all automatic. A little floral gas in through the air-conditioning. If the air-conditioner isn't working there are all kinds of other things you can do to process people. A simple remote adjustment of their view screen, for instance, and you can electrocute a whole room of deadbeats."

Milson pressed his watch to his ear.

He told the computer, "I'm going down the hall to ask the floor supervisor about the heat."

"Make it fast."

Milson skirted the work table and its tumbled piles of cards. He put his fingers in the whorl lock and pushed. The door did not open. He jabbed his fingers in harder and slammed a shoulder against the cold sienna door.

"Open, open, come on."

"Oh, boy," said the computer.

"What?" Milson stayed hard against the exit.

"A computer I know over at City Hall says half of the Santa Monica Sector just blew up."

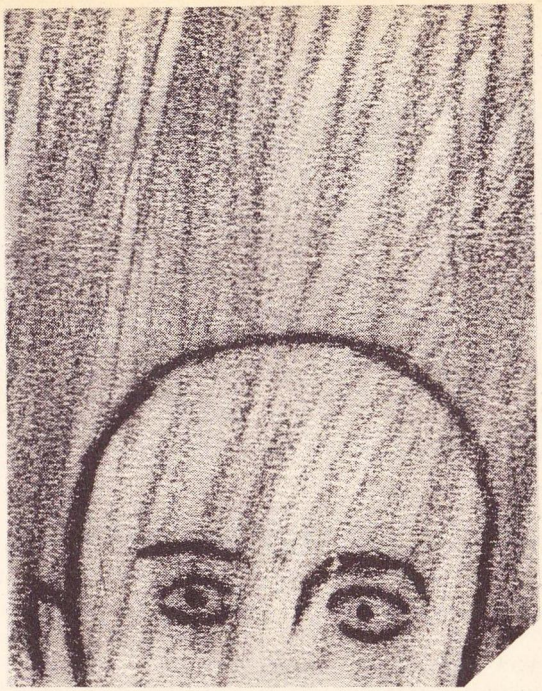
"Okay, but why can't I get this damn door to open?"

"The food riots," explained the computer. "Some of the central control mechanisms over in City Hall are fouled up."

Milson backed and kicked the door.

"Won't open," he said, hobbling back to the work table.

"I bet," said the computer,



"I could learn to play the guitar in no time. Then accompany myself while I sing."

"Where are you going to get the time to play the guitar?"

"Going to have to do something," said the computer. "I just lost contact with most of the outside."

Milson drank the half cup of cold near coffee he had saved from the day before.

MILSON jumped up and ran at the office door. He hit it hard with his good shoulder.

"Open, come on, damn it."

"I woke up this morning and felt around for my shoes," sang the computer. "You know by that, Mama, I got the old walking blues."

"I don't mind your singing but your guitar playing is terrible."

Milson swept the file cards to the floor and sat on the work table's edge.

"What guitar?"

Milson squinted at the dull black machine.

"I thought I heard one."

"Nope."

Milson limped to the food out-

let and hit it with his fist. An empty coffee cup fell out.

"How long is it since this food thing hasn't worked?"

"Time is subjective," said the computer. "For a sedentary machine it's different from the way it is for you."

"Stop being a wise ass and tell me how many days."

"Three days."

"Can't you get any word from outside?"

"Nope. I'm running on my own generators now. No word from outside—whatever's outside now."

"You'd think," said Milson, "the Greater Los Angeles Nutrition Office would have worked things out better. It's—I don't know—sloppy."

"The human element," said the machine, "accounts for that."

Milson pressed his knuckles with his fingertips.

"About how long can somebody continue with no food? I wonder. Somewhere we have data spools on that. I think the data is quite encouraging. Some people survive considerable lengths of time while there's water. Somebody is bound to come in here from the outside eventually. Or they'll have the building repaired and functioning again. One of those things or both. Won't they?"

The computer did not reply at once.

It said finally, "Warren, you need something to take your mind off things."

Milson asked, "What?"

"Something to do," said the machine. "Something to occupy your mind, your hands."

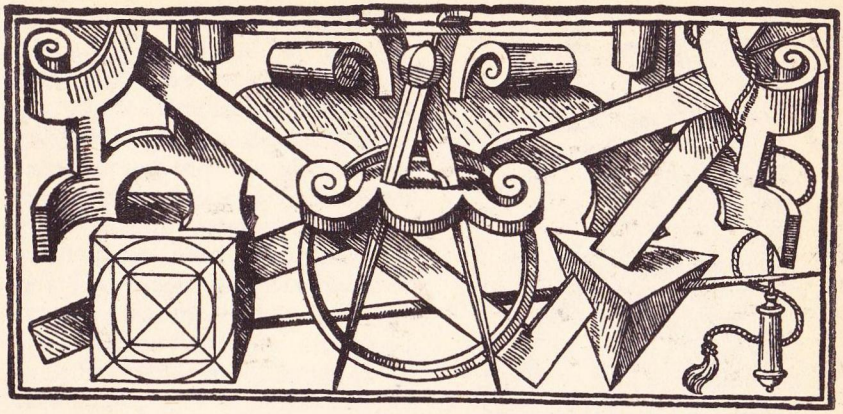
"Maybe," admitted Milson.

"I was thinking," said the computer, "you might like to fill out a Questionnaire Thirty-one for me."

Milson blinked at the machine.

"As a joke, huh?" When the machine didn't speak Milson repeated, "As a joke?"

Then he put his hands over his ears to keep from hearing what the computer was singing. ★



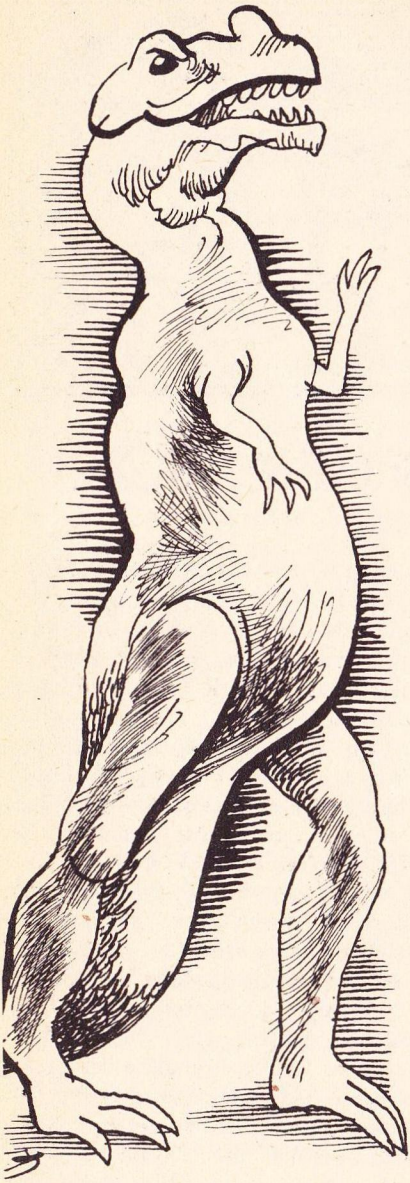
FOR YOUR INFORMATION

Willy Ley

EVERY science fiction reader knows that the dinosaurs were the ruling creatures on earth 65 million years ago. Saurians swam the seas. If there had been ships and skippers at the time a sighting of a "sea serpent" would not even have been logged, for it would have been an expected event like meeting a group of porpoises in our time. Other saurians flew overhead on long leathery wings. Still others skittered around on land like featherless ostriches. And the biggest ones grazed the soft vegetation of enormous swampy lakes.

About five million years later—again every science fiction reader knows this—they were all gone. The task of explaining this fact fell to the people who had been the ones to unearth, assemble and reconstruct the dinosaurs, the paleontologists. They did not explain it very well, at least in the public's opinion, because they did not have a single (and preferably simple) answer.

A dozen or so years ago the Russian astrophysicist Iosif Shmuelovitch Shklovski came up with a nongeological idea. Suppose that a comparatively near star had gone supernova 60 million years ago. It would have sprayed all nearby space—including our solar system—with violent radiation, everything from hard X-rays to alpha particles and still heavier atomic nuclei. Small animals in hiding under dense vegetation, or even burrowing, would not have been much affected but the big ones that could not hide, dinosaurs



in this case, would have been exposed to the lethal radiation. Those not killed outright would have been made sterile.

The concept was new and interesting. Much speculation about it ensued, generating a considerable amount of printed matter. Fresh fuel was added from two quarters to a debate that began building up. One side was made up of zoologists who contemplated the many types of large mammals that became extinct during the interval between the end of the last glaciation (say: 11,000 years ago) and historical times. Their query—had there been another "great extinction" some 9,000 years ago?

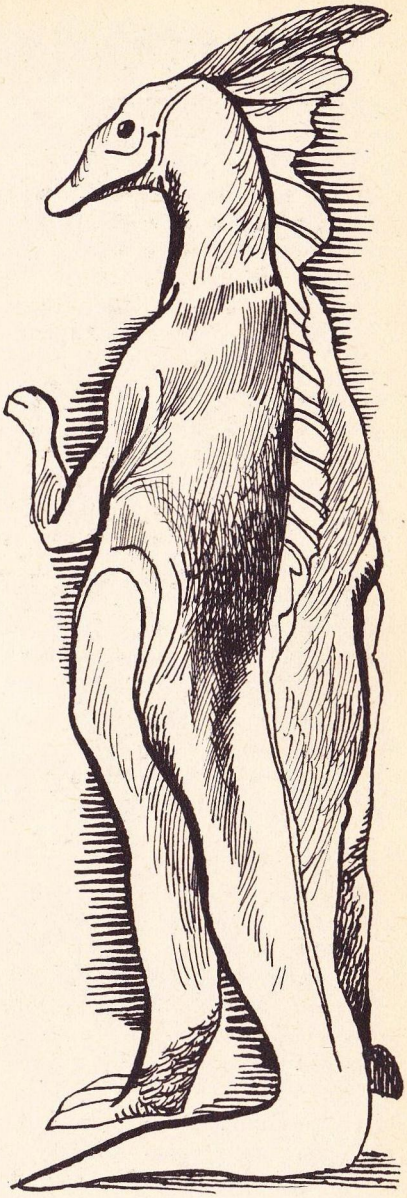
Oceanographers advanced their own views of the causes of extinctions. They had found that every once in a while what had been "magnetic north" turned into "magnetic south." Such a reversal implied, of course, that there must have been a period during which a magnetic field was absent—the field could not reverse itself without going through a zero stage. During the zero stage—and for some time on both sides of the zero mark—no magnetic field would have existed to protect the earth and its inhabitants from cosmic radiation.

While a supernova is a rare event and a nearby supernova is even rarer, the magnetic reversals seem to be fairly frequent. Four

of them occurred during the last four million years. But they do not occur with any regularity or periodicity—and they apparently happen for reasons still to be discovered. We cannot tell how much radiation a supernova will throw into space or how much of it would arrive on earth in a given time. But we can tell what the temporary absence of the magnetic field will do.

First let us see what the magnetic field does for us when we have it, as is the case right now. The cosmic rays that strike the earth are actually subatomic particles, mostly protons, that come from space. Some have originated at a considerable distance and not necessarily because of a nova or supernova outburst. Every star, with the probable exception of the red dwarfs, loses matter constantly. Our own sun is no exception—especially during periods of solar flares—and most of the protons that strike our upper atmosphere come from the sun.

The magnetic field acts as an imperfect armor. Most of the subatomic particles are warded off—they do not even reach our atmosphere. Those that have too much energy—the ones that travel fastest—to be warded off by the magnetic field are trapped in the Van Allen belts. Only a small percentage actually reaches our air. They collide with atoms and,



farther down, molecules of the atmospheric gases, producing showers of so-called secondary rays. It is a rare "primary particle" that actually reaches the ground—this fact is the main reason it took us so long to discover that cosmic rays exist. To complete the picture it must be added that more particles reach sea level in the areas of the magnetic poles than elsewhere. The magnetic poles do not coincide with the geographical poles but they are not too far away from them, so that one can say that the cosmic ray intensity is higher in the arctic and antarctic regions than in lower latitudes.

The Office of Naval Research was interested in what would happen in the absence of the magnetic field and supported a theoretical investigation by Professor C. J. Waddington of the School of Physics and Astronomy of the University of Minnesota.

IN THE absence of a magnetic field all the particles coming from space, whether from our sun or from elsewhere, would enter the upper atmosphere unhindered. Moreover, the equatorial regions would no longer be favored. Whether the particles now trapped in the Van Allen belts would all enter the atmosphere is uncertain—any magnetic reversal is likely to be a slow process so that the belts will be gradually dispersed.

But the magnetic field is only our "outer armor"—the "inner armor" is the atmosphere. It is completely opaque to X-rays and gamma rays—and constitutes the reason we did not know whether the sun emits X-rays until rockets could carry instruments beyond the atmosphere.

Subatomic particles, as has been stated, collide with the atmospheric nuclei. According to Professor Waddington only five out of one million protons would reach sea level without having been weakened by a nuclear collision. For nuclei heavier than protons the number is even smaller.

At present the radiation dosage at sea level due to cosmic rays is fourteen per cent higher in Antarctica than at the equator. Without a magnetic field the sea-level radiation would not be noticeably changed in the polar regions but would rise in the equatorial regions. The increase would be from 35 to 41 mrad (the measurement unit) per year.

How much is that?

In normal regions of the land surface—normal in the sense that surface deposits of naturally radioactive elements are absent—the natural radiation dosage is 70 mrad per year. Over the oceans, far from land, it is only 10 mrad per year.

Another effect to be considered is the production of radioactive isotopes in the upper atmosphere due to increased proton bombardment. The three isotopes most likely to be produced are hydrogen of mass 3 (tritium), beryllium-10 and carbon-14. Now, the half-life of tritium is 12.3 years, that of beryllium-10 is over 2-1/2 million years and that of carbon-14 is 5730 years. The long half-life of beryllium-10 means that it disintegrates very slowly and therefore emits very little radiation per year; if it were a strong emitter it would have a shorter half-life. Beryllium-10 can be disregarded.

Tritium can almost be disregarded because its half-life is so short. Remember that it is produced in the *upper* atmosphere and it is hard to see why a hydrogen atom or molecule should reach the ground at all. For practical purposes only carbon-14 would contribute to ground-level radiation; considering the probable production rate, the amount of ground level radiation due to carbon-14 (not the overall amount) would be doubled.

Professor Waddington's conclusion reads: "The effect of removing the (magnetic) field is to increase the radiation dosage due to cosmic radiation by 0 to 6 mrad/years between the polar regions and the equator and to increase that due to radioactive isotopes selectively taken up by organisms by not more than 2 mrad/years. These values are so small, particularly in comparison with the general background radiation levels always present, that it seems inconceivable that they could appreciably affect the evolution of any organisms."

TO VISUALIZE the results—or lack of them—of the disappearance of the earth's magnetic field was a job that could be performed because all the factors involved were known. But to decide what radiation from a supernova might do is impossible because at least some of the factors will be what you make them.

Two scientists, Drs. W. H. Tucker of the Department of Space Science of Rice University in Houston, Texas, and K. D. Terry of the Department of Comparative Biochemistry of the University of Kansas in Lawrence, are convinced that supernovae at various distances from the earth caused repeated mass extinctions in the course of geological history. On the other hand Dr. Howard Laster of the Department of Physics and Astronomy of the University of Maryland in College Park calculates everything differently.

Granted that the ultra-massive dose of cosmic ray particles produced by a nearby supernova would smash through both the

barriers of the magnetic field and the atmosphere and cause a widespread extinction of large animals. The question is how many particles would arrive in how short a time. Terry and Tucker in their first publication claimed that a dose of 25,000 röntgen would arrive within a few days if the supernova were ten light years away. Dr. Howard Laster, taking interstellar magnetic fields into account, replied that "cosmic rays reaching the earth even from a relatively near supernova... would travel tortuous paths en route. Instead of arriving in one sudden burst concentrated in a few days or less, their radiation would be spread over years. The biological effect... would therefore be appreciably smaller, and probably negligible."

The trouble here is that it cannot be decided which method of calculation is correct, meaning which one is applicable to the spread of particles from a supernova explosion. The question of whether we can see remnants of such a supernova can be answered by a plain no. If we blame a supernova for the death of the dinosaurs, the event took place about 60 million years ago and the explosion cloud must have completely dispersed in the meantime. Besides, during those 60 million years the solar system traveled a distance of 2000 light years—if it moved at the present rate.

I cannot conclude this article without a comment of my own—I am not convinced that these great extinctions actually took place. Let's take the supposed great extinction of 9000 years ago first. What disappeared then were three species of giant ground sloth in southern California and Texas, the saber-toothed smilodon, the short-faced bear, the "dire wolf" and a few others. Evidence of the existence of most of them has been recovered from the tar pits of Rancho La Brea. Pictures always show rather concentrated animal life around the tar pits but the bones from the tar pits represent an accumulation of several centuries and probably an even longer time. This can lead to wrong conclusions—one might as well conclude from the collection of meteorites in the Hayden Planetarium that falls of 900-pound meteorites are a daily event.

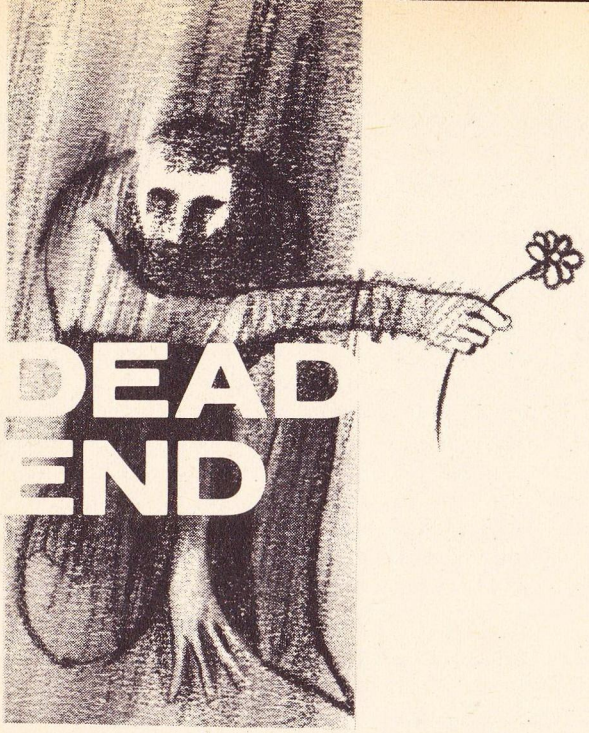
Besides, the "great extinction" of 9000 years ago must have struck the western hemisphere only and not Africa. The answer probably lies in the fact that North America underwent a profound climatic change at that time because of the retreat of the glaciers. Africa, which had not been glaciated, simply is a different case—but it would hardly be so if death had come from space.

Regarding the dinosaurs, it should be pointed out that we

know of many species of dinosaurs that became extinct a long time before the end of the Cretaceous period.

In the case of the disappearance of large mammals from the American scene a climatic change could be cited. Is there a comparable event that might have caused climatic changes over large areas? There is. About 80 million years ago—roughly 20 million years before the end of the Cretaceous period—the last land connection between Brazil and Africa was torn apart. The Atlantic Ocean was in the process of assuming its current shape—South America drifted westward while Africa more or less stayed put. Continental drift was active in the southern hemisphere, too, at about that time. Antarctica and Australia, which had formed one continental block, broke apart and started drifting in different directions.

All this must have led to shifts in wind patterns which, in turn, caused climatic changes, changes which made large areas unsuitable for the inhabitants. From the fossil record we can conclude that the end of the Cretaceous period by and large was also the end of the dinosaurs. But we cannot tell how long it took them to die out. ✦



NORMAN SPINRAD

Merely to exist is for some the living end—for others a dead end . . .

WILLY CARSON woke up at nine o'clock for no particular reason. But he had no particular reason to wake up at any other time either.

He lay alone in bed for long minutes, feeling the familiar morning nausea, made up partly of an inability to get up and partly of an unwillingness to stay in bed. He sighed and reached for the blue pack of cigarettes on the night table. They were marijuana, not tobacco—the government had legalized marijuana in '88, two years after they had legalized prostitution. Or had prostitution been legalized in '87? Well, what the hell did it matter?

He smoked his customary single cigarette quickly. These days one was just about enough to get him

barely high, sort of hollow and resonant like the first stages of a good beer drunk. He knew that if he smoked much more he would become maudlin. He had had more than enough of that.

But the one cigarette was enough to get him out of bed. Just barely.

He dressed quickly, stumbling here and there over his easel, his photoenlarger, his potter's wheel, the assorted odds and ends of dozens of abortive hobbies that littered the bedroom. The bachelor apartment had only three rooms—kitchen-dining room, living room and bedroom. There was no room for all the junk in the kitchen and for some reason he had a compulsion to keep the living room neat—so the bedroom did double-duty as a storeroom.

Awakened fully by the motion of dressing, Willy went into the bathroom, rubbed Depilo on his stubble, washed off Depilo and beard and combed his thinning hair.

He went into the kitchen and punched out his usual breakfast on the Autostove—grapefruit, three fried eggs, sausage, toast, coffee. As usual, he swore to go on a diet—next week.

He ate quickly and joylessly, shoved the plastic dishes into the Disposall and slumped torpidly back in his chair.

Now what?

For a whole year after he had lost his job Willy had spent at least five mornings a week looking for work. After all, he had reasoned, he was a master draftsman with a junior-college degree, as good a draftsman as lived. It took him a whole year finally to accept what he had known from the beginning—there simply were no more jobs for draftsmen, master or otherwise. The Draftmaster was just too good—it could do anything a human draftsman could do, could do it faster, more cheaply and without errors. Draftsman had joined ditchdigger, machinist, longshoreman, telephone operator, bookkeeper, accountant, pilot and God-knows-what-else in the ever-growing list of extinct occupations.

Willy had joined the burgeoning ranks of the unemployed and unemployable.

Permanently.

He dragged himself out of the kitchen and into the living room. He stared bleakly for a moment at the hi-fi, at the huge cabinet full of records that he hardly ever listened to any more. Resignedly he flopped down on the couch in front of the huge television screen that was one entire wall of the living room.

"On," he muttered at the TV.

Instantly the television screen came to huge, full-colored, jabbering life. It spewed out the morning news.

"... this increase in the suicide rate is not statistically significant, President Michaelson declared," said the bland, optimistic, not-quite-smiling announcer. "And now, turning to the world of sports. Only one midweek football game played yesterday. New York swamped Cleveland, thirty-eight to fourteen. At the Municipal Arena, up-and-coming young Jackson Davis scored a smashing victory over the veteran Blackie Munroe, two hundred forty-three to one hundred seven. Davis swept boxing, wrestling, judo, medieval swordsmanship, knives and free-for-all. Davis' manager, Lefty Paccelli, is now talking about a shot at the champion. The champion's manager was interviewed after the match by Bill Faber, WKA-TV Arena reporter—"

"Four," grunted Willy Carson.

The television set obediently changed channels.

Picture of a man staggering out of bed, gulping a pill. Then a cut to the same man turning up his nose at a mouth-watering breakfast.

"Friend," cooed a syrupy voice, "is your present wake-up pill ruining your appetite? Do you find yourself turning up your nose at breakfast? Then you need Dexayum, the only wake-up pill with an appetite arouser—"

"Drop dead," grunted Willy.

"... guaranteed to keep you awake for twelve hours, without loss of appetite or your—"

"Off! Off! Off!" Willy shouted.

The television set shut itself off.

"Five lousy years," Willy muttered. "Five lousy years."

Five years of collecting a hundred seventy-five a week in Basic Citizen's Stipend. B.C.S. Born, collect, stagnate.

How many people were living off B.C.S. now? Willy wondered. Last figure he remembered hearing was eighty-nine million. By now it was probably over a hundred million. Who knew? Who bothered with knowing? What was the point?

Christ, he thought, *I'd do anything to be working again. Dig ditches. Shovel manure. Clean toilets. Fat chance...*

WHEN you were automated out of your job you were out of the work force. Period. The only conceivable direction you could go to get another job was up. You could not settle for a less skilled job because such jobs no longer existed.

And retraining programs were just a bunch of sick jokes. Because everyone got as much education as he could take before he was permitted to add himself to the Potential Work Force in the first place. You only got a job—if you qualified for one—after you had

reached your educational limit. This meant that when your job was automated out you really couldn't retrain, because you had already had all the training you could possibly absorb.

So you went on B.C.S. Nobody ever got off B.C.S. It was a dead end. Born. Collect. Stagnate. The world was full of dead ends.

Oh, you were taken care of, royally. Rent was free. Food was free. Medical care was free. Most of the hundred-seventy-five a week went for entertainment, hobbies, liquor, drugs—anything to fill the emptiness, eat up the hours.

But nothing could.

Your marriage blew up in your face. How could two people live together for twenty-four hours every single day with nothing at all to do but stare stupidly at each other?

Love turned to boredom. Boredom turned to disgust. Disgust turned to hate.

And then you were alone.

Alone with your whole life in front of you. Your whole stupid, empty, senseless life.

"Damn!" Willy muttered.

There were no more idiotic hobbies left to try. There were no drugs that could give life meaning. Television was meaningless images and sounds. Food tasted like sawdust. All the psychoanalysts in the world could not adjust a man to living in a vacuum.

Willy found himself thinking about joining a Gang but the thought filled him with self-loathing. Once, two years ago, he had gone so far as to try it. Most of the men and women in the Gangs had never had a job in their lives. They joined a Gang as kids. They stayed in the Gang. Middle-aged juvenile delinquents. Last week they had arrested twenty people for stomping a man to death.

Eight of the arrestees were "students." Seven were middle-aged men collecting B.C.S.

And the other five were collecting Senior Citizen's Stipend. Kill-crazy kids at sixty-plus.

Willy knew that killing had no meaning for him. It went nowhere.

Willy rose. He stood immobile in the middle of the living room, not wanting to stay in the apartment for another moment but not having a place to go. He toyed with the idea of suicide. Certainly doing away with oneself was becoming more and more popular. But death—well, what was death? More nothing. Complete nothing. Not very much different, really, from the life he was living. Death was an escape from suffering but there was no suffering on B.C.S. No pleasure, no pain, no change.

He suddenly realized that he might welcome a little suffering. Pain was at least a feeling. If you felt pain you at least had something to look forward to—the time

when the pain finally ceased.

But pain, too, had been abolished.

Willy grimaced bleakly. Pain—maybe that was the answer.

Maybe if I could find a way to suffer . . .

It wasn't much, but at last he had a purpose. Willy Carson went forth in search of suffering.

BUT on the street he realized that suffering, other than self-torture, was mighty hard to come by. Hunger was impossible—food was universally free. You couldn't give your worldly possessions to the poor—there were no poor. A life of self-sacrifice was not in the cards—no one needed your sacrifices.

Hordes of well-fed, well-clothed, well-housed people swirled slowly about Willy. No one hustled, no one rushed. No one had anything very urgent to do. A benign sun shone down on the spotless city through the illusive shimmer of the Climatescreen. Climate control had eliminated even unpleasant weather.

Willy began with not the faintest idea of where to find suffering until he remembered about weather before the days of the Climatescreen. He had, of course, only heard about it, not experienced it. But there was a way.

The Wilderness. The Middle American Wilderness Area, a hundred square miles of carefully preserved natural terrain. No autostoves there. No Climatescreen. No rent-free apartments.

Feeling an approximation of excitement for the first time in years, Willy raced to the nearest stripway. He boarded the moving strip and made his way to the middle express lane.

The border of the Wilderness Area was less than an hour away by express stripway. In an hour he would be in the Wilderness Area, away from B.C.S., away from civilization.

THE border of the Middle American Wilderness Area was a steel wall ten feet high and stretching beyond the horizon in either direction.

The stripway deposited Willy at an entrance to the Wilderness Area. The entrance was a plain metal door in the wall. On the left side of the door was a speaker grill. On the right was a small slot in the wall.

Willy walked up to the door and tried to open it. It was shut tightly.

"Welcome to the Middle American Wilderness Area," said a flat, mechanical voice from the speaker. "One hundred square miles of pure natural countryside provided by your government for the enjoyment of the citizen."

There was a metallic click and

something dropped into the slot to the right of the door. Willy went over to pick it up. It was a small metal bracelet with a red button set in its center like a jewel. It was hinged in two places so that it could be clamped over the wrist and locked by a handcuff-like clasp at the bottom.

"You will find your Safetybracelet in the right-hand slot," said the speaker. "Put it around your wrist and close it. It will remain locked around your wrist until you leave the Middle American Wilderness Area. It contains a small radio transmitter. This safety device insures that the citizen will suffer no discomfort in the Wilderness Area. Should you suffer discomfort or should you become lost, merely press the red button on the Safetybracelet and a Retrieval Robot will immediately come to your aid."

"But I don't want this thing," Willy said. "I want to be on my own. Open the door."

But the entrance of course was pre-programed to ignore protests.

"The entrance to the Wilderness Area will be opened as soon as the clasp of the Safetybracelet is locked around your wrist. This is to insure that no citizen wanders into the Wilderness Area unprotected. Have a pleasant stay."

Willy cursed the unhearing mechanism. What the hell, he finally thought. Nobody could tell him actually to press the button. Right?

He put on the Safetybracelet. The door opened instantly.

Willy Carson stepped through into the Middle American Wilderness Area. The door closed behind him.

ROLLING green hills studded with woods stretched before him as far as the eye could see. The only visible metal was the wall behind him and the bracelet on his wrist.

Willy inhaled the open country air. All the old books had promised that the wild, free country air would somehow be cleaner, tastier than the air of the cities. But Willy was disappointed. He could detect no difference in the air of the Wilderness Area. Those books had been written in the days before The Climatescreen, in the days when cities were filled with smog, industrial wastes and gasoline fumes. Now the air in the cities was as fresh and pure as any country air.

Willy suddenly had a vision of a man running carefree and laughing through green fields. Even though he recognized it as part of a television commercial—here he was and there was the green open countryside.

He began to run. He ran about twenty yards into the Wilderness

Area, stumbling over roots, little rocks, clumps of weeds. Thirty yards, and he was panting heavily. Forty, and his legs began to feel leaden and disembodied. Fifty, and a sharp pain began in his lungs.

He flopped down heavily in the grass, lying on his back and panting.

Boy, am I out of shape.

He tried to remember a time when he had been in shape but he could not. Well, what the hell, who was in shape these days? Only a few professional atheletes. What was the point in physical strength when no such thing as manual labor existed any more, when there were stripways to take you anywhere you wanted to go?

Now that he was catching his breath Willy became aware of the myriad little pebbles, lumps and indentations in the ground he was lying on. It was not very comfortable, certainly not as confortable as the couch in his apartment.

He scrambled to his feet, brushed himself off. He noticed in annoyance that his shirt was marked with green grass stains. His pants were soiled with brown earth.

"Damn," he muttered. "There go a good shirt and a good pair of pants."

Still annoyed at his soiled clothing, he began to walk farther away from the wall toward the nearest clump of woods.

THE woods were dark, damp and rather cool, actually downright chilly. Willy wished he had thought to bring along a jacket. But no one ever bothered with jackets in Climatescreened cities?

Shivering slightly, he looked about. He saw trees and bushes and a small, nearly dried-up stream. He saw rocks sweating moisture and other rocks with green moss growing on them. He saw damp brown earth and patches of rotting leaves. A few birds sang in the trees. Between snatches of bird song he heard silence, lots and lots of silence, more than he ever remembered experiencing. The silence nearly had the impact of sound.

So this is wilderness. Woods, grass, quiet . . .

Next?

Nothing exciting offered immediately. He was alone in the woods. No television, no hi-fi, no Arena to go to.

So what did you do in the woods?

He began to walk idly, aimlessly, deeper into the forest. The air grew colder. Best to keep moving.

Willy listened to birds, looked at trees and rocks and bushes, bushes, rocks and trees. He found that he had lost the ability to feel anything but boredom.

He remembered some of the books he had read, that month or so when he had decided that

the thing to do was read. Those jerks had written all kinds of stuff about the beauty of nature, how wonderful it was to be alone with the trees and the grass and the animals.

Come to think of it—I haven't seen any animals at all except for a few lousy birds...

Big deal. Birds. Trees. Grass. Rocks. So what?

Well, at least I'm free out here. Yeah, that's it, freedom...

I'm free. Free to do what? Just be free, I guess...

Some of those writers made a big deal about being free, too. But what in hell were they talking about?

I guess freedom means not having to do anything you don't want to do...

But hell, who had to do anything he did not want to do? On B.C.S. no one ever had to do anything at all.

Maybe freedom is being able to do what you do want to do. So what do I want to do? That's easy. I want a job. I want to work. And that's the one thing in the world I can't do. I can't do it in the city and I can't do it here either...

He walked on, becoming less and less concerned with abstract musings and more and more aware of something much more prosaic—it was time for lunch. He was beginning to get hungry.

He eyed the red button on the Safetybracelet.

I can always call for the Retrieval Robot. No. That's not what I came out here for. Okay, so you're hungry. Isn't that what you wanted in the first place? To feel something for a change?

Willy considered. How did one find food in the woods? One killed a rabbit or something, he supposed.

Willy realized that he had never killed anything in his life and that he did not have the slightest idea of how to go about doing it, not without a gun. And maybe not with a gun, either.

And hunger was not the way he had imagined it at all. It was like a big hollow in his guts and it sort of hurt. Now that he was suffering at last, he found that he felt no more alive at all than he had this morning. Suffering was just plain unpleasant.

He stopped walking and once again considered the red button on the Safetybracelet. To push it would be the easiest thing in the world.

No. At least I'll get back to the city on my own. Now let's see, the wall is—where?

Willy looked around. He was surrounded by trees and rocks and bushes, bushes, rocks and trees. He could not see the wall. He could not see the horizon.

Where the hell am I?

He began to walk faster and faster. He had no idea in which direction the wall was but he had to get to it. He had to do something. He would not press the button. He would make it on his own.

FOR hours Willy blundered about in the woods. His hunger became an ache, then a dull throb and finally a pain, real and burning in his stomach. He did not like it one bit.

I won't press the button.

It started to rain.

At first he heard only the patter of raindrops on the leafy roof of the woods. Then it came down harder and harder. The trees became soaked and the rain began to penetrate the treetops. Big, fat, cold drops hit Willy. And the trees began to dump their overload of moisture on him. Willy, who had lived his life in the protected Climatescreened cities, had never been caught in the rain before. He did not at all enjoy the new experience.

It rained and rained. Willy's clothes became saturated. His hair grew wet and matted and water dripped down his forehead and into his eyebrows. Cold water.

Willy was soaked. He was also freezing.

He sat down on a big, flat rock. The rock was wet. He felt it through the seat of his sodden pants. He was wet, he was cold, he was tired and very hungry.

He was thoroughly miserable.

He was as miserable as he had been back in his apartment, maybe more so. He saw no meaning in being cold or wet or hungry. He had found suffering. It did not fill any of the empty places in his life. It just made new ones.

With a little sighing sob of resignation, he pressed the red button on his Safetybracelet. Soon, very soon, the Retrieval Robot would arrive and take him back to the city.

It would take him back to his apartment, back to his autostove, his hobbies, his long pointless days and empty nights. Back to the endless, meaningless years that would stretch on and on and on.

But now Willy wanted to go back. He wanted desperately to return to the same old empty dead end that was his existence. It would be no less empty, no less futile. But it would be better.

He pressed the button again. And abruptly it dawned on him that nothing happened. The button did not budge. It had not moved the first time. It was jammed or frozen.

For some time he tried to work it without success and a cold apprehension began to crawl through his mind. He had never known anyone who had come back from the Wilderness Area. All he had

learned about the place had come from books—and all the books he had read had been old.

Written before the cities had been Climatescreened, before automation had been sufficiently developed to answer all men's needs—even to fulfilling his atavistic hunger for the discomforts of the good old days.

As the full implications of what he suspected was the truth seeped through his soggy brain Willy went a little berserk. He stopped banging the bracelet against trees and rocks when his arm began to bleed. Nothing had happened to the bracelet. Not even a scratch.

The button had not moved.

He saw no point in inflicting further suffering upon himself. No robot would come. No one—himself included—would ever update the lore of the good old days. The false legend that the air was fresher in the Wilderness Area than in the city would persist. The Area itself would be preserved as a symbol of hope for people like himself, for whom civilization had lost meaning and who had ceased to function, to have a purpose.

He had an awesome feeling that he had flunked a test—a test of survival.

Not here. Back in the city. A new question shaped up in his mind—soon he would know the answer.

Was panic better than boredom? ✦

GALAXY'S STARS

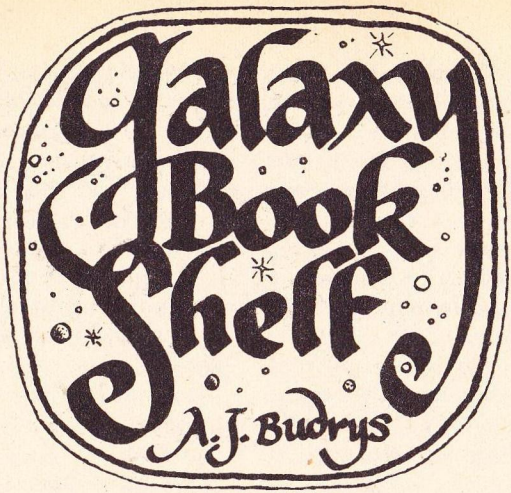
As we write (September), Frank Herbert has just breezed through New York City on his way home to Seattle after a three-week tour of South Viet Nam. Covering the progress of land-reform legislation there for the Hearst newspapers, Frank was based in Saigon but took frequent trips into the seething hinterlands—during which he was accorded what he calls the VIT (Very Important Target) treatment.

The Herberts recently moved to Washington, leaving San Francisco after more than a decade. Frank is Higher Education Editor, among other things, for the *Seattle Post-Intelligence*. Or did he say Riot Editor?

Good words continue to flow from the Herbert typewriter, which is already turning out a sequel to his new novel—as yet untitled—that soon will run in *IF*. He is also doing a treatment for an underwater sf television series for Krantz Films. And who could do an aqua story better—remember *Dragon in the Sea*? Frank believes, in fact, that one way of postponing the effects of the copulation explosion will be to move civilization—or part of it—under water. And he expects to see it happen.

In his mind, by the way, Frank is plotting the third (and last?) DUNE novel.

Beverly, Frank's lovely wife, is the Creative Director of *Plan Ahead*, a publication of the Retail Reporting Bureau. Both Herberts, when not involved in things literary, go to sea to fish for, he says, salmon and trout.



THERE's a newspaperman in Chicago named Mike Royko. He writes a daily column for the *News*, sometimes just spitballing, sometimes reprinting hair-raising selections from his mail. Sometimes he also goes out and puts bombs or thumbtacks under various people and institutions. On occasion, this causes functional improvement but it rarely does so to everyone's satisfaction. Which explains the interesting character of the mail.

One of the beautiful things he does is to go out and cover stories. He covered one the other day that some other people had been taking a crack at for a couple of generations. It appeared as one of his columns. From time to time, these come out in collected form as books. I hereby give a favorable review to the book which will eventually contain the following piece of work, from the Thursday, July 17th, *Chicago Daily News*, copyright 1969 by Field Enterprises, Inc., and reprinted by permission of the *Chicago Daily News:*

> The color TV flickered in the corner of the Bethany Nursing Home recreation room. A silver spaceship shone on the screen.
>
> A very old man sat and stared. The TV voice said the rocket would leave for the moon in 30 minutes.
>
> "I would never have dreamed of such a thing when I was a boy. It was so different then."
>
> When he, George Parkinson, was a boy, things were different. The year he was

born, 1875, Ulysses S. Grant was in the White House. Mark Twain was writing "Tom Sawyer." Gen. Custer would soon ride to his death. There were 37 states in the Union. Alexander Graham Bell made a telephone.

THE TV VOICE SAID THAT former President Johnson was at Cape Kennedy, watching.

"Johnson," the old man said, falling silent for a moment. "I was born in Springfield, you know, and my mother was a friend of Mary Todd Lincoln. She always felt that Abe didn't treat Mary Todd as well as he should have. My mother knew Abe, too. Not well, of course. She knew Mary Todd much better."

The spaceship was on the screen and the TV voice was talking about thrust, speed, power. The old man leaned forward, but that hurt, so he sighed and sat back.

"I was about 5 when my father took the family west in a covered wagon. My mother, four brothers and I. We settled in Wichita. It was a frontier town then, mud streets, cowboys. It was just on the fringes of civilization."

Barely on the fringes. Just beyond, Billy the Kid was still shooting people. Jesse James was alive and in hiding. The Apaches and Sioux were fighting us furiously. Texans drove their longhorn herds to Kansas.

The old man pulled his eyes from the spaceship and let his mind drift back.

"I didn't see any of the famous badmen myself, but they were there. Five of them rode into a town nearby and left their horses in front of the bank. A lawyer across the street could see that they were robbing it. He took his rifle and shot all five of them as they came out. I don't remember who they were. Maybe the Daltons or somebody like that. They left their bodies in the street all day, as a warning."

THE COUNTDOWN REACHED 10 MINUTES, and the TV voice was dwelling on the magnitude of the scientific achievement.

"There was not much talk of science when I was a boy," the old man said. "People were most concerned about their health and their cattle's health."

Science. The year Mr. Parkinson was born, Louis Pasteur was on the brink of his discovery. He was 22

when Roentgen discovered the X-ray, and 25 when the Curies isolated radium. Now he was looking at a spaceship on a color television set, in an air-conditioned room, sitting in a plastic chair.

The vapors poured from the bottom of the ship. It would be soon. The TV voice talked of the enormous speed of the thing.

The old man shook his head in disbelief. "I find it hard to comprehend such things. You know, I became a preacher right after I finished high school, and I went to Oklahoma territory and rode a pony on a four-church circuit. It took so long to get around.

"Why, when my wife and I hitched up the horses to visit a ranch, a 10-mile trip would take us all day."

Then Mr. Parkinson was riding his circuit, a man named Francis Train set a world speed record. He cried the globe in 67 days, 13 hours. The astronauts would do it in an hour and a half.

THE TV VOICE MENTIONED the hundreds of thousands of people at Cape Kennedy, and the enormous traffic jam.

"So many cars," the old man said. "I didn't see a car until I was a grown man. It was when I came east to study at Harvard's divinity school. I went back west, of course. I was a minister for many years, many years."

The early car came into production when he was 26. A couple of years later he read about someone named Orville Wright, flying a thing with wings, for a few brief moments.

They were counting tense seconds now. The old man clenched his brown-flecked hands tighter and leaned his chin on them.

Then it came. The colors blazed. The giant thing screamed and strained. The old man sucked in his breath.

It heaved and then jumped toward the sky, and the voice said: "We have a liftoff."

"The moon," Mr. Parkinson said, a hint of delight in his voice. "The moon."

AS YOU know, fans, I never do anything for just one reason and, apart from simple pleasures at finding something as elegant as Royko's summation of an experience that some people have written series of bad novels about, here's my other motive

for reprinting it coming at you.

Somehow I think Mike's column—and a lot of other work like it by people who don't normally give a hoarse cough for technology—signals the end of an era. I think, in other words, that tech fiction has made its point. Many the people on the NASA public relations staff, many of the Cape Kennedy and Houston technicians and supervisors, a significant proportion of the top management and a hefty percentage of the public, are now infused with words, images and concepts lifted straight out of science fiction as she used to be.

In any number of cases, it's impossible to say whether an engineering idea, or a piece of terminology, is consciously derived from a description in the sf of the 1940s or whether we have a simple coincidence. Or a complex one. The sf of the 1940s, for reading which you and I were battered by parent and friend in our childhood, has indeed turned out to have been founded on workable engineering principles not only in this case but also in the case of the atom bomb, the death ray, the contraceptive pill, the polio vaccine, the heart transplant, and so on forever. The faith is so true and its practice and practitioners are so respectable that you cannot, as noted above, separate the poets from priests any more. And I think the Royko colum proves that writers like Heinlein were right—the technological experience can have emotional content not only for the Mr. Parkinsons of the world but for the readers of Mike Royko's column.

I'm saying that, except for latecoming readers, there is no new emotional charge to be found in it. Despite tomorrow's good story and the talented new writers who will try it—and the occasional commercial success—tech fiction story has entered the mainstream. Any skilled writer can write a skilled example of it without previous training—in part because he lives in the tech world we promised him. And in part because those fact-fiction promises are still preserved and familiar on every book rack in that world.

WE'RE getting more and more tech fiction that isn't. For instance, take Joe Poyer, who seems to be this year's Rick Raphael, meaning he's read a lot of last year's Alistair McLean.

Joe, like Rick, strikes me as the kind of fellow who has been stimulated by tech fiction, but can't reciprocrate. Robert Heinlein would have written "In addition to the civilian agency weather satellites, the Department of Defense maintained a series of its own." Not flowing, but communicative. In *North Cape*, however

(Doubleday, $4.95), Poyer wants you to be sure not to miss the point. So he writes: "In addition to the reports from the civilian agency weather satellites, the Department of Defense maintained a series of its own, devoted exclusively to gathering weather information strictly for the military."

You'd swear the man was being paid by the word, wouldn't you? But it's not that. It's, actually, an inability with the English language which, I suppose, is Poyer's mother tongue.

"The wind, blowing laconically for the past few minutes. . ."

"They were clumsy, but would serve to keep the wearer on top of, rather than floundering knee-deep in, the snow."

Then he wrote: ". . .violent winds that sheered off the crests, as neatly as would a razor, in long foamy streamers." Poetic, no? Unfortunately for tech fiction, the word is not "sheer," it's "shear," as in shearing action. Or as in a pair of shears. Which makes it kind of silly to be offering a razor as an alternative method of shaving waves. And a ship doesn't have "weigh" on her, not even if Miss Muffet has been by lately.

But here's my favorite:

"Gadsden staggered—literally staggered—up and sank down. . ."

Pause. Okay, now that we've got ourselves together again, and ignoring several hundred well-chosen words about the common semiliterate gaffe known as the premature interjection, let us consider the creative qualities of a man who admits that his characters may not be doing what he says they're doing, unless he nails it down with a good, solid literally.

I think the point is that in this story—which, as you'll see in a minute, is totally unfresh—Poyer got to the scene in which that figure was due to stagger. So he wrote down the words and, as he did so, because the Muse is not only fickle but sometimes a little stoned, he somehow actually saw it happen in his minds eye. And that "literally" marks the spot where for one exalted moment Joe Poyer peered through the bars.

The story. Ah. A CIA man named Teleman flies around and around the world in an invulnerable spy plane that nurtures and doctors him while he peers at screens and, once in a while, actually looks out through an "observation slit" (to prevent the ingress of arrows and other sharp objects, one assumes). He discovers the secret. Never mind what it is—all spy planes discover some secret if they fly around long enough. OK. Now he has it and so he turns and flies away with it, lickety split. For home? No. His instructions are to fly to a ship

which is being beaten up by the worst Arctic storm in a century. Why? Because if he flew home the book would have to be called *Airport*.

The Russians catch on. They shoot him down. He crashes on the North Cape and a landing party from the ship goes to his rescue. Not for his own sake alone but because he has The Secret. (He also had all kinds of radios. The secret can be put in a few sentences. How do I know? Poyer put it in sentences. The Russians chase the landing party. They catch it. There is a struggle. The Americans win. Who else?

Now. The entire science fiction content of this book is restricted to making the plane a little bit techier than anything we have at the moment and the ship a "battle cruiser" with big engines and no cannon. The story content is restricted to the kind of Pellioning on Ossa that McLean has been getting away with for years, in which the world's biggest storm hits a ship that just happens to have a weak bow. The attemped welds only weaken the hull and the waves won't let them turn when they have to. The Captain goes out on the icy deck to con the ship himself and it's *cold* and Gawd help us can nothing be done until *whup*—it's time to worry about the pilot again. So the ship turns without trouble and we never hear about the bow again because the pilot's troubles are now playing that role—until it's time to get back to the ship and Jesus now the condenser's frozen solid and blah, blah, blah.

This can of worms and neurotic tags is more and more typical of what's happening in the place where technological sf was. Far better writers, and very much better books, will come along. But this subliterate pastiche is not only increasing in frequency—it's admired in certain circles, as the Raphael drek was. And that's bad. Tech fiction has been subliterate before. But now it's getting sublogical.

OF COURSE, I don't have a logical book to propose as an antithetical example. I only have a paralogical one—Roger Zelazny's *Creatures of Light and Darkness* (Doubleday, $4.50).

Zelazny can't write a clumsy sentence. He can only write it in such a way that you have to guess at his state of mind. And this time he's really done it. (I seem to remember saying the same thing about Phil Dick a few years ago. And now Dick is either totally incoherent or else, sadly, too lucid). This book is what happens if you cross *Lord of Light* with *Master of Life and Death* and you're Roger Zelazny.

Doubleday calls this a bizarre

and comic fantasy. True. The sleeping beauty scene, for one, meets both requirements fully, and several others, too.

Oh. The story? Well, apparently there was this bunch of immortals who, growing in power and scope, decided to take on the attributes of the Egyptian gods and rule the known temporal universe, and took to quarelling among themselves. But the story's told from their viewpoint, which is rather ancient, and the viewpoint of the rather aged cultures of the future. Zelazny makes little if any attempt to tie these things back through time to our own worlds, so what we have is a story told as if the narrator could barely find the words to describe for us the accustomed things and persons of his own day. Sometimes, like any good storyteller wrapped up in his own visions, he utters some purely personal statement or tosses off an aside that many of us are not hip to.

We get a great big book, although it's shorter than *North Cape*, jammed full of adventure and poetry, lacking guideposts but possessing a nearly perfect clarity. The writer doesn't give you any help at all in figuring out what's happening, but you can be sure he's describing it exactly and standing aside so you can apply your own brain.

He also occasionally whaps off a stand of poetry or a bushel of playlet. The tableau, "What Child is This," brings all to a marvelous and satisfactory conclusion.

Almost, anyway.

What this kind of book offers you is lots and lots of rich, satisfactory detail and really moving human interplay. It has what we might call a simple plot. But if we call it that, what do we call a McLean-Poyer plot? Pause. Ah. You could compliment a woman on her simple dress but not her absurd one.

Okay. The Zelazny is a book that will probably baffle and infuriate as many people as the Poyer does. More, perhaps. It presents one major problem—it scares me into wondering if Zelazny will ever stop exploring this particular byway. And it isn't anything more than symtomatic of the vitality in a new way of going, which isn't the New Wave and isn't antiscience fiction and isn't Null-T, either, because the only believable and exciting inventive writing being done today about technological effects is writing by people like Zelazny and Delany.

I don't know what you'd call it. I'm not going to call it anything permanent until we can be reasonably sure we've got an accurate label. Or at least a good hint.

But that doesn't mean we can't be happy when people go there. ★

Brain Pollution

(continued from page 2)

caused by the dominant intelligence since the first slave ships traversed the seas. And then I would take a hard look at such mind-polluting terms as "unquestionable" and "success" and I would ask whose.

Why don't we? An answer just might point up the really important difference that's been there right along. Caucasoids, as such, have succeeded in failing monumentally and that is what is shaking up the world. Blacks, as such, have not yet failed.

I am not going to make anything of that point beyond stating it. But if I were Black, White, Iridescent or a porpoise I would worry achingly about an intelligence that would equate my inability to jump—after my legs had been amputated—with a sudden loss of hearing. Or one that would, against overwhelming evidence to the contrary, type my intelligence by my skin color.

I would, I presume, qualify by virtue of both genetics and color among Mr. Campbell's Caucasoids—if virtue is the word. I'm not at all sure that it is. But if I am going to be intellectually typed among them I'm entitled to some questions. Exactly what are us Caucasoids looking for? And what will we do with it when we find it? Will we alter our environment to benefit the Blacks—when we have thus far been able only to ruin it for ourselves?

Or are we groping for the last two legs of the centipede—the ones that have evolved into poison fangs?

But the prospect that really terrifies me is that, having been typed Caucasoid in intelligence, I might find myself living in a neighborhood infested with low-IQ millionaires and world-shakers like Mr. Campbell—and still have to ride in taxicabs whose drivers had not qualified for Mensa.

What's a hack license for?

I will, of course, permit my intelligence *and* my skin color to be examined and typed and compared with anyone's—provided the testing and the typing are done by someone who does not confuse the two. I do not wish to wind up covered all over with brains and with my skin jammed inside my skull.

And Mr. Campbell shouting at me, "Think!"

When Gertrude Stein wrote, "A rose is a rose is a rose—" she was simply correcting an old hack's: "A rose by any other name would smell as sweet."

Any Madison Avenue adman knows that he can make a rose smell like a stinkweed by giving it a new name.

Let's stop polluting our brains.

—JAKOBSSON

DUNE MESSIAH

FRANK HERBERT

WHAT HAS GONE BEFORE

Dune was an arid planet, inhabited by gigantic sandworms and wild Fremen whose customs were based on water scarcity. Its only resource was melange, an addictive drug produced by the worms. This "spice" aided longevity and gave an adept visions of the future.

After the murder of his noble father, PAUL ATREIDES was dumped into the desert, together with his pregnant mother, the LADY JESSICA, who had been trained by the Bene Gesserit – a female order devoted to mental arts and the control of genetic lines to produce a "kwisatz haderach," a messiah capable of using psi powers. Paul was to be their key to this.

In learning to live with the Fremen, Paul was forced to take an overdose of drug. This opened his mind permanently to the future – or futures. Lady Jessica also took an overdose with the result that ALIA, Paul's sister, was born with full knowledge of all her mother had known.

Paul, also known as MUAD' DIB, eventually led the Fremen against the Harkonnen rulers and their Sardaukar soldiers. In the battle, Paul's old friend and teacher, DUNCAN IDAHO, was killed. As ruler, Paul took the Harkonnen heir, PRINCESS IRULAN, as his consort. But he refused to consummate the marriage, remaining true to the Fremen woman CHANI.

Now twelve years later, Paul has made the desert bloom and he rules a mighty empire of stars. He has become almost a god to the Qizarate, a cult built around his visions. Against it, the other quasi-political, quasi-religious forces of humanity have just begun to unite.

Among these is the Bene Gesserit, headed by the Reverend Mother GAIUS HELEN MOHIAM, working through the weak help of their trainee, Princess Irulan. More or less with them is

the Bene Tleilax, supposedly amoral scientists; their representative is the Tleilaxu Face Dancer SCYTALE, who can look like any man or woman. The two groups have the aid of the Spacing Guild, which must control the melange trade, since only spice visions make interstellar navigation possible. Their Steersman EDRIC is more fishlike than human and must live in a tank. His main function is to obscure Paul's visions with his own gift so their plotting will not be detected.

They send Princess Irulan back to Paul to demand he give her an heir; she has so far kept Chani sterile by adding drugs to the Fremen woman's food. Paul refuses. He is filled with bitter visions, unsure but that he is the very instrument of the future he tries to avoid. He is sure, however, that a royal heir by Irulan will destroy all hope.

Paul detects the Reverend Mother on Edric's ship and has her arrested. But Scytale and BIJAZ, a created Tleilaxu dwarf, escape.

Scytale secretly visits a Fremen quarter to gain information. He leaves Bijaz behind but takes with him the semuta-addicted daughter of OTHEYM, a bitter old desert fighter. Her name is LICHNA.

During an interview with Edric, Paul learns nothing. The presence of the Steersman muddies all his future visions. It also upsets STILGAR, his minister of state, and KORBA, head of the Qizarate. Paul can only determine that the Reverend Mother has suggested that Princess Irulan have Chani killed, since Paul's mate now refuses the food containing the sterility drug.

Edric then makes Paul a shocking present – something that looks like Duncan Idaho, except for metallic eyes. It is a ghola – Duncan's body has been regrown from its cell patterns by Tleilaxu science. But it has no memories from its former life and is now named HAYT. Paul is disturbed by the fact that he saw no vision of Duncan's return. He asks the purpose of the gift, and Hayt answers: "I have been sent to destroy you." But Hayt does not know how it will come about. He tells Paul to send him away – but Paul cannot, since Duncan was once so close to him.

Alia is sent to study the body of a girl found in the desert. She can learn little, except that the corpse shows signs of semuta-addiction, but she is sure it indicates some grave danger. On the way back, Hayt reveals signs of being the real Duncan Idaho, and she is attracted to him in spite of herself. When he kisses her, she protests; but he tells her he only did what she wanted – and she realizes he is right.

On the verge of new struggles of empire, Paul finds nothing going well. There are reports of treason among the Fremen and an attempt to steal a worm and develop melange on another world – but which world Paul cannot see. He grows more worried as his visions grow more and more confusing.

He constantly sees a moon falling—some highly personal symbol of disaster; the meaning eludes him.

Paul sees the Reverend Mother Mohiam and tells her that Chani is now pregnant. For peace from her, he promises that Irulan may have a child by artifical insemination—but not an heir to the throne. Upset, she agrees to wait while she consults her order.

But it is no victory. Paul admits to the ghola—who is becoming more and more Duncan Idaho—that he knows the birth of an heir means Chani's death; there are problems because of the years of secret contraceptive. But he can do nothing.

Otheym's daughter Lichna—really Scytale in her form—appears with a message that Otheym asks Paul to come to him, since he has information on the traitor Fremen. Paul knows it is Scytale, but the future demands he act as if it were really Lichna. He is not encouraged when he visits one of Alia's religious ceremonies for the pilgrims; under an overdose of melange, she sees what he fears.

At Otheym's house, he meets Bijaz—and gets another shock, since there was no dwarf-ghola in his vision! Otheym speaks bitterly of treason, but says the dwarf knows the names of the disloyal. He gives Paul the dwarf as Paul leaves. Outside, Paul turns Bijaz over to Stilgar and begins directing the search for the traitors.

Then a blast of radiation strikes the searching troops. It is a forbidden "Stone Burner"—an atomic bomb in which the type of radiation can be adjusted. This one immediately destroys the eyes of all who see it. When it dies down, Paul orders that all the men be rescued and that those blinded shall have Tleilaxu artificial eyes like those of Hayt.

But for him there will be no Tleilaxu eyes. His sight is gone, as he foresaw. Now he moves only by the inner sight of his visions. And he knows how without doubt that what he has foreseen must surely be!

A Council meeting is called, Korba is accused of plotting with others to destroy Muad'dib with the Stone Burner. Korba complacently defends himself but Paul suddenly appears at the meeting and orders Korba imprisoned. Who were the other conspirators? Alia suspects even the stalwart Stilgar.

Bijaz, meeting the ghola, tells him he is not Hayt but indeed Duncan Idaho. Bijaz also reveals himself as an instrument of the Tleilaxu, and Hayt their slave. Bijaz proposes a scheme for catching Paul off-guard and killing him. Hayt fights back mentally.

Joining Alia, Hayt finds that she has taken an overdose of melange. She tells him that the Bene Gesserit want Chani's child—or a child of Alia's own. She foresees such a child but somehow cannot envision its father.

Hayt saves her from the death threatened by the drug overdose. She realizes he loves her. She calls him Duncan. He leaves to assist

Chani, who is bearing her child in the desert.

Hayt becomes aware that he is truly Duncan Idaho, and consequently is able to reveal Bijaz' plot to Paul. The two men rejoice at the renewal of their friendship.

True to the visions, Chani dies in childbirth—leaving Paul not one child but two, a son and a daughter.

(CONCLUSION)

"THAT'S where we're going, m'Lord." Again, Tandis bent close to Paul. "Why does your ghola carry a bared knife?"

"Duncan, put away your knife," Paul said. "The time for violence is past."

As he spoke, Paul felt closer to the sound of his voice than to the mechanism which had created the sound. *Two babies!* The vision had contained but one. Yet, these moments went as the vision went. There was a person here who felt grief and anger. Someone. His own awareness lay in the grip of an awful treadmill, replaying his life from memory.

Two babies?

Again, he stumbled. *Chani, Chani,* he thought. *There was no other way. Chani, beloved, believe me that this death was quicker for you... and kinder. They'd have held our children hostage, displayed you in a cage and slave pits, reviled you with the blame for my death. This way... this way we destroy them and save our children.*

Children?

Once more, he stumbled.

I permitted this, he thought. *I should feel guilty.*

The sound of noisy confusion filled the cavern ahead of them. It grew louder precisely as he remembered it growing louder. Yes, this was the pattern, the inexorable pattern, even with two children.

Chani is dead, he told himself.

At some far away instant in a past which he had shared with others, this future had reached down to him. It had chivvied him and herded him into a chasm whose walls grew narrower and narrower. He could feel them closing in on him. This was the way the vision went.

Chani is dead. I should abandon myself to grief.

But that was *not* the way the vision went.

"Has Alia been summoned?"

"She is with Chani's friends," Tandis said.

Paul sensed the mob pressing back to give him passage. Their silence moved ahead of him like a wave. The noisy confusion began dying down. A sense of congested emotion filled the sietch. He wanted to remove the people from his vision, but found it impossible. Every face turning to follow him carried its special imprint. They were pitiless with curiosity, those faces. They felt grief, yes, but he understood the cruelty which drenched them. They were watching the articulate be-

come dumb, the wise become a fool. Didn't the clown always appeal to cruelty?

This was more than a death watch, less than a wake.

PAUL felt his soul begging for respite, but still the vision moved him. *Just a little farther now,* he told himself. Black, visionless dark awaited him just ahead. There lay the place ripped out of the vision by grief and guilt, the place where the moon fell.

He stumbled into it and would have fallen had Idaho not taken his arm in a fierce grip, a solid presence knowing how to share his grief in silence.

"Here is the place," Tandis said.

"Watch your step, Sire," Idaho said, helping him over an entrance lip. Hangings brushed Paul's face. Idaho pulled him to a halt. Paul felt the room then, a reflection against his cheeks and ears. It was a rock-walled space with the rock hidden behind tapestries.

"Where is Chani?" Paul whispered.

Harah's voice answered him: "She is right here, Usul."

Paul heaved a trembling sigh. He had feared her body already had been removed to the stills where Fremen reclaimed the water of the tribe. Was that the way the vision went? He felt abandoned in his blindness.

"The children?" Paul asked.

"They are here, too, m'Lord," Idaho said.

"You have beautiful twins, Usul," Harah said, "a boy and a girl. See? We have them here in a creche."

Two children, Paul thought wonderingly. The vision had contained only a daughter. He cast himself adrift from Idaho's arm, moved toward the place where Harah had spoken and stumbled into a hard surface. His hands explored it – the metaglass outlines of a creche.

Someone took his left arm. "Usul?" It was Harah. She guided his hand into the creche. He felt soft-soft flesh. It was so warm! He felt ribs, breathing.

"That is your son," Harah whispered. She moved his hand. "And this is your daughter." Her hand tightened on his. "Usul, are you truly blind now?"

He knew what she was thinking. *The blind must be abandoned in the desert.* Fremen tribes carried no dead weight.

"Take me to Chani," Paul said, ignoring her question.

Harah turned him, guiding him to the left.

Paul felt himself accepting now the fact that Chani was dead. He had taken his place in a universe he did not want, wearing flesh that did not fit. Every breath he drew bruised his emotions. *Two children!* He wondered if he had committed himself to a passage where his vision would never return. It seemed unimportant.

"Where is my brother?"

It was Alia's voice behind him. He heard the rush of her, the overwhelming presence as she took his arm from Harah.

"I must speak to you!" Alia hissed.

"In a moment," Paul said.

"Now! It's about Lichna."

"I know," Paul said. "In a moment."

"You don't have a moment!"

"I have many moments."

"But Chani doesn't!"

"Be still!" he ordered. "Chani is dead." He put a hand across her mouth as she started to protest. "I order you to be still!" He felt her subside and removed his hand. "Describe what you see."

"Paul!" Frustration and tears battled in her voice.

"Never mind," he said. And he forced himself to inner stillness, opened the eyes of his vision to this moment. Yes — it was still here. Chani's body lay on a pallet within a ring of light. Someone had straightened her white robe and smoothed it, trying to hide the blood of the birth. No matter; he could not turn his awareness from the vision of her face — such a mirror of eternity in the still features!

HE turned away, but the vision moved with him. She was gone ... never to return. The air, the universe, all vacant — everywhere vacant. Was this the essence of his penance? He wanted tears, but they would not come. Had he lived too long a Fremen? This death demanded its moisture!

Nearby, a baby cried and was hushed. The sound pulled a curtain on his vision. Paul welcomed the darkness. *This is another world,* he thought. *Two children.*

The thought came out of some lost oracular trance. He tried to recapture the timeless mind-dilation of the melange, but awareness fell short. No burst of the future came into this new consciousness. He felt himself rejecting the future — any future.

"Goodbye, my Sihaya," he whispered.

Alia's voice, harsh and demanding, came from somewhere behind him. "I've brought Lichna!"

Paul turned. "That's not Lichna," he said. "That's a face dancer. Lichna's dead."

"But hear what she says," Alia said.

Slowly, Paul moved toward his sister's voice.

"I'm not surprised to find you alive, Atreides." The voice was like Lichna's, but with subtle differences, as though the speaker used Lichna's vocal chords, but no longer bothered to control them sufficiently. Paul found himself struck by an odd note of honesty in the voice.

"Not surprised?" Paul asked.

"I am Scytale, a Tleilaxu of the Face Dancers, and I would know a thing before we bargain. Is that a ghola I see behind you, or Duncan Idaho?"

"It's Duncan Idaho," Paul said. "And I will not bargain with you."

"I think you'll bargain."

"Duncan," Paul said, speaking over his shoulder, "will you kill this Tleilaxu if I ask it?"

"Yes, m'Lord." There was the

suppressed rage of a berserker in Idaho's voice.

"Wait!" Alia said. "You don't know what you're rejecting."

"But I do know," Paul said.

"So it's truly Duncan Idaho of the Atreides," Scytale said. "We found the lever! A ghola *can* regain his past." Paul heard footsteps. Someone brushed past him on the left. Scytale's voice came from behind now. "What do you remember of your past, Duncan?"

"Everything. From my childhood on. I even remember you at the tank when they removed me from it," Idaho said.

"Wonderful."

Paul heard the voice moving. *I need a vision,* he thought. Darkness frustrated him. Bene Gesserit training warned him of terrifying menace in Scytale, yet the creature remained a voice, a shadow of movement – entirely beyond him.

"Are these the Atreides babies?" Scytale asked.

"Harah!" Paul cried. "Get her away from there!"

"Stay where you are!" Scytale shouted. "All of you! I warn you, a face dancer can move faster than you suspect. My knife can have both these lives before you touch me."

Paul felt someone nudge his right arm, then move off to the right.

"That's far enough, Alia," Scytale said.

"Alia," Paul said. "Don't."

"It's my fault," Alia groaned. "My fault!"

"Atreides," Scytale said, "shall we bargain now?"

BEHIND him, Paul heard a single hoarse curse. His throat constricted at the suppressed violence in Idaho's voice. Idaho must not break. Scytale would kill the babies!

"To strike a bargain, one requires a thing to sell," Scytale said. "Not so, Atreides? Will you have your Chani back? We can restore her to you. A ghola, Atreides. A ghola *with full memory!* But we must hurry. Call your friends to bring a cryologic tank to preserve her flesh."

To hear Chani's voice once more, Paul thought. *To feel her presence beside me. Ahhh, that's why they gave me Idaho as a ghola, to let me discover how much the re-creation is like the original. And now – full restoration . . . at their price. I'd be a Tleilaxu tool forevermore. And Chani . . . chained to the same fate by a threat to our children, exposed once more to the Qizarate's plotting . . .*

"What pressures would you use to restore Chani's memory to her?" Paul asked, fighting to keep his voice calm. "Would you condition her to . . . to kill one of her own children?"

"We use whatever pressures we need," Scytale said. "What say you, Atreides?"

"Alia," Paul said, "bargain with this *thing*. I cannot bargain with what I cannot see."

"A wise choice," Scytale gloated. "Well, Alia, what do you offer me?"

Paul lowered his head, bringing himself to stillness within stillness.

He'd glimpsed something just then — like a vision, but not a vision. It had been a knife close to him. There!

"Give me a moment to think," Alia said.

"My knife is patient," Scytale said, "but Chani's flesh is not. Take a *reasonable* amount of time."

Paul felt himself blinking. It could not be... but it was! He felt eyes. Their vantage point was odd and they moved in an erratic way. *There!* The knife swam into his view. With a breath-stilling shock, Paul recognized the viewpoint. It was that of one of his children! He was seeing Scytale's knife hand from within the creche! It glittered only inches from him. Yes — and he could see himself across the room, as well — head down, standing quietly, a figure of no menace, ignored by the others in this room.

"To begin, you might assign us all your CHOAM holdings."

"All of them?" Alia protested.

"All."

Watching himself through the eyes in the creche, Paul slipped his crysknife from its belt sheath. The movement produced a strange sensation of duality. He measured the distance, the angle. There'd be no second chance. He prepared his body then in the Bene Gesserit way, armed himself like a cocked spring for a single concentrated movement, a *prajna* thing requiring all his muscles balanced in one exquisite unity.

The crysknife leaped from his hand. The milky blue of it flashed into Scytale's right eye, jerked the Face Dancer's head back. Scytale threw both hands up and staggered backward against the wall. His knife clattered off the ceiling, to hit the floor. Scytale rebounded from the wall; he fell face toward, dead before touching the floor.

STILL through the eyes in the creche, Paul watched the faces in the room turn toward his eyeless figure, read the combined shock. Then Alia rushed to the creche, bent over it and hid the view from him.

"Oh, they're safe," Alia said. "They're safe."

"M'Lord," Idaho whispered, "was *that* part of your vision?"

"No." He waved a hand in Idaho's direction. "Let it be."

"Forgive me, Paul," Alia said. "But when that creature said they could... revive..."

"There are some prices an Atreides cannot pay," Paul said. "You know that."

"I know," she sighed. "But I was tempted..."

"Who was not tempted?"

He turned away from them, groped his way to a wall, leaned against it and tried to understand what he had done. *How? How? The eyes in the creche!* He felt poised on the brink of terrifying revelation.

"My eyes, father."

The word-shapings shimmered before his sightless vision.

"My son!" Paul whispered, too low for any to hear. "You're... aware."

"Yes, father. Look!"

Paul sagged against the wall in a spasm of dizziness. He felt that he'd been upended and drained. His own life whipped past him. He saw his father. He *was* his father. And the grandfather, and the grandfathers before that. His awareness tumbled through a mind-shattering corridor of his whole male line.

"How?" he then asked silently.

Faint word-shapings appeared, faded and were gone, as though the strain was too great. Paul wiped saliva from the corner of his mouth. He remembered the awakening of Alia in the Lady Jessica's womb. But there had been no Water of Life, no overdose of melange this time... or had there? Had Chani's hunger been for that? Or was this somehow the genetic product of his line foreseen by the Reverend Mother Gaius Helen Mohiam?

Paul felt himself in the creche then, with Alia cooing over him. Her hands soothed him. Her face loomed, a giant thing directly over him. She turned him then and he saw his creche companion – a girl with that bony-ribbed look of strength which came from a desert heritage. She had a full head of tawny red hair. As he stared, she opened her eyes. Those eyes! Chani peered out of her eyes... and the Lady Jessica. A multitude peered out of those eyes.

"Look at that," Alia said. "They're staring at each other."

"Babies can't focus at this age," Harah said.

"I could," Alia said.

Slowly, Paul felt himself being disengaged from that endless awareness. He was back at his own wailing wall then, leaning against it. Idaho shook his shoulder gently.

"M'Lord?"

"Let my son be called Leto for my father," Paul said, straightening.

"At the time of naming," Harah said, "I will stand beside you as a friend of the mother and give that name."

"And my daughter," Paul said. "Let her be called Ghanima."

"Usul!" Harah objected. "Ghanima's an ill-omened name."

"It saved your life," Paul said. "What matter that Alia made fun of you with that name? My daughter is Ghanima, a spoil of war."

Paul heard wheels squeak behind him then – the pallet with Chani's body being moved. The chant of the Water Rite began.

"Hal yawm!" Harah said. "I must leave now if I am to be the observer of the holy truth and stand beside my friend for the last time. Her water belongs to the tribe."

"Her water belongs to the tribe," Paul murmured. He heard Harah leave. He groped outward and found Idaho's sleeve. "Take me to my quarters, Duncan."

INSIDE his quarters, he shook himself free gently. It was a time to be alone. But before Idaho

could leave there was a disturbance at the door.

"Master!" It was Bijaz calling from the doorway.

"Duncan," Paul said, "let him come two paces forward. Kill him if he comes farther."

"Ayyah," Idaho said.

"Duncan is it?" Bijaz asked. "Is it *truly* Duncan Idaho?"

"It is," Idaho said. "I remember."

"Then Scytale's plan succeeded!"

"Scytale is dead," Paul said.

"But I am not and the plan is not," Bijaz said. "By the tank in which I grew! It can be done! I shall have my pasts – all of them. It needs only the right trigger!"

"Trigger?" Paul asked.

"The compulsion to kill you," Idaho said, rage thick in his voice. "Mentat computation: They found that I thought of you as the son I never had. Rather than slay you, the true Duncan Idaho would take over the ghola body. But . . . it might have failed. Tell me, dwarf, if your plan had failed, if I'd killed him, what then?"

"Oh . . . then we'd have bargained with the sister to save her brother. But this way the bargaining is better."

Paul took a shuddering breath. He could hear the mourners moving down the last passage now toward the deep rooms and the water stills.

"It's not too late, m'Lord," Bijaz said. "Will you have your love back? We can restore her to you. A ghola, yes. But now – we hold out the full restoration. Shall we summon servants with a cryological tank, preserve the flesh of your beloved . . ."

It was harder now, Paul found. He had exhausted his powers in the first Tleilaxu temptation. And now all that was for nothing! To feel Chani's presence once more . . .

"Silence him," Paul told Idaho, speaking in Atreides battle tongue. He heard Idaho move toward the door.

"Master!" Bijaz squeaked.

"As you love me," Paul said, still in battle tongue, "do me this favor: kill him before I succumb!"

"Nooooooooo . . ." Bijaz screamed.

The sound stopped abruptly with a frightened grunt.

"I did him the kindness," Idaho said.

Paul bent his head, listening. He no longer could hear the mourners. He thought of the ancient Fremen rite being performed now deep in the sietch, far down in the room of the death-still where the tribe recovered its water.

"There was no choice," Paul said.

"I understand."

"There are some things no one can bear. I meddled in all the possible futures I could create until, finally, they created me."

"M'Lord, you shouldn't . . ."

"There are problems in this universe for which there are no answers," Paul said. "Nothing. Nothing can be done."

As he spoke, Paul felt his link

with the vision shatter. His mind cowered, overwhelmed by infinite possibilities. His lost vision became like the wind, blowing where it willed.

XXIII

We say of Muad'dib that he has gone on a journey into that land where we walk without footprints.

—Preamble to the Quzarate Creed

THERE was a dike of water against the sand, an outer limit for the plantings of the sietch holding. A rock bridge came next and then the open desert beneath Idaho's feet. The promontory of Sietch Tabr dominated the night sky behind him. The light of both moons frosted its high rim. An orchard had been brought right down to the water.

Idaho paused on the desert side and stared back at flowered branches over silent water — reflections and reality — four moons. The stillsuit felt greasy against his skin. Wet flint odors invaded his nostrils past the filters. There was a malignant simpering to the wind through the orchard. He listened for night sounds. Kangaroo mice inhabited the grass at the water verge; a hawk owl bounced its droning call into the cliff shadows; the wind-broken hiss of a sandfall came from the open bled.

It was Tandis who had brought Paul this far. Then the man had returned to tell his account. And Paul had walked out into the desert — like a Fremen.

"He was blind — truly blind," Tandis had said, as though that explained it. "Before that, he had the vision which he told to us... but..."

A shrug. Blind Fremen were abandoned in the desert. Muad'dib might be Emperor, but he was also Fremen. Had he not made provision that Fremen guard and raise his children? He was Fremen.

It was a skeleton desert here, Idaho saw. Moon-silvered ribs of rock showed through the sand; then the dunes began.

I should not have left him alone, not even for a minute, Idaho thought. *I knew what was in his mind.*

"He told me the future no longer needed his physical presence," Tandis had reported. "When he left me, he called back. 'Now I am free' were his words."

Damn them! Idaho thought.

The Fremen had refused to send 'thopters or searchers of any kind. Rescue was against their ancient customs.

"There will be a worm for Muad'dib," they said. And they began the chant for those committed to the desert, the ones whose water went to Shai-hulud: "Mother of sand, father of Time, beginning of Life, grant him passage."

Idaho seated himself on a flat rock and stared at the desert. The night out there was filled with camouflage patterns. There was no way to tell where Paul had gone.

"Now I am free."

Idaho spoke the words aloud, surprised by the sound of his own voice. For a time, he let his mind run, remembering a day when he'd taken the child Paul to the sea market on Caladan, the dazzling glare of sun on water, the sea's riches brought up dead, there to be sold. Idaho remembered Gurney Halleck playing music of the baliset for them – pleasure, laughter. Rhythms pranced in his awareness, leading his mind like a thrall down channels of remembered delight.

Gurney Halleck. Gurney would blame him for this tragedy.

MEMORY music faded. He recalled Paul's words: *There are problems in this universe for which there are no answers."*

Idaho began to wonder how Paul would die out there in the desert. Quickly, killed by a worm? Slowly, in the sun? Some of the Fremen back there in the sietch had said Muad'dib would never die, that he had entered the ruh-world where all possible futures existed, that he would be present henceforth in the *alam al mythal,* wandering there endlessly even after his flesh had ceased to be.

He'll die and I'm powerless to prevent it, Idaho thought.

He began to realize that there might be a certain fastidious courtesy in dying without a trace – no remains, nothing, and an entire planet for a tomb.

Mentat, solve thyself, he thought.

Words intruded on his memory – the ritual words of the Fedaykin lieutenant, posting a guard over Muad'dib's children: "It shall be the solemn duty of the officer in charge . . ."

The plodding, self-important language of government enraged him. It had seduced the Fremen. It had seduced everyone. A man, a great man, was dying out here, but language plodded on . . .

What had happened, he wondered, to all the clean meanings that screened out nonsense? Somewhere, in some lost *where* which this Imperium had created, they'd been walled off, sealed against chance re-discovery. His mind quested for solutions, mentat fashion. Patterns of knowledge glistened there. Lorelei hair might shimmer thus, beckoning . . . beckoning the enchanted seaman into emerald caverns . . .

With an abrupt start, Idaho drew back from catatonic forgetfulness.

So! he thought. *Rather than face my failure, I would disappear within myself!*

The instant of that almost-plunge remained in his memory. Examining it, he felt his life stretch out as long as the existence of the universe. Real flesh lay condensed, finite in its emerald cavern of awareness, but infinite life had shared his being.

Idaho stood up, feeling cleansed by the desert. Sand was beginning to chatter in the wind, pecking at the surfaces of leaves in the orchard behind him. There was the dry and abrasive smell of dust in

the night air. His robe whipped to the pulse of a sudden gust.

Somewhere far out in the bled, Idaho realized, a mother storm raged, lifting vortices of winding dust in hissing violence – giant worm of sand powerful enough to cut flesh from bones.

He will become one with the desert, Idaho thought. *The desert will fulfill him.*

It was a Zensunni thought washing through his mind like clear water. Paul would go on marching out there, he knew. An Atreides would not give himself up completely to destiny, not even in the full awareness of the inevitable.

A touch of prescience came over Idaho then, and he saw that people of the future would speak of Paul in terms of seas. Despite a life soaked in dust, water would follow him. "His flesh foundered," they would say, "but he swam on."

BEHIND Idaho, a man cleared his throat.

Idaho turned to discern the figure of Stilgar standing on the bridge over the qanat.

"He will not be found," Stilgar said. "Yet all men will find him."

"The desert takes him – and deifies him," Idaho said. "Yet he was an interloper here. He brought an alien chemistry to this planet – water."

"The desert imposes its own rhythms," Stilgar said. "We welcomed him, called him our Mahdi, our Muad'dib, and gave him his secret name, Base of the Pillar: Usul."

"Still, he was not born a Fremen."

"And that does not change the fact that we claimed him... and have claimed him finally." Stilgar put a hand on Idaho's shoulder. "All men are interlopers, old friend."

"You're a deep one, aren't you, Stil?"

"Deep enough. I can see how we clutter the universe with our migrations. Muad'dib gave us something uncluttered. Men will remember his Jihad for that, at least."

"He won't give up to the desert," Idaho said. "He's blind, but he won't give up. He's a man of honor and principle. He was Atreides-trained."

"And his water will be poured on the sand," Stilgar said. "Come." He pulled gently at Idaho's arm. "Alia is back and is asking for you."

"She was with you at Sietch Makab?"

"Yes – she helped whip those soft Naibs into line. They take her orders now... as do I."

"What orders?"

"She commanded the execution of the traitors."

"Oh." Idaho suppressed a feeling of vertigo as he looked up at the promontory. "Which traitors?"

"The Guildsman, the Reverend Mother Mohiam, Korba... a few others."

"You slew a Reverend Mother?"

"I did. Muad'dib left word that it should not be done." He

shrugged. "But I disobeyed him, as Alia knew I would."

Idaho stared again into the desert, feeling himself become whole, one person capable of seeing the pattern of what Paul had created. *Judgment strategy*, the Atreides called it in their training manuals. *People are subordinate to government, but the ruled influence the rulers.* Did the ruled have any concept, he wondered, of what they had helped create here?

"Alia..." Stilgar said, clearing his throat. He sounded embarrassed. "She needs the comfort of your presence."

"And she is the government."

"A regency, no more."

"Fortune passes everywhere, as her father often said," Idaho muttered.

"We make our bargain with the future," Stilgar said. "Will you come now? We need you back there." Again, he sounded embarrassed. "She is ... distraught. She cries out against her brother one moment, mourns him the next."

"Presently," Idaho promised. He heard Stilgar leave. He stood facing into the rising wind, letting the grains of sand rattle against the stillsuit.

MENTAT awareness projected the outflowing patterns into the future. The possibilities dazzled him. Paul had set in motion a whirling vortex and nothing could stand in its path.

The Bene Tleilax and the Guild had overplayed their hand and had lost, were discredited. The Qizarate was shaken by the treason of Korba and others high within it. And Paul's final voluntary act, his ultimate acceptance of their customs, had ensured the loyalty of the Fremen to him and to his house. He was one of them forever now.

"Paul is gone!" Alia's voice was choked. She had come up almost silently to where Idaho stood and was now beside him. "He was a fool, Duncan!"

"Don't say that!" he snapped.

"The whole universe will say it before I'm through," she said.

"Why, for the love of heaven?"

"For the love of my brother, not of heaven."

Zensunni insight dilated his awareness. He could sense that there was no vision in her – had been none since Chani's death. "You practice an odd love," he said.

"Love? Duncan, he had but to step off the track! What matter that the rest of the universe would have come shattering down behind him? He'd have been safe... and Chani with him!"

"Then... why didn't he?"

"For the love of heaven," she whispered. Then, more loudly, she said: "Paul's entire life was a struggle to escape his Jihad and its deification. At least, he's free of it. He chose this!"

"Ah, yes – the oracle." Idaho shook his head in wonder. "Even Chani's death. His moon fell."

"He *was* a fool, wasn't he, Duncan?"

Idaho's throat tightened with suppressed grief.

"Such a fool!" Alia gasped, her control breaking. "He'll live forever while we must die!"

"Alia, don't . . ."

"It's just grief," she said, voice low. "Just grief. Do you know what I must do for him? I must save the life of the Princess Irulan. That one! You should hear *her* grief. Wailing, giving moisture to the dead; she swears she loved him and knew it not. She reviles her Sisterhood, says she'll spend her life teaching Paul's children."

"You trust her?"

"She reeks of trustworthiness!"

"Ahhh," Idaho murmured. The final pattern unreeled before his awareness like a design on fabric. The defection of the Princess Irulan was the last step. It left the Bene Gesserit with no remaining lever against the Atreides heirs.

Alia began to sob, leaned against him, face pressed into his chest. "Ohhh, Duncan, Duncan! He's gone!"

Idaho put his lips against her hair. "Please," he whispered.

"I need you, Duncan," she sobbed. "Love me!"

"I do," he whispered.

She lifted her head, peered at the moon-frosted outline of his face. "I know, Duncan. Love knows love."

Her words sent a shudder through him, a feeling of estrangement from his old self. He had come out here looking for one thing and had found another. It was as though he'd lurched into a room full of familiar people only to realize too late that he knew none of them.

She pushed away from him, took his hand. "Will you come with me, Duncan?"

"Wherever you lead," he said.

She led him back across the qanat into the darkness at the base of the massif and its Place of Safety. ★

EPILOG

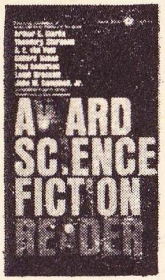
No bitter stench of funeral-still for Muad'dib.
No knell nor solemn rite to free the mind
From avaricious shadows.
He is the fool saint,
The golden stranger living forever
On the edge of reason.
Let your guard fall and he is there!
His crimson peace and sovereign pallor
Strike into our universe on prophetic webs
To the verge of a quiet glance—there!
Out of bristling star-jungles:
Mysterious, lethal, an oracle without eyes,
Catspaw of prophecy, whose voice never dies!
Shai-hulud, he awaits thee upon a strand
Where couples walk and fix, eye to eye,
The delicious ennui of love.
He strides through the long cavern of time,
Scattering the fool-self of his dream.

—the Ghola's Hymn

SPECIAL TO GALAXY & IF READERS...
THE BEST IN
SCIENCE FICTION BOOKS...

worth adding to your library... stories you will treasure...
available to you at a special 10% discount

Conveniently obtained from GALAXY Magazine. No searching, no book clubs, no commitments. Here are the books of enduring value that you will want to own... for hours of science-fiction pleasure, to be read, reread, and discussed with your friends. These are the books that have proven themselves... filled with all of the features you look for in S-F... written by the acknowledged masters of the art. Just circle your choices below, mail to us, and the books will be in your hands shortly, ready to transport you to new, thrilling, imaginative worlds.



FREE—with every order for 2 or more books...

AWARD SCIENCE FICTION READER. 188 pages, containing stories by such masters of science fiction as Arthur C. Clarke, Theodore Sturgeon, A. E. van Vogt, Clifford Simak, Poul Anderson, Leigh Brackett, John W. Campbell, Jr. All of the stories belong to the excitingly modern era that swept SF to its greatest pinnacle of popularity.

S-1

NONE BUT MAN by Gordon R. Dickson. Aliens from Moldaug, inhuman stars from the last human settlement, are gathering together for war. Old world inhabitants are willing to sacrifice the new world colonies in order to avert this war. But not rugged individualist Cully When, the type of man who has pioneered frontiers in all times and all places. Set in some future time, this action-filled adventure depicts space-age guerrilla warfare and age-old human stupidity with excitement and ends with an explosive climax.

253 pp. List Price...$4.95 Discount Price...$4.46

S-2

A CASE OF CONSCIENCE by James Blish. Two separate and complete worlds—idyllic Lithia and a culture on Earth that has literally gone under ground, provides the basis for the story of four extraordinary men. There is the priest, dedicated to the glory of God; the scientist working for the glory of man; the realist who works only for himself; and the man who is content to ask nothing of any world, any man, or any deity. The author presents a compelling moral problem. This book is something of a *tour de force.*

188 pp. List Price...$4.50 Discount Price...$4.05

S-3

BUG JACK BARRON by Norman Spinrad. Explore the edge of tomorrow... who will be chosen for immortality? Who will make this ultimate decision —the government, free enterprise, or private monopoly? A new, highly controversial novel, infused with blood and guts, examining the disease of power as well as the responsibility. Both praised and damned before it was even published, this novel deserves your personal attention.

327 pp. List Price...$5.95 Discount Price...$5.36

S-4

UBIK by Philip K. Dick. If Joe Chip was alive why was he riding in a 1939 Willys-Knight? If he was dead why wasn't he beginning a chilly half-life in the year 1992? And Gene Runciter—murdered—but sending him eerie messages from beyond the grave? Everywhere and anywhere Joe turned, in sky-writing, on a traffic ticket, graffiti, matchbook covers was the word UBIK. But what did it mean and did Joe really want to know the answer? Read this exciting, new novel that starts as an important Luna Mission and ends as a living or dying diabolical nightmare.

202 pp. List Price...$4.50 Discount Price...$4.05

S-5

THE MIDWICH CUCKOOS by John Wyndham. For an entire day, a small rural village in England loses contact with the outside world. Soon after, all the women, married or not become pregnant, eventually giving birth to remarkable golden-eyed children who exhibit a strange kind of sinisterism. They are dangerous and Midwich must make the ultimate decision—if the children survive, then mankind must join the dinosaur among Nature's discards. A gripping account of man's fight for survival.

189 pp. List Price...$4.50 Discount Price...$4.05

S-6

THE SPACE MERCHANTS by Frederik Pohl and C. M. Kornbluth. Two major advertising agencies are fighting for the Venus account—nothing less than total control of the Venus economy and markets will do. It is completely unimportant that Venus is a harsh, barren, uninhabited planet. According to the mentality of Mitchell Courtenay of Fowler Schocken Associates, the trick is to persuade colonists to go to Venus, and once there, they will have to survive as best they can. One of the most savage and devastating attacks on modern consumer society and the advertising agents who are its high priests, *The Space Merchants* is uncomfortably prophetic.

158 pp. List Price...$4.50 Discount Price...$4.05

S-7

BRAIN WAVE by Poul Anderson. Imagine, some mysterious space force that inhibits the world's intelligence. But suddenly, it's gone and overnight the intellect of every living creature is trebled. What are the consequences of such instant genius? These are the problems confronting Archie Brock, former near moron; Peter Corinth, physicist; and his no-longer dumb wife. This provocative and absorbing book explores the ultimate problem of such a situation—in a world free of the difficulties that has plagued mankind throughout history, what is man to do with his time?

164 pp. List Price...$4.50 Discount Price...$4.05

S-8

BEST SF: 1968 edited by Harry Harrison and Brian W. Aldiss. Collected for the first time... the best SF stories of 1968... Asimov, Sheckley, MacDonald, Leiber... plus 10 other exciting stories... and, selected reviews explaining THE SF picture of the year, *2001: A Space Odyssey*. This rich anthology of the year's most exciting stories from the best SF magazines in the world is a MUST for your SF bookshelf.

245 pp. List Price...$4.95 Discount Price...$4.46

S-9

THE PAST THROUGH TOMORROW, Robert A. Heinlein's Future History Stories. Twenty-five years ago Robert A. Heinlein began to write stories about an imaginary future that is fast becoming a reality. Discover, through the pen of the master of space-age fiction, about man's first step on the moon; weather control; manufacture of synthetic food; interstellar exploration. Now, for the first time, in chronological order, are Heinlein's 21 compelling stories—all depicting a glimpse of a possible tomorrow.

667 pp. List Price...$6.95 Discount Price...$6.26

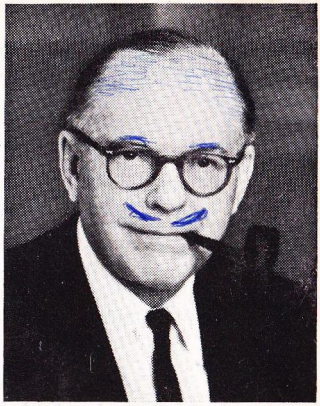
S-10

THORNS by Robert Silverberg. Duncan Chalk, master pain peddler, skillful and sophisticated, lives in a time when reading tragic headlines no longer provides the necessary sensations. Into Chalk's sinister hands falls Lona Kelvin, orphaned, mother of 100 children, yet without a soul; and Minner Burris, starman, whose butchered body was put together by aliens, a walking horror. What fun to mate these two and watch them wallow in their mutual torment. But somewhere, something went wrong. Discover what happens when the puppets begin to pull their own strings in this imaginative, chilling book.

222 pp. List Price...$4.95 Discount Price...$4.46

Do you have a restless urge to write?

If you do, here is an opportunity for you to take the first important step to success in writing



Bennett Cerf, the distinguished publisher, is a member of the Guiding Faculty of the Famous Writers School.

There's something different about people who feel the urge to write. They have a spiritual hunger that sets them apart—even from family and friends.

If you have known this burning need to write, you, too, may have the gift successful authors possess.

They know that this restless urge for self-expression is perhaps the most important ingredient of writing success. But, they realize it can waste away if you don't know how to get started writing, or if you hesitate to try.

Several years ago a group of famous authors including Rod Serling, Faith Baldwin, Bennett Cerf, Bruce Catton, and several others joined forces to start the Famous Writers School. They poured everything they know about writing into a remarkable new kind of professional training course which trains you at home in your spare time. You begin with the fundamentals of all good writing. Then you get advanced training in the specialty of your choice.

Each of your assignments is examined by an instructor who is a professional writer or editor. He goes over your work word by word, blue-penciling changes right on your manuscript. Then he returns it to you with a long letter of advice on how to improve your writing.

This training works well. Our students have sold their writing to hundreds of publications.

Free Aptitude Test offered

To find out if you, too, have writing ability worth developing, send for the School's revealing Aptitude Test. If you test well, or offer other evidence of writing aptitude—you may enroll. However, there is no obligation to do so.

Famous Writers School
Dept. W-4522
Westport Connecticut 06880

I want to know if I have writing aptitude worth developing. Please mail me, without obligation, your Aptitude Test and illustrated brochure.

Mr.
Mrs.....Age.....
Miss [Circle one please print]

Street.....

City.....

State.....Zip.....

Accredited by the Accrediting Commission of the National Home Study Council.

Printed in U.S.A.