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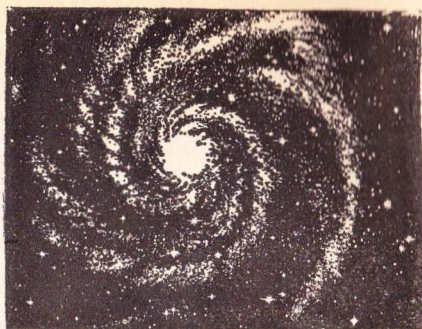
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Galaxy

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ALL STORIES NEW

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from DOOR TO ANYWHERE

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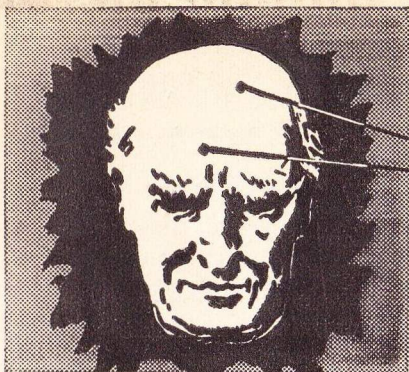
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CORDWAINER SMITH

Of all the New Masters of science fiction that have turned up in the past decade or two, the man called Cordwainer Smith surely ranks among the highest. His first story appeared in a small-circulation magazine published on the West Coast in the late 40's; it was called *Scanners Live in Vain*, and it is perhaps the chief reason why that magazine is remembered. One story . . . that was all anyone had seen from him, and for several years there were no more.

Then, gradually, others began to appear. A short story here; a year or so later, a novelette there. Readers began to look for his name. In his stories, which were a wonderful and inimitable blend of a strange, raucous poetry and a detailed technological scene, we began to read of human beings in worlds so far from our own in space in time that they were no longer quite Earth (even when they were the third planet out from Sol), and the people were no longer quite human, but something perhaps better, certainly different.

Most of Cordwainer Smith's stories appeared first in this magazine, a circumstance which has given us a good deal of pride over the years. But with an even greater measure of sorrow we have to say that there will be few more of them, perhaps none at all.

In the hot August of 1966 Paul Linebarger died.

One of the most closely guarded secrets in science fiction was that Cordwainer Smith and Dr. Paul Linebarger of Johns Hopkins and the State Department were one and the same man.

He was a fascinating man, and a warm and friendly one. His background was — there is no other word for it — unique: godson of Sun Yat Sen, confidante of rulers of half Asia, consultant to American foreign policy. He was not a man who could readily be spared.

He is deeply missed, for his stories and for himself.

— FREDERIK POHL

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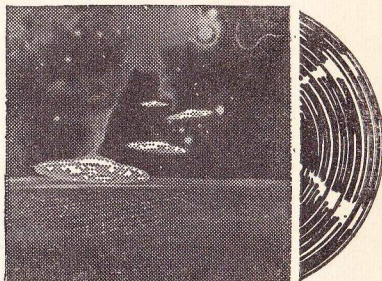
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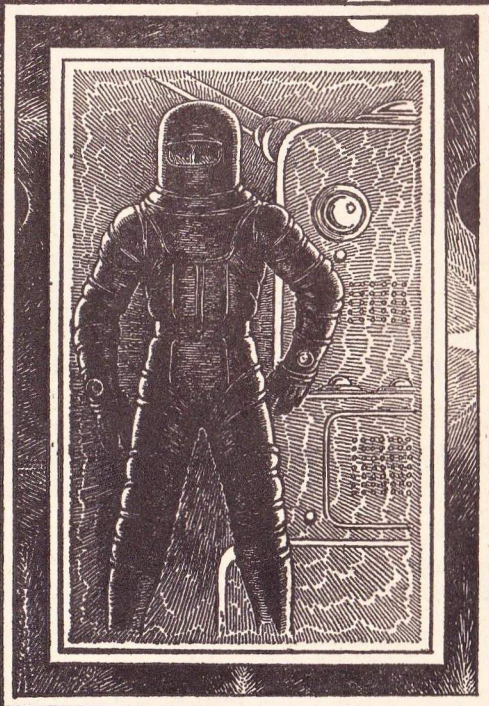
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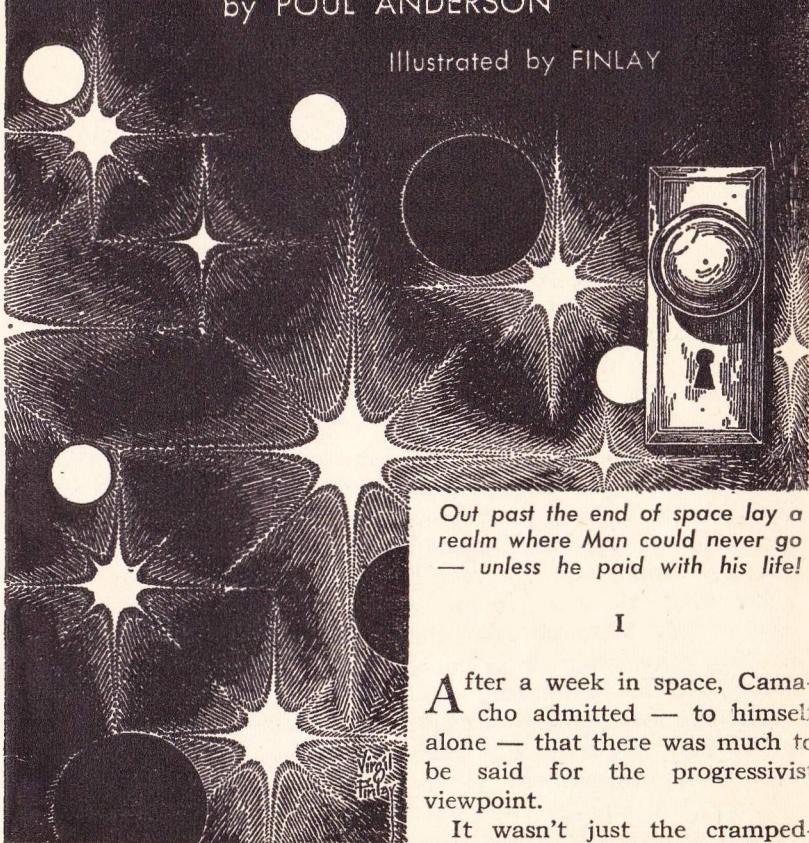
DOOR TO



ANYWHERE

by POUL ANDERSON

Illustrated by FINLAY



*Out past the end of space lay a
realm where Man could never go
— unless he paid with his life!*

I

After a week in space, Camacho admitted — to himself alone — that there was much to be said for the progressivist viewpoint.

It wasn't just the cramped-ness, the unprivacy, the endless irritations of low-weight life, noises and stinks and a sub-

liminal vibration that finally wove itself into his dreams. It wasn't even the chance of dying, if the sun should flare too fast and too furiously, or if any one of a hundred systems within the ship failed or if his middle-aged body fooled the medical examiners by reacting fatally to conditions so unnatural. These things counted. But worse was the time he was spilling between planets.

And he could have made the trip in half an hour, on foot!

Time he thought, was the only real wealth a man had, and it should only have to be spent on what was beyond price. Like a family — he was astonished at how very much he missed Alice and the kids. Like swimming, and mountain climbing, and gardening, and eating good food and being with good friends. Like work, if you enjoyed your work and believed you were accomplishing something important. What kind of mess would he return to? Without him, the African scholarship bill would likely die in committee, and meanwhile the Scandinavian bloc would likely push through their abominable amendment to the whaling law, and — and he'd need a year merely to patch his fences at home, with an election coming up.

At that, he thought wryly, he

was fortunate. Most people who went to Mars had to go in underpowered hulks that orbited more than half the distance. But he claimed an urgent, investigative mission, and so he rated the newest in nuclear-engined Space Corps vessels. Acceleration all the way; not much, but enough to get him there in a month at the present planetary configuration, and never mind the cost to the taxpayer.

The three crewmen were polite and rather distant. Weninger made some effort to befriend him. Looking out the main port, to blackness crowded with stars, the lieutenant said, "Luffly, eh? I don't think Earth has a sight to compare."

"Frankly, I'd say the night sky in the High Sierra is as beautiful," Camacho replied. "And there you've also got a landscape."

"Well, Senator, you haff yourself to blame," Weninger said with ponderous Teutonic joviality. "You fight so hard to keep them from building a jumpgate on Earth. Maybe you change your mind now, eh?"

"I think not," Camacho said. "Especially after what happened at Lacus Solis."

Weninger didn't notice the pain in the words. "For me, good," he said. "They make that gate,

and I am out of a job. But I do sometimes think, when I get my tax bill, maybe I should be. Spaceships don't come so cheap, haw!"

Camacho shrugged. Thereafter Weninger stayed formal.

Captain Potasz was even a bit hostile. Once at dinner, if you could use that word for gulping reconstituted rations off a lap tray, he said, "It is not my business to ask you why you are bound for Mars, Senator. My assignment is simply to get you there and bring you home again when you are finished. But I must confess I am puzzled at the reason for this junket."

"I head the Committee on Space and Astronautics of the World Council," Comacho reminded him. "We have to investigate the disaster, so our colleagues can know if any new legislation is required."

"But there are competent scientists at Lacus Solis. No, more than competent. Brilliant. They can inform you, once they themselves have solved the problem. Or, if you feel a man must come from Earth, why not another scientist?"

"Instead of a wretched politician, you mean?" Camacho attempted a smile. "Well, I did take a degree in engineering, though admittedly that was long ago. But you see, I don't doubt

their brilliance at the research station. They certainly don't need more technical brains. However, to be quite honest, the accident makes me doubt a little their competence. Which is not all the same thing as brilliance."

"So you think you can find their answer for them?"

"Lord, no. But I do want to learn the situation for myself, at first hand. What the present trouble has done is make me take a much overdue, ah, junket. Expert testimony is okay in its place, but it is abstract and it is biased. Scientists are human too."

Potasz regarded his passenger for a while before saying, "The man who . . . vanished . . . Ian Birkie — I heard he was a relative of yours."

All right, Camacho thought, let's get it over with. "My brother-in-law," he said, measuring out the words. "My wife and I were fond of him. I won't ask you to believe there's nothing personal in this trip. Politicians are also human. But I'm sure his teammates care about him. So will you believe I'm traveling not in my own, but in the public interest?"

"Of course." Potasz couldn't well say otherwise. Camacho wondered if he meant it. The captain seemed to be a strong

progressivist, entirely willing to find other work after an Earth-side jumpgate was built. And Ramon Camacho, senior senator from California, second-in-chief of American delegates to the World Council, was usually labeled a reactionary.

The third crewman held still more aloof. He was Chinese, so perhaps his grandfather had bequeathed him a grudge from the war. Camacho — a stocky, grizzled man with a face that looked heavy when it wasn't in motion — thus stayed mostly with the books on which he had spent considerable of his mass allowance. He had his thoughts, too, but they were worse company.

Staring out at the dim mysterious blurs of the far galaxies: Ian, where yonder are you? What became of you?

He hadn't accepted the boy just for Alice's sake. Ian Birkie had come to be like a younger brother of his own. Often and often they'd drunk beer together, and laughed and talked till the windows of the Camacho house grew pale with morning. Then, rather than go to bed, they were likely as not to organize a picnic for the whole family, a quick flit out of San Francisco to some place like Point Lobos or Kings Canyon or a bit further to Baja California

for the surf and sun and loneliness. You couldn't get a better companion on a mountaineering expedition, either, except that Ian was too reckless — never on the rope, no, but when he was only risking his own neck he'd do things — climb, leap — to make the rest of the party blanch and shout back to them in the sheer delight of being alive.

He was red-hot for installing a gate on Earth, of course; or on the Moon as a bare-bones compromise. He'd argue about that at the drop of a hat, which he usually dropped himself. But there was no ill temper about it . . . unlike some partisans you could name . . . and he'd soon frisk off to something else. Anything else; he was in love with the whole universe.

So he got his Ph.D. and went to Mars. And went to the stars. And now old Cautious Camacho was trudging after him.

He's dead, the senator must keep telling himself. If nothing else, he couldn't have lived many hours in a spacesuit. He's dead, and we have to accept this, and what I want to do for a memorial to him is keep that thing yonder from eating any more young men.

Fine speech, he gibed. I'd also like for Alice and me to know how he died. Quickly, cleanly,

in the flood of a discoverer's joy? If I could prove that, the nightmare would go away. We'd stop thinking of him suffocated minute by minute, alone in blackness beyond all galaxies. But even knowing for sure that he choked, yes, would help. This utter blank at the end, it's more of a wall between him and us than death.

Camacho realized he was groping in his spacefarer's coverall for a cigar. He barked a little laugh at himself. No cigars in interplanetary space, friend. Precious few on Mars, and people there aren't likely to offer you any.

Damnation, he thought, I am going in the public interest! Lawson is withholding information. I could smell that in his radio reports. "Conclusions must await further data." Ha! Why isn't he giving us the full breakdown on what he does possess? I'm going to have to get rather nasty with his team, I'm afraid. Well, I've had experience in that line.

II

Mars grew to a pockmarked, ruddy vastness, until Camacho could see dust storms scudding across hundreds of kilometers. Otherwise the horizon and surface markings show-

ed sharp as on Luna, through an unbreathable wisp of atmosphere. Then he was strapped in for the approach to Phobos, and a weight which had been annoyingly small became intolerably great.

That ended also. His ears were slow to stop ringing after the rocket thunder. He could have rested a while on the little moon. But a ferry was waiting, and he elected to proceed at once. The descent to Mars was no fun either.

He couldn't avoid the red carpet in Port Nikolai. They were used to generals and Nobel Prize winners, but a politician was still a rarity here; and this particular politician was largely responsible for the continued existence of Mars' only town.

He must admit his tour was interesting. In fact, he was more impressed than he had expected. Five thousand souls hardly made a village on Earth. But when they must live sealed off from an environment which it took every technical skill that man owned to keep at bay, Port Nikolai became an achievement to dwarf the Pyramids.

Afterward, when they were alone in his office, Commandant Nahabedian said: "We couldn't have done this much without the jumpgates. Mars is too poor in everything we need, and the idea

of hauling raw materials from Earth is a joke."

Camacho gazed out a port; the office was in an above-ground turret. Rock and red dust stretched away until the view was cut off by a sheer crater wall. The sky was almost black, the shrunken sun gave him no sense of being warm. Those native plants which colored Mare Erythraeum stood far apart from each other, stark and strange. "Yes, I knew already," he said. "Now, I'm beginning to feel the fact."

Nahabedian pointed. "The wood in your chair came from a planet seven thousand light-years off," he said. "I was there myself. It was a forest such as I had never imagined. And silent — silent. No one has yet found animal life on that world. Nor do they know how ecology is possible without."

"Well, it's not like Earth," said Camacho sharply. "Is it?"

"No. Not habitable. Methane, no oxygen. But you understand we will not take much longer to find a planet we can colonize. Already we know of three, though they are inhabited."

"Uh-huh. I'm proud nobody has suggested conquest."

"I would not advise trying, in the case of Yrnay, at least," Nahabedian said in a dry tone. "However little we know yet

about their civilization, we know it isn't one we dare fight."

"You'll find an unclaimed paradise," Camacho agreed. "After a few years of test and experiment, you'll certify it as safe for humans. Then all hell will break loose."

"You said that," Nahabedian murmured.

"Let's be frank," Camacho said. "I'm lucky. I can afford to visit the few places on our poor, overcrowded Earth where a little nature remains. Not many can. The latest survey reported that two and a half billion people would like to emigrate. The number gets bigger every time."

"Senator," Nahabedian asked, "do you seriously believe they can all be transported to Mars by ship?"

"A reasonable proportion can, if the rest are willing to pay the cost. You needn't tell me it'll be the largest bill the human race ever footed."

"And the most unnecessary. One gate on Earth, only one, and men could step directly to paradise."

"Well, now, not quite. There's a little matter of intermediate-energy bases."

"We could require a thousand, and they'd still cost less than one spaceship!"

"I suppose you think my at-

titude is unreasonable?" Camacho asked gently.

Nahabedian looked embarrassed and cleared his throat. "Um . . . let us say, Senator, that like most people here, I hope you can be persuaded that the gates are perfectly safe."

"I hope so too." Camacho's gaze went back to the grimness outside. His thoughts went back to Ian. "I doubt it, though."

III

The other human installation on Mars was the research station at Lacus Solis.

A quarter of the globe's circumference was considered a sufficient precautionary distance from Port Nikolai. In addition, an interlock circuit prevented any gate from operating between the two sites while any at the station were open on some different point of space. Otherwise personnel traveled freely everywhere on the Martian surface. (Not often, to be sure. With an entire cosmos available, few scientists had any further interest in this miserable excuse for a planet.)

Escorted by Nahabedian, Camacho walked down multiple ramps to the jump room. There was merely one such, for local transportation. The big gates, through which the extra-Solar ex-

peditions went, and through which the resources of a dozen worlds came back, were operated in separate housings, or outside on the Mare if need be.

By now Camacho was used to the gravity and rather enjoyed it. Weight was high enough to keep mass under control, low enough to restore a nearly forgotten springiness to his stride. He liked the metal and plastic cleanness of his surroundings, too, the intricate, purring machines, the tang and faint smell of oil in the air. Such things had raped Earth; but in this primordial desolation, they stood for life.

He didn't forget to supply everyone who passed with a big grin and a hearty greeting. Some responded, some did not. Nahabedian, more relaxed in his presence after their walk, joked: "Always campaigning, Senator? We have few Californians here."

"But plenty of Americans," Camacho said, unruffled. "I could win the next state election and still fail to get reappointed to the Council if I became unpopular in the United States as a whole."

"Does that matter?"

"Yes. They do things differently in your country. But with us, these days, a senator as such is mostly ornamental. My real job is to help represent the

American people before the world."

"I did not think the majority was behind you on the jumpgate issue. Do not Americans pride themselves on being a race of pioneers?"

"So far," Camacho said, "I've done okay by them in other respects. Or so I hope. If that keeps them forgiving me for this one position I take, maybe in time I can educate them."

Nahabedian pinched off a retort. Camacho thought: Well, sorry, I was tactless there. Didn't mean to sound arrogant. After all, I couldn't hold out alone. I've got a strong minority on my side . . . yet.

But before he had assembled words, they were at the transport room.

Camacho had often seen pictures of it, still and live. The reality was somewhat less glamorous: scarred floor, coffeepot on a hotplate, a bored technician reading a dog-eared, old copy of *Fanny Hill*. Most of the gear was hidden by panels intricately metered and control-studded. But the gate was in view. It didn't look like much either, a plain steel door. Nevertheless, a tingle went down Camacho's nerves, and his heart contracted.

"Your first time, Senator?"

Camacho nodded. "After all those years of policy-making, my first personal experience. Feels odd."

He didn't forget to introduce himself to the technician. The man's response was cool, soon ended in order to activate the jump. That took a bare few seconds. The controls were already set for Lacus Solis. A whisper of power ran through sudden stillness; meter needles moved and steadied; the technician gestured.

"After you, sir," Nahabedian offered, a bit sarcastically.

The door was handleless, swinging in response to arm signals after the monitor circuits verified safe conditions at the other end. Camacho looked through the frame, into a room almost identical with this. He stepped across the threshold. There was no sensation. Nahabedian followed.

The commandant had radioed ahead, and two men waited to receive their visitor. Thomas Lawson, the station director, was tall, sandy-blond and intense. His transport operations manager, an Iranian, belied the magnificent name of Pezeshkpour Vahdati by being short, fat and sleepy-looking. Or did he? Camacho noted shrewdness in those brown eyes.

"Well, gentlemen, I fear I

must return to my own work," said Nahabedian after due ceremony. "I look forward to seeing you again, Senator, and of course you must feel free to call upon me for any help I can give," etc., etc. He bowed himself back out the gate. Its door closed. The power faded away.

"Is this all your baggage?" Lawson asked.

Camacho hefted the small suitcase he carried. "Yes. I don't plan to stay long. And I don't want any special treatment."

"Except what is due in your official capacity," Vahdati murmured, taking the bag.

"*Touche!*" Camacho grinned. (In his private self, he was remembering this was where Ian had come to die.) "I've never been called a nuisance and a busybody in politer terms."

"You have a legal right to be here, Senator," Lawson said. A block of helium might as well have spoken.

Camacho donned easiness, put thumbs in pockets, rocked back a little on his heels and drawled, "We'd better speak plain while we still have privacy. Let's count the strikes against me far as you're concerned. I'm a prominent obstacle in the way of expanding jumpgate operations — directly, because I've used every legislative trick in the book to head off establishment of gates

on Earth or Luna; indirectly, because this requires going to Mars first by ship, which uses up time and funds you think could be better spent. Furthermore, I arrive here after the worst accident you've had and interfere with your probing for the cause. I'll demand information you want to keep confidential till you can integrate it into a sensible picture; and I'll demand it as a layman who has to have his explanations in kindergarten language. Finally, because the victim was kin of mine, it looks as if I'm doing this out of personal spite. Anything else?"

Lawson opened his mouth, snapped the lips shut again and shook his head furiously. Vahdati said, "Pray proceed."

"That doesn't add up to three strikes," Camacho said. "Only two strikes and one ball. I don't doubt you also grieve for Ian Birkie. You could scarcely help that. Nor do I doubt he did — whatever he did — absolutely voluntarily. This is by and large a hostile universe. Men are bound to die in it."

"They die oftener in space-ships than beyond the gates," Lawson got out.

"I know," Camacho said soberly. "Maybe you can make me change my mind. But don't you see my point? Earth is as yet

the only planet where the human race can survive. We must not risk it. So . . . here, in your experimental program, something that you don't understand. It wrecked a gate and killed a man. Are you sure you didn't get off easy?"

"Senator," Lawson said, half raising one fist, "we are neither fools nor fanatics. We've read your speeches. You needn't repeat them. Do you think we don't want adequate precautions taken for a gate on Earth? Do you think they were not adequate at this station? If so, I'd like to remind you that the casualties were one man, one door and a line of relays. Nothing else was touched. Port Nikolai never felt a thing — couldn't have. We're reasonable men. Are you?"

"Please, Thomas, please!" Vahdati interjected. "A fight so soon? Let our visitor get settled first at a minimum. Come, Senator, I will show you to your quarters and then show you around if you wish." He took Camacho's arm. "You really are welcome," he beamed. "Research has been suspended until we solve our puzzle. The scientists have gone back to fume at Port Nikolai. We have just a skeleton staff among us and grow tired of each other's company."

Camacho laughed. "Whenever you get bored with your present

job, Dr. Vahdati," he said, "I'll find you a diplomatic post."

IV

Though much smaller than the town, the station was less austere.

Some of mankind's finest brains came hither, for months or years on end, to do mankind's most important and exciting work. The bodies were accordingly housed in spacious, private rooms, lavishly fed, provided gymnasium, library and theater — both 'cast and live amateur — as well as laboratories. The basic layout remained the same, a unified structure largely underground. But there were no yeast or 'ponics plants, no factory chambers, none of the bustle and crowding and presence of ordinary workmen that gave the port a touch of Earthliness. At the moment there were not even many specialists. Camacho thought the quiet a little oppressive.

"Would you like to visit an extra-Solar planet?" Vahdati asked while guiding him about.

"I don't know if it's revelant to my mission," Camacho hesitated. His pulse beat faster. "But hell, yes! My kids'd never forgive me if I didn't."

"Glamour is hard to resist," said the Iranian.

Camacho grimaced. "How well I know."

Arrangements having been made, they took a downramp to a tunnel. Bare, coldly lit, echoing to their feet, it zigzagged for a kilometer out of town. "Devil-trap effect," Vahdati said. "In case of radiation." He pointed to a huge lead-sheathed door. "We have one like that every hundred meters. They are shut, from a central control turret, at the first sign of trouble. In addition, the tunnels are mined and can be collapsed on a second's notice."

"In spite of what Dr. Lawson thinks," Camacho replied, "I never said you weren't suitably careful . . . here." He passed a branch tunnel. "That go to a different jumpgate?"

"Yes. We have twenty by now, at varying distances from the main structure. Nevertheless, we need more, especially for research projects. Most of them are constantly occupied in the rather drab chore of locating way stations."

"You have nineteen," Camacho said with abrupt harshness.

Vahdati started. "Oh. Yes. One was destroyed. I am sorry."

Camacho tried hard for calm. "I haven't asked you yet. Have you any idea what happened?"

"Some hypothesis, nothing else. We are trying to organize an investigation, but it is dif-

ficult when we cannot even agree what we should look for. Ah, pardon me, how much do you know about the theory of the jumpgates?"

Camacho needed time to recover from his vision of Ian. His eyes still stung. "If you can endure it," he said, "suppose I give you my layman's version. That way you'll know the extent of my ignorance."

"By all means." Vahdati's face was blank and blank.

Camacho soothed himself with the lecture he had often given to constituents and fellow politicians. "Back around the middle of the last century," he said, "Hoyle and others found reasons to postulate that matter was continuously created. So-and-so many hydrogen atoms per cubic light-year appeared out of nowhere, just fast enough to keep the universe in a steady state. That is, the new matter came along at exactly the same rate as the most distant galaxies were reaching the speed of light and vanishing from all possible human ken. Nothing magical about that; the correlation could be described in terms of field theory. You might say there is a kind of cosmic force-field which keeps income and outgo balanced.

"Well, for a while it looked as if the facts wouldn't go along

with this nice concept. By counting remote galaxies, astronomers showed that the universe must have started small and exploded outward. No steady state — though evidently in the far future it will start collapsing inward again. At the same time, Hoyle's ideas were attractive; they did explain several things that were hard to explain otherwise.

"So he himself suggested that what we observe might be only a part of the whole. That is, his new field theory allowed for big volumes of space where the rate of matter creation varied from the norm. Such a volume would necessarily go into oscillations, expansion-contraction, of the type that we note. It would amount to the whole detectable universe, as far as we were concerned. But outside it there'd be other, similar regions, other entire universes of galaxies. The rate of matter creation would average out for the whole infinite system."

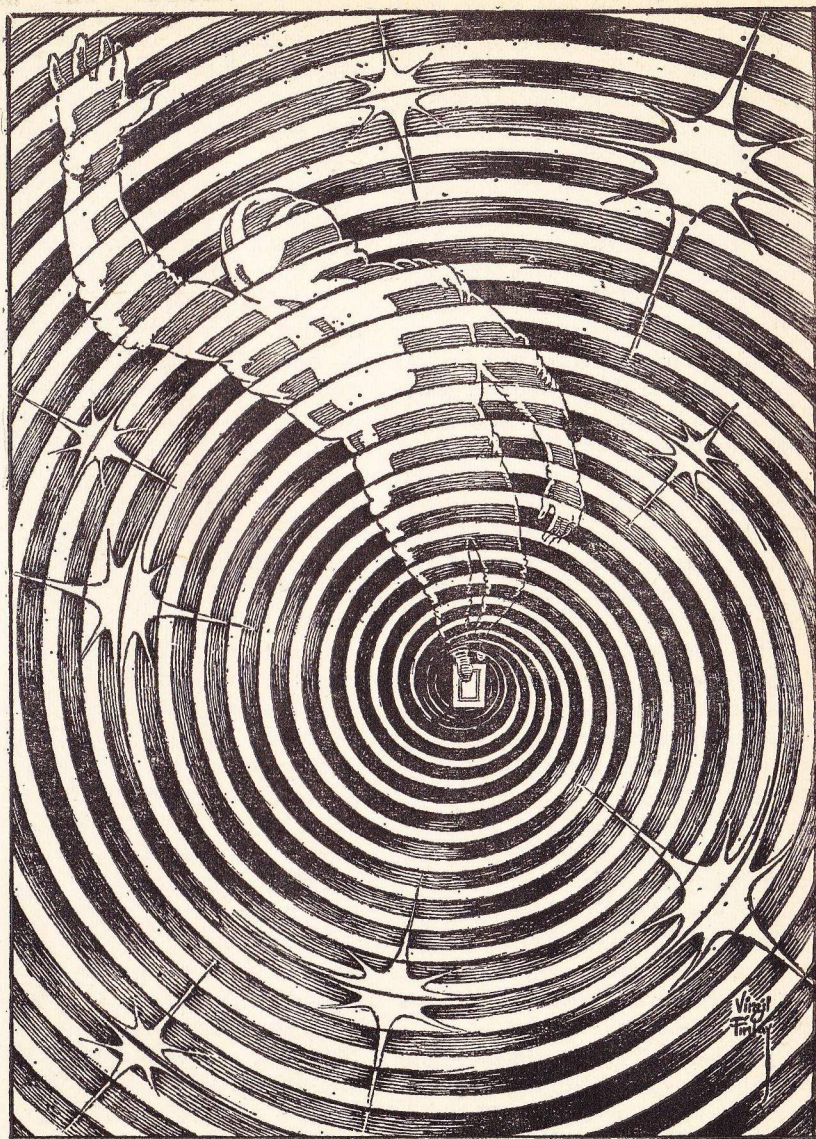
"Excellent," Vahdati said. "As an academic point, I should add that the dimensionless constants of physics in any given universe depend on the total mass. Hence the universes are not precisely similar. But do proceed, Senator."

"Might as well," Camacho said. "Hoyle's suggestions turned out

to fit in with certain results of nuclear research. The whole theory was developed in detail by Bishop. He got one particularly interesting result. The existence of the matter-creation field is equivalent to the unity of space. By modifying some parameters of it, which can be done with nuclear binding energies, you can in effect open a way directly from anywhere to anywhere. You establish a plane of contiguity, a jumpgate and walk on through. There is no limit to the distance you can go.

"Except for the energy differential, of course. Suppose, for example, you wanted to go from Earth to Mars. Now Earth travels around the sun at almost thirty kilometers per second, Mars at twenty-four. If you simply opened a gate between them, you'd have the problem of stepping out onto a landscape traveling past you at six K.P.S. without breaking your neck. Not to mention differences in rotation speed or in planetary and solar gravitational potential.

"You could wait until the exact moment came when the motions of the two planets were in such directions that they cancelled out all these various energy differences. Then there'd be no problem. But if you don't want to be restricted to that very narrow time slot, you can take



the long way around. Maybe, at this instant, a planet of Tau Ceti is just a wee bit different in energy from Earth; and a planet of Epsilon Indi a wee bit more; and so on and so on, until finally you reach Mars.

"In general, then, to get from one world to another, you have to pick a route. This route is never the same twice running. And naturally it has to go through places where men can walk. The surface of Jupiter wouldn't do! So to explore space via the jumpgate is nowhere as simple as it looks. First you have to collect data on way stations, by instruments and manned expeditions. Next you have to put those figures through a computer, continuously. Often you have to wait before making a certain trip, because there simply aren't any useable intermediate points at the moment. But we are discovering more and more of them all the time. It gets easier as we go along."

Camacho paused before finishing, deliberately: "At least, within this galaxy it does."

"Very good!" Vahdati applauded. "I do not know whether to admire most your grasp of the subject or your sheer laryngeal capacity."

"Thanks," Camacho said. "They're both part of a politician's stock in trade." Noting a

slightly surprised look, he added in some irritation: "Yes, also a knowledge of basic facts. My job is to deal with people. That means I'd damn well better understand what people are up to."

They reached their destination. A ramp curved toward the Martian surface. At its foot stood an intervisi and a locker.

Vahdati extracted a couple of airsuits. "Standard precaution," he said. "If perchance something goes wrong, these will keep us alive for the time necessary to escape. Going onto a completely new world, or one where no booth has been constructed yet, we would use regular spacesuits. But those are far more cumbersome and must be designed to individual specifications."

Camacho struggled into his outfit with much help from the other. The result was romantic — boots, gauntlets, and power-pack belt above a padded cover-all with interwoven thermostatic coils. The helmet bore self-darkening goggles; a chin pad could be slipped over nose and mouth to become a mask supplying several minute's worth of oxygen. With a shyness that surprised himself, Camacho handed over the camera he had doffed with his civilian clothes. "Uh, would you mind taking my picture? I promise you it's not for

campaign purposes. Only for my children."

"Vahdati chuckled and obliged. "We will take this along and get you against exotic back-grounds, too," he promised. Turning to the intervisi, he switched in an Oriental face. "Central Control from Gate Four," he said. "Hullo, Nagamura. We are ready. Have you our program?"

"Yes, sir. First a look at Orion, then you proceed to Yrnay. We have computed you will require five intermediate stops. Here is your program." The 'visi pinged and extruded a printout which Vahdati took. "You start in four minutes."

"Check." The Iranian reached back into the locker and got a pair of laserifles. "We will have no use whatsoever for these silly things," he apologized, "but since we will be on planets known to have large animals, regulations insist."

"Send me some testimony when I get back, and I'll see if the rules can't be changed," Camacho offered. "Meanwhile — Lord, don't we look dashing?"

"That is the trouble," Vahdati said with unexpected bitterness. "Headlong dashes to what could be death . . . Pardon me. This way, please."

Continuing upramp, Camacho wondered what had been meant. Ian? Probably. Yet this fellow

sure wanted a gate on Earth —

They entered the booth.

It jutted from the surface like a small monolith. Of reinforced vitrilene, it was practically invisible, so that you seemed to stand houseless in the middle of a gaunt and terrible land. Stony, sandy, even less vegetated than Mare Erythraeum, Lacus Solis reached to a horizon of weathered crags. Overhead arched the night sky of Mars, heartlessly brilliant constellations, Jupiter and Saturn as lamps, the swift discs of two nearby relay satellites. The main station was a hump of darkness with goblin eyes. In the opposite direction, a rocketship kept in case of emergency made a lean tower.

At hand was the hearthfire glow of an instrument console. And the gate: a framed metal slab occupying the center of the booth. Stillness pressed inward until Camacho could hear the blood knock in his ears. He felt, too, a quiver at the base of his throat and a trickle of sweat from his armpits, and he drank the scent of his own body.

Vahdati's parched tone was a relief: "I am sure you know how this works, but I am required by law to brief you. We will not be making a simple point-to-point transition, as between here and Port Nikolai.

Instead, several different planes must be made contiguous, one after the next. Each booth where we are going has its own gate, is in fact very much like the one we are now in. However, none of them possess an ordinary exit. They are shelters against lethal environments."

He busied himself as he talked, sliding a curved, transparent shield across the doorframe and locking it in position. "Of course," he said, "our first exit will be directly onto interstellar space. We don't want to lose air. This is merely an, ah, appetizer." He finished. A bell sounded. "Now! Come around in front — so."

Meter needles stirred and steadied. Vahdati waved open the door. Camacho gasped.

V

The frame enclosed blackness, but in that dark swirled vast, inchoate thunderclouds. They shone in all hues of the rainbow and in the richer, purer colors of ultraviolet fluorescence — fiery, golden, verdant, cerulean. Had his goggles not shifted optical density at once, he might have been blinded, for he could not look away.

Slowly, through his awe, he made out separate features. Those luminous curdles, they must be suns in the process of getting

born . . . if he could step through the gate, how many light-years from home would he be? . . . this was the great nebula in Orion . . . was it only his bloodbeat he heard, or the querning of the galaxy?

Vahdati plucked the camera from his fingers and took a few shots. "If any watchers are out yonder," the Iranian remarked, "they see an open door hanging in space, with Mars and ourselves inside." His words hardly registered. He began to shut the panel.

"Don't" Camacho begged.

"I must," Vahdati said. "We are only allowed sixty seconds without special radiation protection."

Again bare steel confronted Camacho. He lifted his goggles and dabbed at his eyes.

"I know," Vahdati said softly. He busied himself removing the airshield.

With considerate briskness: "Now we travel. In one minute I am to open the gate on Way Station 348. We have run out of names, but it is a satellite of the giant planet Osiris, 61 Cygni C." He slung rifle and camera on his shoulders. "The two gates, this one and the one there, will be physically aligned, snugged against each other with their doors, swinging in opposite directions, as long as connection is

maintained. Now, going through involves a slight shock. Hold my arms thus and so, I will brace you."

Camacho cast a last wild glance around Mars. Power hummed again and died again. Vahdati opened the door. "Through!"

They crossed the double threshold.

The change in kinetic and potential energy, and the yank of gravity somewhat higher than Earth's, made Camacho stumble. He would have fallen, but for the Iranian's support. After a moment, he was able to stand and stare.

At his back, now, was framed Lacus Solis. Its harshness looked homelike. Around him reached a plateau sheathed in ice, mountains climbing toward a dusky purple sky and two wan red suns. The light was blood color. Behind a veil of scudding snow loomed the primary planet, a swollen orange shield banded in umber and green, speckled with storms that could have swallowed Earth whole. Wind-shriek struck through the booth, and a wave of cold came from the unseen walls to lave his face.

Vahdati glanced at his watch and at the printout he carried. "The program allows us two hundred seconds here," he said. "Get your pictures fast."

Numbly, Camacho obeyed. He hoped they would turn out. Vahdati tugged his arm, leading him around to the front of the joined gates. Looking through them from this side, Camacho did not see Mars, only the nameless world on which he stood, as if the frames were empty — which, in a sense, they were. Vahdati closed the doors and touched a switch. One gate vanished; frame, panel, controls, and all, it simply wasn't in this booth any longer. Vahdati made adjustments and operated the remaining unit.

"Through!"

The impact of energy transfer was a little greater, the weight that followed a little less.

Now it was the view of Osiris which hung behind the men. Outside, mist swirled blue-gray, condensed on the vitrilene and poured down so that Camacho could barely glimpse trees beyond. They had no leaves, but ruddy fringes along the boughs were always in motion though there seemed to be no breeze. A sound akin to flutes trilled faintly in Camacho's hearing.

"Where are we?" he whispered.

"I don't know," Vahdati said. "Who can remember each of several thousand stops? But the gate settings I made are such that

I know we have gone about nine hundred light-years from Sol in the direction of Cassiopeia."

"What's . . . the local . . . condition?"

"That is posted in every booth. Here, see. Orbital and planetographical data . . . atmosphere, well, has oxygen, but too much carbon dioxide for us. We are to stay three minutes."

The next planet had another ember for a sun. Red dwarf stars are by far the commonest type. Curious metallic growths swayed on the strand of a night-black sea, under a greenish heaven. This globe had been christened; Vahdati knew something about it and spent the half hour's wait talking. For that matter, Camacho had read news reports. A biology so alien to Earth's or Mars' was irresistible research bait. Expeditions had taken spaceships through the big gate at Port Nikolai and made maps from orbit. In a hundred years, ground-based surveys might fill in a fair number of details. It would take longer to answer the scientific questions.

The fourth world was closer to home, in fact only thirty-odd light-years away, the innermost planet of Groombridge 1830. As such, however, it moved usefully fast in orbit. The landscape was airless, lifeless and beautiful.

Camacho saw little at the fifth

stop. The sun was type F5, a savage ultraviolet emitter, and the walls must be screened. Through a televiewer, he spied leaping things that glittered in the dazzle.

Then they reached Yrnay. Here no booth existed: rather, an elaborate house. They must cycle through decontamination; it was not yet absolutely certain that no micro-organism from one planet could do harm on the other. But they walked out into soft, scented air, among green-fronded plants and were welcomed by the personnel of the permanent scientific base.

Camacho was more interested in what followed — when, as a VIP, he got a full day's visit to the nearest autochthonous community. That was heartbreakingly short, of course. He carried away little but a kaleidoscope of the utterly strange and utterly lovely and a resolve to learn everything he could about this place. Which wouldn't be much, really, not when men had just begun talking to a civilization as old as their own, or older, sundred by three or four billion years of separate evolution. Come back in a millennium, he was told, and maybe we'll understand.

But when he had to return to Mars, and Vahdati asked quietly, "Do you see now why

we are anxious to expand our program?" Camacho could do no more than nod.

VI

Dining in the messhall, the senator spent time at affability toward the staff which he would rather have devoted to studying the reports which had been supplied him. They weren't easy reading. Not only were they in pure technicalese, but no effort had yet been made to put the facts down in logical sequence. He wondered if that was deliberate; the news of his coming had arrived long before he did.

As a result, he didn't finish till late on the second day. Then he called Lawson. "Could we talk privately tomorrow?" he asked. "Maybe with Dr. Vahdati present, but no others. You know how impossible it is to argue efficiently in a committee."

"Come right now if you will," the director said rather sourly. "I am free. I won't be tomorrow. We're busy setting up a new experiment to try and find what caused the accident."

Camacho hesitated. I suspect they'd sooner I don't get a chance to organize my thoughts, he reflected. Okay, I'll show 'em. "I'll be right over to your office. Thanks."

The room was reminiscent of Nahabedian's also in a turret with a full view of the landscape. Off in the distance, under gnawed rockspires, machinery and instruments surrounded the splinters of what had been a gatebooth — the one that Ian went through. The sun was on the horizon, small and cold, and shadows reached across the desert like fingers.

Camacho and Vahdati took chairs. Lawson sat behind his desk, drumming nervously on its top. The senator longed for a cigar, but had to settle for the pack of Gaulois Bleu which was all he had been able to get in Port Nikolai. Vahdati accepted his offer of one; Lawson refused.

"Well, sir, have you reached any conclusions?" the Iranian asked after a silence. He smiled lopsidedly. "If so, you are a better man than I."

Cacacho drew in a puff of acrid smoke and trickled it out his nostrils before replying. "I'm not sure. Frankly, I never expected any nice, clean-cut answer. Life doesn't work that way. I'll probably just collect a mess of impressions."

"And on that basis you will legislate?" Lawson exploded.

Camacho simply watched him till he swallowed his anger and mumbled, "Sorry. No offense. But I don't understand how you

can justify regulating scientific affairs on unscientific principles."

"Science isn't a god, you know," Camacho said mildly. "Not even a concrete object. It's something people do. So it's subject to the same considerations of morality, the public weal, I might go so far as to say good taste, as any other human activity. And applying those principles has to be done by ear. No other sane way. Every time that government fell into the hands of dedicated intellectuals, the result was disaster. Look at the French or Russian Revolutions."

"All right." Lawson hunched forward. "But doesn't the general welfare call for a continued expansion of scientific knowledge and the full use of what knowledge we have already gained?"

"Up to a point. It might, for instance, be an interesting experiment to see if we could blow up Earth. The results might tell us a great deal. However, I'd have to veto any such proposal."

"Please don't erect straw men. Which that old stellar-interior argument is!"

"**N**ot exactly," Camacho rolled his cigarette between his fingers and scowled at the glowing end. "We're a long ways from having detected every faint star in this neighborhood, let

alone throughout the cosmos. Even for those stars we can see, we don't know within many million kilometers where they lie, until we've actually visited them. So a gate *could* be opened on the center of a star. No matter how small a star, that'd be the end of the planet where the gate stood. We can't risk Earth! We can't risk Luna either. Think what tideless oceans would become. Mars is expendable."

"But nobody wants to take that chance! A gate on Earth or Luna would lead only to Mars via suitable way stations. From here, travelers would make a transfer. We could time things, if you insist, so that no Martian gate is open when the terrestrial one is."

"We could go further than that to compromise with you," Vahdati added. "One or more gates, actually on Earth, would be a tremendous convenience. But they are not absolutely necessary. Why will you not let any gate, anywhere in the universe, be opened on Earth?"

"The hazard's still too great," Camacho answered. "How about biological contamination? We haven't yet met an extra-Solar disease we couldn't lick, but there's always a first time, and it might have a long incubation. At present, the spaceship voyage amounts to a quarantine period."

He shrugged. "I could go on naming possible horrors, but you say you've read my speeches. The point right now is, something happened to Ian Birkie which you can't explain. Could it be some hitherto unsuspected phenomenon involving the gates themselves?"

"No," said Lawson flatly. "Haven't we enough experience to be sure of that much? It was something unique, occurring near the edge of the universe."

"Edge . . . does that phrase mean anything? I thought every galaxy was at the center of the universe, as far as itself was concerned."

Lawson sighed theatrically. "You are good at explaining," he said to Vahdati. "Suppose you try."

"Well — the Iranian stubbed out his cigarette. "Probably you already know this, Senator. If so, forgive me. But the complementarity principle is difficult to see. In effect, what it says is that all our descriptions of reality are necessarily limited and incomplete. Two different pictures may be equally valid, each emphasizing some particular aspect. The obvious case is in sub-nuclear physics. Does matter consist of particles or of waves? That question is empty. The proper question is: In any given situation, does the wave or the

particle description work best?"

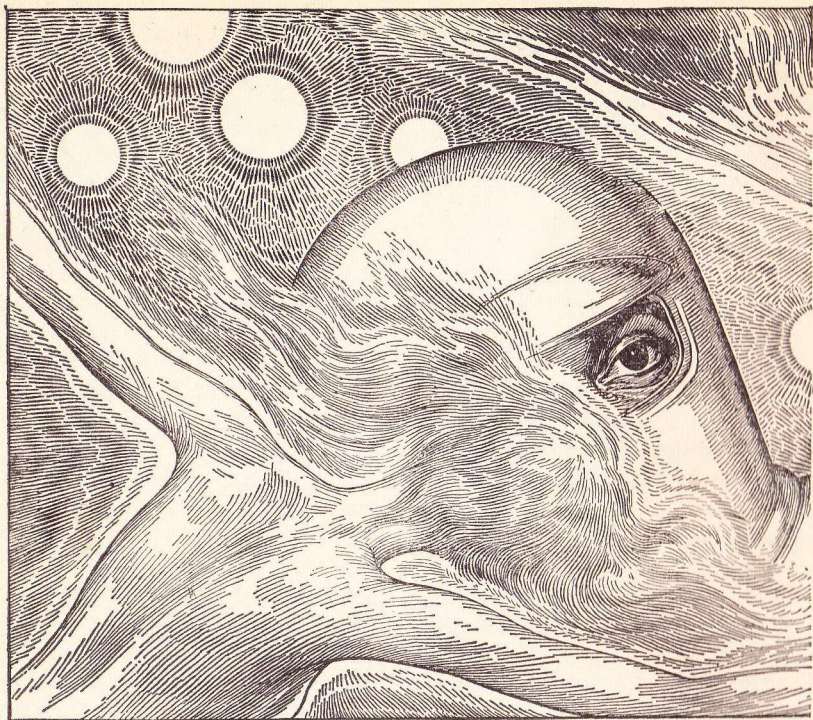
"So far you're on familiar ground," Camacho said. "But go on."

"The same principle applies to the astronomical universe," Vahdati said. "On one hand, we can employ the Einsteinian image of a cosmos finite but unbounded, the galaxies contained in a curved space which is expanding.

"On the other hand, for many purposes we do better to think of an infinite, flat Euclidean space, pervaded by the matter-creation field. In this picture, the galaxies are simply moving away from each other. The faster they go — as seen from any arbitrary point — the more they are contracted and the more of them can be packed into a unit volume. Thus each galaxy observes itself as being in the middle of a universe whose oldest, outermost members are receding with the speed of light. The radius of that universe is equal to c times its age, approximately twenty billion years.

"This second picture is the one we must use in trying to learn what became of Ian."

He stopped. The sun went below the horizon. In this tenuous atmosphere there was no twilight. The stars leaped forth with pyrotechnic suddenness, crowding the dark in their win-



try myriads. Camacho looked out toward Andromeda, and beyond and beyond. *To the rim of creation —*

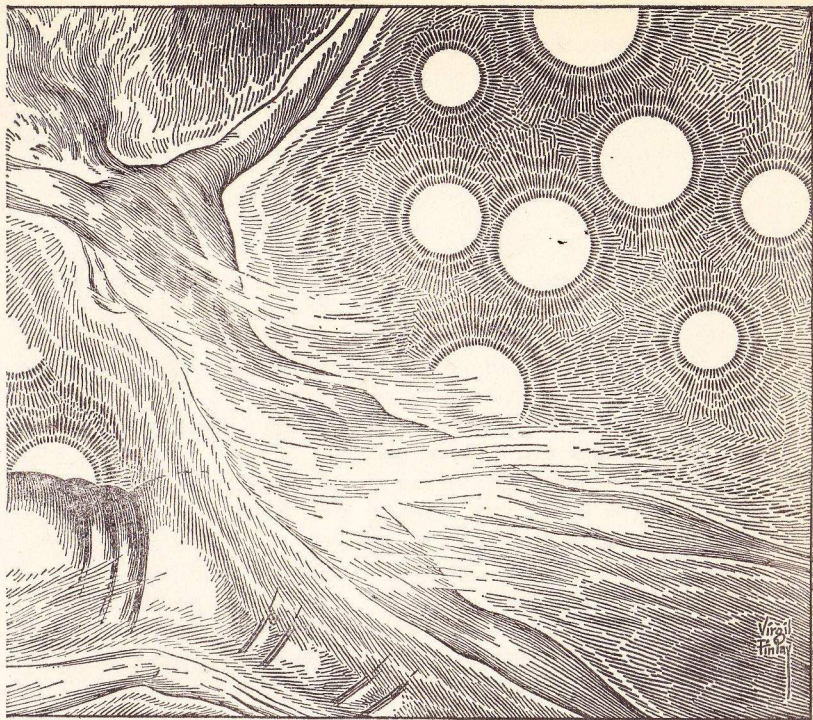
Lawson snapped a switch, and the office lights came on, driving back that too enormous spectacle. "The project was one of pure astronomical research," he said. "You can well imagine how significant data about the far galaxies can be. To name only one item, is their number finite or infinite? That can be settled empirically by making counts

from widely separated points."

However academic the words, his tone was overlaid with emotion. For the moment he had forgotten that he was hostile to his guest. His face might have been Saul's on the road to Damascus.

Camacho nodded. "I know," he said. "The popular press, all us laymen, have been as excited about the undertaking as you yourselves. Though to us who weren't in on it, things seemed to move awfully slow."

"We had to establish a tre-



“The chance of finding one by accident is infinitesimal,” Lawson said. “*Almost* as small as the chance of opening a gate on a stellar interior. Besides, we weren’t looking for a copy of Earth. So remote, your bold pioneers would need too many transfers. There must be enough planets closer to home.”

“Yes, I know that too,” Camacho said. “After a while, the public got bored. So you’d pushed out a billion parsecs — so what? You hadn’t found a colonizable world. That’s what people really want.”

“Sorry,” Camacho said. “I didn’t mean to grasshop. But the subject is complicated. Okay, how far out were you when the . . . the event occurred?”

"About fifteen billion light-years," Vahdati replied. In a near whisper: "How casually I said that!"

"And you proposed to go another billion in one step?"

"Not to any planet. Simply to intergalactic space, for a . . . ah . . . a look. So that we could construct a map and plan a route."

"What of the hydrogen problem? I mean, as I understand it, the velocity of recession with respect to us, fifteen or sixteen billion light-years away, is beginning to approach light. Even if there isn't a lot of gas between the galaxies, what there is should come through the gate like a bomb blast. Shouldn't it?"

"No explosive force," Lawson grunted contemptuously. "Radiation due to atomic collisions, yes, that would amount to millions of roentgens."

"You are forgetting, Senator," Vahdati put in, "that the last step was not made directly from Mars. It was made from our most advanced base. So the distance was only one billion light-years. We had no reason to expect too formidable a velocity difference. Furthermore, the gate was oriented outward. Hydrogen would, in effect, stream past it, but not enter. True, such atoms as happened to strike the door-frame would give off energy. But

according to all calculation, this should not produce too high a count."

"And then our instruments reported nothing," Lawson said. "Nothing that made sense, anyhow."

Camacho leaned back, lit a fresh cigarette and pondered. So far he hadn't been told one damn thing that hadn't been in the newspapers at home. Well, maybe there wasn't anything more, except for the columns of data he had seen.

Mentally, he reviewed those and tried to make from them a picture in phenomenological (read: ordinary human) terms. An automatic cart loaded with telemetric and recording instruments had rolled into one of the booths yonder on the Mare Erythraeum. The gate had been activated. The cart went through to the first way station, somewhere in this galaxy. And so to the next . . . and the next . . . and the next . . . an incredible journey, zigzagging back and forth across the cosmos, piling up energy by increments until after days — tens of thousands of threshold crossings — it was fifteen billion light-years from home and itself crowding the speed of light.

Then it stood — no, not in any booth; it didn't need air — it

stood on the surface of a bare, otherwise useless little world, under alien stars. Here had been planted the receivers for its data, which men would later collect. Machinery swung wide the terminal gate. The cart positioned itself. Telescopes, spectroscopes, counters, cameras, a dozen kinds of meters peered at the open frame.

They should have recorded what had so often been observed before, darkness studded with small, faint clouds that were galactic families. Instead, they got no reading. Absolute blank. The circuits might as well never have closed. Yet monitor instruments, collected later at the penultimate station, said that every switch had operated.

With the saintliness of a good machine, the cart moved forward and thrust a probe into the space gaping before it. Somehow, then, it must have been snatched away. Because it never returned.

"We tried four times altogether, using various approaches," Vahdati said. "The results were uniformly negative where they were not baffling. So Ian Birkie proposed a man should go. He pointed out what we have discovered again and again in the past — an instrument cannot record anything it is not designed and set to record. A human is more versatile. He shouted down

our protests. How could we forbid him?"

How indeed? Camacho closed his eyes in pain. It had to be thus. The jumpgates meant too much for anything unknown about them to remain unexplored. The greatest glory of the race was those times when men had been glad to set their lives at stake for a cause which was all men's — Columbus, Magellan, Cook, Scott, the first who dared go beyond the sky, those who today trod planets beyond Earth's sight — Camacho could so well imagine the young man, his red head lifted high, demanding his right to be brave.

"We took every possible precaution," Lawson said. "He traveled in a small vehicle. That was partly because he would need supplies and environment for such a lengthy trip, partly because mechanical shock absorbers shortened the trip by making fewer transfers necessary. However, it was extra protection for him. At the terminal gate, he was not supposed to do more than open it on the problem region and spend five minutes looking. Merely looking. Remember, we had not so much as recorded any radiation danger. Furthermore, he was to have direct radio connections with us on Mars, via relays set up on uninhabited planets. That series

of openings would be made at the end of the five-minute period. He was to describe what he had seen, then start returning. Who could have known?"

"And instead," Camacho muttered, "when you activated his voice line —"

"What came through was not a blast of energy," Lawson said. "We don't know what. Metal, glass, plastic — everything broke apart chemically as well as physically along the whole relay series. Ground temperature dropped to a hundred or more below zero in the immediate neighborhoods. Then, naturally, the connection was broken."

"We sent men after him. They found the shattered remnants of his vehicle. Of him, no trace."

"You haven't any theories whatsoever?"

"We have a number of them," Vahdati said. "They are all half-baked. How should they not be? These days, scientific information is coming in too fast to be assimilated. We live in chaos . . . and Ian loved it."

"He would," Camacho said. "Every day a fresh adventure." He finished his cigarette. "What do you yourself think?"

Vahdati looked shy. "Precisely because we can't be sure, not even reasonably sure, we are holding back our thoughts," he

said at last. "We plan to return to instrumentation and —"

"I know!" Camacho barked in a flare of temper. "You're afraid of giving ammunition to us reactionaries. Well, God damn it, who are you to decide anything? Who am I? The people have that right. They're the ones who pay us and the ones whose future is up for grabs. How arrogant do you dare be?"

Lawson opened his mouth to get indignant. Camacho went on, faster and more quietly: "Never mind: Of course a man in a responsible position has to be discreet. But I'm not, repeat not your enemy. My committee passes on your whole program; and don't tell me you aren't generously financed. I'm every bit as concerned as you to find the right answer. Give me a break."

He left unspoken the threat to use his authority and the fact that he had taken the trouble to come in person. But Vahdati gazed at him with surprise before saying, "Why, if you wish, Senator, I shall be glad to tell you what I myself think is the best guess. However, it is too radical for most of my colleagues, and it doesn't fit all the facts either."

"Go ahead, please," Camacho invited.

Vahdati did.

At the end, the Iranian said in

a troubled voice, "But you can see that this hypothesis is also untenable. The second cart disappeared like the first. But nothing happened to the third and fourth, which were not programmed to go through the last gate. They returned safely, having merely recorded nothing. Literally nothing; as if they had looked out on absolutely empty space. And that was precisely what Ian was supposed to do."

Camacho sucked in a breath. Understanding struck him like a physical blow.

"But Ian didn't!" he cried.

"What?" They both started and stared at him.

"Certainly not. I knew him better than you could have, the year or so he'd spent on Mars." Camacho sprang to his feet. He paced before them, waving his hands, memory torrenting forth. "I used to go into the mountains with him, surfing, boating, anything breakneck and fun. He wasn't stupid. But he could not have sat for five minutes gawking at silly emptiness. He would have had to leave his vehicle for a peek through the door. Not much of one — but I'll bet anything you like, at the last moment before his contact home was to open, he couldn't resist. Maybe he didn't stick his head out. Maybe he just edged too close, so close that the otherness

grabbed him. It must bulge in a little through the opening, there must be an intermediate region, however thin — can't you see?"

"But . . . but — " Lawson slumped and shook his head.

"If that's correct," Camacho said, "you'll never get any result from all your probes or from all your cautious little men who stick by their orders. Everything they'll ever see is nothing. And so you — we — will never be sure we're right in our guess."

Lawson stiffened. "Have you an alternative?" he clipped.

"Why, yes." Camacho didn't stop to weigh his words. He was too caught up, borne along on a tide, he had to know how Ian had died and what it meant for the race's entire tomorrow. "Yes. You don't go the long way around. You go directly from here to there, sixteen billion light-years in a step!"

Silence. The stars beat their rays against the tiny luminescence of the turret. A dust devil whirled beneath them.

After a long while, Lawson said, "You're crazy."

"Perhaps," Camacho said. "I'm still the politician you've got to deal with."

"But — no, the idea is potential suicide. None but a lunatic would go. Where can we find a man?"

A stranger might have been using Camacho's throat. "If nobody else," he said, "you have me."

VII

Compromise, as always. Mars might be expendable, but was nonetheless expensive. Besides, if the test broke apart the planet, a fragment might conceivably hit Earth. So Twin became the base.

Twin was the second attendant of a red dwarf about fifty light-years from Sol. It was a little bigger than Mars. The atmosphere was thin, mostly carbon dioxide and argon. The hydrosphere was frozen. The entire body had precisely one interesting characteristic. Between its own orbit and rotation, the proper motion of its sun, and the gravitational potential difference, transition energy from it to Mars was very nearly a permanent zero. Synodic fluctuations were negligible and would remain so for several thousand years.

The fact had been noted with laughter. Twin was the one extra-Solar planet which would never become a way station! But now the gates opened. Men and material flowed through. An environmental dome was quickly erected. A disassembled gate

generator followed, to be re-established at the other end of its own shed. Before long, the first tests were conducted.

Drama would have demanded that human beings undertake them. But common sense is rarely dramatic. Automated equipment was sent. The results were exciting enough.

Still, they remained enigmatic in several ways. Decades would be needed to work out proper instrumentation for conditions so strange. And decades were not available. Earth had to know now if the doors onto space were really safe. Men had a shortcut: the universal instrument, themselves.

Volunteers were numerous. Camacho had ample excuses for staying behind. They included the fact that his going would look to the opposition like a cheap political stunt. But in an obstinate way that he himself did not quite comprehend, he felt he must. Since he had instigated this project, and since it was possible for him to suffer whatever penalties there might be, he could not delegate another young man like Ian.

Wherefore he thundered and buttered until the last objections were overcome. Lawson was officially absolved of all blame. Senator Camacho had insisted in documents to that effect.

Not that Lawson wishes me ill, Camacho thought as they made an awkward good-bye handshake. I do believe I'll have a friend in him if . . . when . . . I come back.

He went through the tunnels with Vahdati. Technicians waited at the locker to help him suit up, for they must be armored against vacuum and worse.

Clumsy in their gear, they stood a moment alone in the booth. "I still don't know why you are coming in person, Pez," Camacho said out of a dry mouth.

The Iranian's voice was tinny in his earphones, but sounded amused. "Nor am I sure about you, Ray. However, I remain a qualified gate operator. Perhaps I want to assert manhood this final time, before sinking into comfortable paunchiness.

"I think I prefer the latter."

"You can still cancel out."

"After shooting off my mouth the way I've done? Funny, aren't you?"

Meters flickered. Vahdati opened the door. They stepped through to the shed on Twin.

Camacho was proud at not losing his balance, though the change in weight was small. He made his way past crowding apparatus to a port. Bleakness lay outside, ice and rock and jagged hills which had never known life.

The sky was nearly black, and the lowering red sun hid few stars.

Vahdati closed the gate through which they had come and started the pumps to evacuate this chamber. In his bulky suit and helmet, he looked as inhuman as the machines.

Camacho identified a few constellations. They hadn't changed much. Fifty light-years was little in the galaxy — and he was about to go sixteen billion. "Where's Sol?" he asked.

"I don't know," Vahdati said. He spoke through his radio to the men standing by in the dome, well beyond the estimated danger zone: "We have commenced gas exhaustion. Nothing unusual noted."

Camacho stared out at the planetscape. Nothing unusual, he thought. Great God in heaven! But then, I suppose our daily round is more fantastic than we imagine. The overwhelming bulk of the universe is emptiness, with a few lonely atoms; nearly all of what remains is great globes of incandescent gas; who are we to call ourselves ordinary?

Vahdati threw a switch, and the small nuclear power-unit of the gate on Twin warmed to operating level. He checked the instrument cart. "Everything satisfactory," he said.

"Good." Camacho wished his heart would slow down. "Uh, Pez, what're you thinking?"

"Do you wish a last mutual exchange of confidences?" the Iranian asked sardonically.

"No, I guess not. Let's get on with the job."

Shadows grew knife-edged as the diffusing air was swept away. Some molecules inevitably remained. The shed was turgid, compared with what lay between the galaxies. But there would be no escaping gale when the gate opened.

"Are you ready?" Vahdati inquired.

Camacho tried to remember the Our Father and couldn't. He held Alice's name close to him and said, "Sure, go ahead."

"We shall now establish contact," Vahdati reported.

Power surged.

Vahdati activated the cart. It rolled. The door swung inward.

Absolute, all-swallowing night stood within the frame. Nothing more, nothing less. Camacho thought faintly, Well, isn't that what the unmanned instruments reported?

Vahdati squinted at the readings of the meters on the cart. "Not a quantum of radiation," he said. "Ah — yes, see here, the same result we got last time. Our own infrared is pouring forth as if into an absolute zero . . . but

not quite. The rate is too high. The electromagnetic properties of space are different beyond this gate."

He turned to the other man. In the chill fluorescent light, and the redness which trickled through the ports from the sun of Twin, his face behind the helmet plate was drawn tight. "So far, so good," he said. "We have shown that men, as well as the mice we are following, can survive a look at the X region, with or without benefit of passage through way stations. But that is hardly a surprise. Can we also live if we put a material object through?"

"The experiments before we came say that we can."

"I trust they are repeatable experiments." Vahdati spoke a few words to the dome and operated the cart again.

Machinery whirled without sound. A skeletal arm, energy receivers and iconoscopic pickup at the end, thrust out between the uprights. And nothing happened. A wave of dizziness went through Camacho. He could no longer hold back, he had to yell: "We were right! We were right!" And Vahdati was dancing with him, there in the clutter among machines and ice and stars.

After a while they calmed down enough to observe. As



the teleprobe swiveled, looking past the edge, images appeared on a screen: dim, tiny, spherical clouds. But when the 'scope turned a full hundred and eighty degrees, to register what was behind the gate, the screen filled with light.

Vahdati's flat tone seemed almost irreverent. "No strong radiation from that direction either, though the spectrum is biased far toward the short-wave end. Um-m-m-m . . . yes, what was predicted, the same result as we got earlier. Look at these gauges."

Camacho's untrained eyes saw only needles which began to bob more and more erratically. "The detectors are ceasing to function?"

"Yes. We had better withdraw them." Vahdati retracted the arm into the shed. When he touched it with a gloved hand, metal crumpled. "Crystal degeneracy," he declared. "Still, under present conditions, eight minutes were required for this much damage."

Have we stood here so long? Camacho wondered. Or, rather, only so long?

"Well," Vahdati sighed, "I think we can return to Mars now."

A surge went through Camacho. He never knew if hysteria spoke. "No, wait. One other

thing. I want a look for myself."

"What? Vahdati stepped back. "Are you insane?"

"No, listen, a second or two ought not to hurt me. Mice survived longer, didn't they? Somebody's going to do it. Might as well be me. And this is my last chance. Ian was out here. I've got to, to say good-bye." Before his companion could stop him, Camacho was at the gate.

He clung hard to the frame and leaned forth.

Around and around him reached illimitable darkness. It was strewn with little discs of light. The gate had simply happened not to face any of them — no coincidence, when they were so widely scattered. They didn't need to cluster; they had an infinite space to fill. In appearance they were less impressive than stars. But then, they were terribly far away. Camacho twisted his body to look entirely past the door, backward.

Glory blazed at him.

Camacho huddled on the floor and wept. "Ian, boy. I know now for sure. You were the first man who went beyond the universe."

VIII

Port Nikolai. Nahabedian's office. The commandant himself, Director Lawson, Manager Vahdati, Senator Camacho.

"You are certain you are in good health?" Nahabedian fretted.

"Oh, yes, the medics checked me out from head to toe," Camacho assured him. "I really wasn't reckless, snatching a peek. No dangerous amount of radiation had been registered. Of course, there was the matter of atomic and molecular destruction in living tissue. But in view of our earlier results, I figured I could stand a couple seconds."

Nahabedian rubbed his chin. "I am afraid I still do not see what this is all about," he said.

"The idea is not difficult," Vahdati replied. "Here we are, inside the Hoyle-Bishop universe — that is, the entire oscillating system of matter-energy observable by astronomical methods. We had estimated its radius as twenty billion light-years. But we were evidently wrong. It is somewhere between fifteen and sixteen billion. Having gone to the latter distance, our gate was suddenly outside the system."

"Why did this cause disaster?"

"Because the local characteristics of nature depend on the local concentration of matter-energy. The exact value of the fine-structure constant, or the ratio of mass between proton and electron, or any such important numerical quantity, is itself a property of a region. Basic natural

law is the same everywhere, we believe. But the expression it takes is variable." Vahdati hunted for words. "Consider an analogy from our own little Solar System. The law of gravitation is identical for all the planets. Yet the force of gravity on the surface of each planet depends on its mass and diameter. In a similar way, the dimensionless constants which govern the behavior of matter-energy depend on the mass and diameter of a given universe."

"Exactly. To be specific — though we will need a great deal of study to make sure — we suspect that between universes the radii of atoms are considerably larger than inside any universe. Thus, once outside, atoms expand, sucking away whatever energy is available."

"But how could you, ah, get away with it this last time?"

Vahdati smiled at Camacho. But it was Lawson who said, "You tell him, Senator."

"Not really," Camacho said. He felt more diffident than a politician should — actually hot in the ears! "No, I just thought Dr. Vahdati's hypothesis, which he's now explained to you, Commandant . . . I thought it sounded reasonable. The main stumbling block was that according to this notion, Ian Birkie ought not to have been harmed. I,

knowing Ian, was able to remove that difficulty by pointing out that he must have disobeyed orders.

"And then I thought, well, by using way stations, the probes had entered interuniversal space at a low relative velocity. But suppose they went direct, one step from here to there. They'd have a speed practically equal to light, as far as that space was concerned. Every atom, every electron would be tremendously massive, have tremendous inertia, not change configuration in a hurry." He spread his hands. "The physics agreed with me, this sounded right. We tried. It worked."

"And Birkie was more vulnerable?" Nahabedian said.

"Yes," Camacho said. "Even a little bit of matter — a hand, say — stuck out into interuniversal space at low speed, would be affected immediately. It'd change, expand, draw energy from the rest of the body, pull everything on through and scatter it into infinity." He met their eyes, man after man. "A merciful way to die," he said, "and not for nothing. He gave us more than anyone has ever given before, proof that there is indeed no limit to space or time, no limit to what we dare hope for. We, those who cared for him, we can be content with that."

After a while, Lawson said almost timidly: "Senator, you have earned our respect and thanks. But have we perhaps earned yours? Enough to make you reconsider your stand on the Earthside gate?"

Camacho was glad of an argument. "No," he said. "Sorry. I was hoping this latest experience would finally convince you we're still too ignorant to chance it."

"You took a risk!"

"With myself, maybe. But certainly not with the entire human species."

Camacho smiled into their disappointment. "But relax, boys," he said. "You've got more work than you can handle in your own lifetimes. And when we do find New Earth, several New Earths, when we have the race safely spread out, so that nothing can destroy it — why, then we'll certainly build your gate. I've never advocated a permanent prohibition. This one problem got solved. We'll solve every other problem we meet too. Just one at a time, please."

Presently he left to catch his ferry. They had laughed with him for a while. He hoped they would come to see matters his way. If not, well, he'd go on fighting. — POUL ANDERSON



Children in Hiding

by JOHN BRUNNER

All the Babies were healthy in every way . . . except in their minds, where Something lurked!

“Mr. Murphy is here,” said the speaker on the desk. “The special investigator from Earth. I’m sending him in right away.”

Hans Lammergeier, Chief Administrator of the Status Two colony planet Landfall, jolted out of his obsessive brown study. He’d been thinking about the same problem as usual, of course. On Landfall (population twenty million, gravity 1.09 Earth, atmosphere, climate and period of rotation “acceptable”) there was only one real problem.

He shot out a hand and tapped the switch on the desk which turned the wall on his left brief-

ly into a mirror. He looked himself over, adjusting the collar of his old gray jacket, thrusting a stray lock of hair back where it belonged over his growing bald patch, making the normal ineffectual gestures of an overworked colonial administrator faced with an important visitor.

For one moment before cutting the mirror, he stared at his appearance. Hans Lammergeier, age sixty-one. Forehead lined, eyes sunken, hair graying and falling out — Earthside, you’d say ninety, maybe a hundred. And he was far past the stage at which he could contrive to make himself look merely experienced and grave.

Damn the Babies!

The door squeaked open. Guiltily he shut off the mirror and rose, extending his thin, knobbly hand across his desk.

"Mr. Murphy!" he said in his best approximation of a warmly welcoming tone. "I'm Lammergeier, of course. Please sit down."

Mr. Murphy was a typical Earthman: shorter than Lammergeier, sallow, with dark hair and a suspicion of imminent fatness. Earthside diet had been starchy for five generations, and it tended to show before the population reached middle age. But he was in glowing good health despite that; his clothes were impeccable, and Lammergeier would not have undertaken to guess his age closer than ten years.

Overcrowded, underfed — that was the prediction. The colonists would have the edge everywhere: more room, more food, more clean natural air . . . And look at the two of us! Damn the Babies!

But Lammergeier swallowed his instinctive reaction and did no more than resume his own seat.

Murphy, setting a memocase on the desk's forward rim, looked around him with some distaste. Lammergeier didn't blame him for that. The office

hadn't been redecorated in fourteen years, and there was a crack across the ceiling which occasionally shed white dust when the foundations settled another millimeter. It must represent to Murphy the logical climax of what he'd seen on his way from the spaceport: potholed roads, weed-thick fields, tumbledown houses . . .

Suddenly conscious of how well he fitted his setting, in this jacket that hadn't been cleaned for six months and was anyhow far older than any garment should decently be allowed to become, Lammergeier cleared his throat.

"I must — uh — apologize for the appearance of my home world, Mr. Murphy. The air of neglect, which you've doubtless remarked on, is solely due to the matter which compelled us to ask for your assistance."

Recalling the wrangling that had preceded the decision — the expressions of shame at confessing failure after the grand promises on which their colony had been set afloat — he grimaced.

Murphy shrugged and made a tiny adjustment to one of the controls on his memocase. "I was advised during my briefing of the magnitude of the trouble," he said. His voice was as oily as his fat-taut skin. "But until I saw it with my own eyes I found it incredible that half the avail-

GALAXY

able resources of a planet as potentially rich as Landfall should be absorbed into — h'm — what does actually absorb it. You are — check me if the situation has altered since I was first briefed — supporting four million totally non-productive individuals!”

Lammergeier felt the first beads of sweat prickle on his skin. What he'd expected from Earth he hadn't been sure. At the very back of his mind, perhaps, after his long and bitter struggle to persuade his Planetary Council that they must doff their pride and appeal to Earth, he'd nursed a fantasy of some team of miracle workers, who would thunder out of the sky in the latest interstellar cruiser and instantly solve the Babies problem before deciding to settle here themselves.

Instead

Struggling to be both polite and firm, he said, “That's hardly a fair way to put it, Mr. Murphy. The future of our colony was predicted on a certain available supply of manpower — and womanpower too, I needn't stress that. What would you have had us do? Dig mass graves and shovel the Babies in by the tens of thousands?”

“According to what I was told,” Murphy said, “they're effectively mindless, and there are mil-

lions of them. They must be the direct cause of the poor maintenance I've observed in your buildings and roads, and doubtless elsewhere that I shall discover later. Moreover, the average daily calorie intake of your people is lower than that of Earth, a shocking display of mismanagement, in view of the fact that our population is now almost as high in the billions as yours is in the millions. Correct, or not?”

“Yes! But — ” Lammergeier's forehead was now so damp he could not refrain from mopping it. He registered Murphy's disapproval of his using a handkerchief that would be returned to his pocket, instead of a hygienic tissue delivered at once to a disposall. And ignored it.

“Bear with me while I try and make clear how it looks to us,” he requested. “From Earth, I don't contest it must seem to reflect mismanagement. But —

“Oh, I'll have to go back to the beginning. Landfall has been established as a Status Two colony since the middle of last century. During our immigration period, nothing but *nothing* happened to cast doubt on our assumption that it would turn out a perfectly habitable world.”

“You say ‘our’ assumption,” Murphy murmured. “You were here at the time, then?”

Galaxy! Do I look that ancient to him?

In the nick of time Lammergeier spotted the betraying twist on Murphy's mouth and bit back his indignant denial.

A needler. But I don't have to rise to his baiting.

"I employ the word merely to emphasize the deep involvement everyone here feels with the fate of the colony." There — that was a diplomatic way of putting it! "You will hardly have overlooked that the pre-colonial stage was masterminded direct from Earth, and the government of the time was surely no less concerned for the fate of its intending emigrants than the present one which has sent you here to advise us."

Was that a wince from Murphy? Lammergeier couldn't be certain. Hoping the jab had found its mark, he hurried on.

"The — ah — epidemic, if that's what it is, which began twenty years ago came without warning. The birth of several infants who after a period of months, if not years, turned out to be subnormal could hardly have been detected while they were still unweaned, could it?"

"Interesting local dialectal variant you just used," Murphy put in. "Four million described as 'several!' "

"It wasn't four million to be-

gin with!" Lammergeier was reddening. "This thing has been going on for twenty years!"

"And in the whole of that time, no normal infant has been born on this planet?"

"Well . . . no." Lammergeier forced out the admission in a whisper.

From where Murphy was sitting, it must look like insanity to send for help only now, when the situation was out of control. Yet how could he hope to explain the real state of affairs? He, even he who had fought and won that bitter argument in the Council over so many years, felt the most violent revulsion at the idea of killing off the Babies and starting a fresh generation with adopted children from some other planet. That was the wildest idea voiced during the debate, but also the most promising. And didn't *that* sum up their predicament!

In any case, suppose it happens all over again with the descendants of the newcomers?

Murphy's eyes had wandered around the room again. Now he pointed at a faded chart hanging lopsidedly from a single pin in the wall at Lammergeier's back.

"What's that?"

Lammergeier craned around and felt a stab of surprise. That map had been there for so long, he'd ceased to register its exist-

ence — it was a background detail. In a tone of mild wonder, he said, "Why it shows the course of the epidemic from the first township at which it was reported, to the limit of its spread."

"Which was the whole inhabited area of the planet."

"Er — yes, I'm afraid so," Lammergeier confirmed miserably.

"Fantastic," Murphy muttered. "I was reading stats of some of the advertising material distributed during Landfall's colonial phase. It makes a sorry contrast with the actual state of affairs. Well, let's not rake over dead ash right now. I shall need to see the consequences of the phenomenon with my own eyes."

There was only one place to take him, of course. Lammergeier took him there, in a wheezing car forty-odd years old held together by string, wire and the patient attention of its eighty-year-old driver. The arrival of Murphy had lent Lammergeier a fresh viewpoint, and now he thought with a shock of dismay: *Why, we're a planet of old folks!*

Nowhere on Landfall was there a functioning human being younger than the age of about forty. And the youngest were forty the way he was sixty: looking and feeling half as old

CHILDREN IN HIDING

again, one foot already in the grave.

He stifled the realization and spoke aloud, pointing through the car's windshield at a building which was looming ahead.

"That's the Babies' Home for the capital and environs. The present population is about eight thousand. But as you see we're having to add a new wing."

Murphy scowled and said nothing.

He didn't in fact speak again until they were in the lobby of the building. Lammergeier had had no chance to phone through and warn the staff of their arrival — the phone cables were out again and no one could be spared to fix them until next week. Actually, they walked straight into the middle of an event which was heartbreakingly typical of the whole calamitous mess.

At the reception desk, flanked by two uniformed policemen, a woman in a shabby dress stood clinging desperately to a child of about six or seven, far too heavy for her to carry yet cradled tightly in her arms. Facing her were a nurse with a lined, weary face under a mop of gray hair and a bald elderly doctor in a once-white coat.

Lammergeier whispered to Murphy, "Wait here a second, and I'll get the director to con-

duct you around personally."

"No!" Murphy raised a hand, eyes on the scene at the reception desk. "What's going on?"

"Well, I assume she's what we call a 'hider,'" Lammergeier explained. "Despite the fact that we don't get normal children any longer, the maternal instinct seems to be insuppressible. I suppose the two things must go together: our reluctance to face hard facts and stop trying to keep these useless Babies alive, and the refusal of so many women to part with their children. Of course, it would be ridiculous to allow them to stay with their parents. The planet's economy is rocky enough already. If members of our labor force were compelled to take time every day — and night — to attend to their children, things would be impossible. We tie up plenty of workers by adopting the centralized system, but at least the loss of the economy is concentrated in certain district and confined to certain professions."

"It's compulsory to bring children in to these establishments, then?"

"Oh, yes. It has been for almost fifteen years. But like I said, you still get these 'hiders'."

Murphy nodded. "The children — the Babies — are literally helpless, are they? Even when they attain the advanced age at

which the oldest must be by now — say twenty?"

"Completely helpless," Lammergeier said. "They're exactly like babies, which is what we call them. They have to be fed, changed, lifted up and down from bed to floor so they can play a bit — they show interest in bright colors and moving toys, but that's the absolute limit of their mental attainments."

Abruptly the woman at the desk burst into hysterics. The policeman gently but firmly separated her from the child, handed it over to the nurse, and marched her out, still screaming as though her throat would split. Lammergeier and Murphy stood in silence till she was gone.

Then Murphy shook his head. "Fantastic. I'm sorry, but I find all this incredible. With the advantages of a planet that's still virgin over most of its surface, to wind up in this plight!"

"You don't understand," Lammergeier sighed.

"Maybe not. After all, I come from Earth, where a nonproductive individual is a luxury we barely tolerate at all. Certainly we wouldn't tolerate twenty per cent of them in the population, nor would we go to such elaborate lengths to enable their survival!"

"But there's nothing apparent-

ly wrong with them!" Lammergeier barked. "To all outward appearance they're healthy, they're organically sound; If some way could be found of bringing their intelligence up to — if not full adult status — at any rate bright idiot level, we could let them look after themselves, and what's more we'd get work out of them. They represent a tremendous potential increment to our work force! Get them out of their beds where they lie like vegetables, and we'd be back on our original development schedule within half a century!"

"And that's the miracle you're expecting me to work?" Murphy demanded coldly.

"Well — not you exactly. But we hoped that with Earth's vast store of knowledge and skills we haven't had time to bring forward on Landfall . . ."

"I presume," Murphy said with biting irony, "you've been too busy to calculate the mere time it would take to process the millions of your — your babies, even granting such a process could be devised!"

"I — uh — I imagine it would take years, at least," Lammergeier stammered.

"At least," confirmed Murphy. "I am not here to wave a magic wand and bring your idiot children out of their overgrown creches, as you appear to ima-

gine. I'm here simply and solely to evaluate the situation and make a recommendation as to the future visibility of our colony on Landfall. Now if that's understood, shall we proceed?"

It was fortunate for Lammergeier that from that point on he could hand over the job of explaining things to Murphy. Director Chen and Matron Hobday had all the facts at their tongues, where Murphy liked them. He trailed behind as they recited the statistics, identified the rooms, the endless corridors, the life-support system which took the worst of the burden off the adult staff. Everything seemed to blur into an endless sequence of babies and Babies: the mewling puling infants and the puling mewling adolescents, a kind of blasphemy against human form in their mindless oblivion.

He only returned to full awareness when they paused before a door he recognized. It was a little more stained, and the paint was more chipped than the last time he'd seen it, five years ago. But it was the same door. And the same paint.

"And this room houses the first of them," Director Chen was saying. "You'll perhaps have noticed that this is the oldest wing of the building; the remainder is

entirely a series of more recent extensions. When the very first of the — ah — victims were identified, they were brought here for observation, and apart from minor alterations necessitated by their growing older and larger, their quarters are the same that they've always known."

"Such darlings they are, too!" exclaimed Matron Hobday, who added uncomfortably when Murphy stared at her, "Well — in their own way, you know!"

Chen, frowning, made to open the door. Murphy stopped him with a gesture and betrayed apprehension.

"Ah — are they of normal adult size now?" he asked.

"Oh yes. Within the Landfall range of height and weight."

"And they're completely unaggressive? I mean, I should have thought that an infantile mind in an adult body was likely to lead to at least occasional outbursts of bad temper, which might be rather destructive."

"No, that's one thing I can safely say we've never observed," Chen assured him. "Had the condition led to violent tantrums I'm sure we'd have been in touch with you much earlier than this."

"I see." Murphy rubbed his chin. "And something else. How many adults and near-adults are there at present?"

"Over — shall we say fifteen years of age?" Chen suggested. On Murphy's nod, he counted to himself. "Approximately . . . three-quarters of a million. There was a peak, you see, about two years after the knowledge of our problem became widespread. Our fertile parents all knew their heredity was good — they'd been checked for it as a matter of routine — so they futilely attempted to beat the odds. Later, the mood changed, and now most people have given up trying. A case like the one you saw downstairs on your arrival is a rarity these days, though as recently as three years ago it would have been commonplace."

"Good, that's all I wanted to know." Murphy pointed at the door. "Shall we go in?"

Nervously, Lammergeier followed behind. Beyond the door, things were much as he had last seen them, apart from more wear and tear. The Babies, adults in everything except mentality, were being put down for their daytime rest. The floor was marked with traces of their presence, some of the traces none too savory; but they themselves were all in their oversize cots, cooing or complaining according to temperament. Two hefty male nurses and one woman were just settling the last of them down.

Lammergeier stifled a cry of admiration for their devotion; any of the Babies would have outweighed him, and it must be a terrible task lifting and lowering them several times daily.

The nurses were surprised at the entrance of their director and his companions, but they refrained from asking questions, completed their work on a nod from Chen, and went out with curious glances.

The instant the door was shut, Murphy marched over to the bed of the nearest Baby and stared down at him, naked except for a huge diaper. He set his memocase on the high metal rail intended to prevent the Baby toppling out of bed if he rolled in his sleep.

"And these are the creatures you've saved to keep alive and well for twenty years," he murmured, touching the controls on the case. "I have to grant that they seemed physically sound."

"Oh, they are!" Chen hastened to assure him. "They've had the best diet, the best medical care — not that they need much of that; they're astonishingly healthy. If only we could find a way to spark their intelligence!"

"You say they're quite moronic?" Murphy said, stressing the last word.

"Completely! Not one of them has ever progressed to the stage of uttering a recognizable word. They coo and cry, and that's the limit of their aspirations."

"I think you must be crazy," Murphy said with abrupt coldness, letting the case fall beside him to the full stretch of his arm. He turned to confront them directly.

Lammergeier pushed forward. "So we're crazy, are we?" he blurted, unable to restrain himself any longer. "We should have killed them off and buried them by the thousand, should we? Oh, probably it looks that simple from Earth! But these are *our* kids. And this is *our* planet, that we've sweated and slaved over all our lives! How the hell do you think we could bring ourselves to face the need to exterminate them because they aren't even useful as animals, then pack our gear and quit Landfall forever for fear it might happen again? We couldn't! And it's no damned good trying to make out we ought to have done!"

"No, I wouldn't say that," Murphy agreed. "Man is hardly a perfect rational animal, is he?"

Lammergeier shook his head dumbly.

"But I didn't mean that," Murphy pursued. "What I meant was that you're crazy to think

that these Babies are mindless."

Chen reacted first to that. He took half a pace forward. "But I assure you, Mr. Murphy, on the basis of years of experience, that that's the case! I've run every test I ever heard of. I traced every wild speculation I could locate about nonverbal intelligence, in the hope they might represent a mutation with some other faculty equally serviceable and equally human. I drew a blank!"

"Then that's where you made your worst mistake," Murphy shrugged. "I don't see that there's much wrong with these young men around us."

"Of course you can't see what's wrong!" Lammergeier raged. "That's the whole point!"

"Then how about this? Murphy snapped. He rounded on the nearest Babies and clapped his hands together. "Hey, you! Get up! You've spent long enough lounging around having all your wants attended to! There's work to be done — *move!*"

The Babies turned their heads. There was a sound of sighing. Then, one by one, they stretched, yawned and vaulted over the sides of their cots to land bouncing on the floor; nineteen specimens of healthy, muscular adulthood absurdly garbed in off-white loincloths and safety-pins.

Lammergeier, Chen and Matron Hobday were rooted to the spot, eyes goggling. Lammergeier found his tongue first.

"But — ! Did you know about this already?"

Murphy gave a faint smile. "You might say that," he conceded.

"Then — is the problem widespread?"

"Getting wider all the time." Murphy sounded secretly amused.

Taking it for a patronizing comment on the stupidity of colonials, Lammergeier felt a surge of anger. "Well, if the problem's already known elsewhere, and you came able to solve it with no more than a curt tone of voice — "

"And this," Murphy put in, hefting the memocase.

"The hell with your gadgetry! What I want to know is, why Earth let us stew in our own juice when they could have had the *courtesy* to let us in on the secret!" Lammergeier wanted to stamp until the floor gave away.

"Oh, shut up," Murphy said wearily. "They don't know about it on Earth, so how could they have told you! You there?"

The tallest Baby scratched his stomach absently. "What's this work you want done, boss?" he inquired in a clear tenor voice.

"What the hell do you think?"

Murphy snarled. "There are three quarters of a million of you grown to full size now. You could have done this job years ago. Head Office shouldn't have had to send me to kick you off your beds! Go on, start making up for lost time!"

The Baby shrugged, put out both hands, and proceeded to tear Lammergeier limb from limb.

"And clear up behind you!"

Murphy added, as he bent to the memocase — which of course was not one.

Head Office from Operative "Murphy" (date untranslatable) planet "Landfall" (coordinates untranscribable):

When my grave-digging details get through, the situation here will be back on schedule. The ostensible failure of the project seems to have been due to nothing more than an excess in the mother-love component of the planetwide broadcast from the mind-blanketer. This appears to have been set too high for fear the natives would fight back against the Babies when the latter showed their hand. The precaution was needless, and what's more it backfired! instead of resenting the burden the Babies placed on them, practically everyone on the planet lavished such care and adoration on the

little monsters the psychological trigger intended to respond to parental hatred was never tripped. Consequently they stayed the way they were a full five years after they could have taken over.

In any case, the drain on the planet's resources and the exhaustion of all the intelligent adults of the native species would have rendered more than token resistance impossible. We can certainly go ahead with confidence.

Speaking of which — how are things on "Earth?" I've heard so much about it I'd like to see it some time!

—John Brunner

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THE MODERN PENITENTIARY

by HAYDEN HOWARD

Illustrated by GAUGHAN

*He was the worst criminal the
world had ever seen — and his
jailer was in love with him!*

I

Alone in the comfortable apartment which was his cell, Dr. Joe West chewed the inside of his cheek in self-torment. Quivering, his scalpel exposed the tiny pituitary gland of the Arctic Ground Squirrel.

"Blind fools!" His real guilt was so much worse than the angry orators in the United Nations General Assembly had shouted.

Racial murder? Unpredictably, twenty-two Canadian Eskimos had died. The Ottawa court convicted him of murder.

"I'm guilty of worse." His face twisted. Less than 30% of the Esk women had developed the planned uterine infection. Not a single Esk died. Their resistance to human pathogens was so much stronger than he expected. The Esks continued happily eating and breeding and breeding and breeding —

"Damn me! Instead of me controlling their birth-rate, I'm their Santa Claus!"

It was his murder trial which attracted world-wide attention and aid to the hungry Esks. Ironically, it was his trial which awakened humanitarians and politicians to the plight of the overcrowding Esks. Rapidly multiplying Esks were starving.

Both the outraged Chinese and the embarrassed United States were air-delivering food, baby clothing, portable barracks.

"Blind fools! Like providing food and shelter for lemmings." Dr. West's youthful face winced, gaunt as a pensioner's.

The last rumor Dr. West had overheard as he was led to his bullet-proof glass booth in the Ottawa courtroom for sentencing: a Chinese VTOL aircraft had "evacuated" more than one hundred starving "Eskimos," surely Esks, from Canada's Boothia Peninsula. Like an infectious boil, the population pressure of the Esks had burst.

"God! What's happening out there?" Trapped in the New Ottawa Reformation Center, Dr. West knew he should make a second attempt to escape — at once.

His cell was frighteningly comfortable. Safe as a womb. Already the friendly Staff were changing him.

Outside the Esks would change the world.

The hiss of increasing air pressure alerted Dr. West that the outer door to his suite was being opened. Ignoring the Ceiling Lens, Dr. West hastily wrapped the dissected squirrel in metallic-green Christmas paper; he was not allowed newspapers. Dropping to his knees, he hid the squirrel under the compressor.

As he lurched to the sofa, his abdominal incision tugged. His heart thudded more quickly than the compressor pumping coolant through frosty copper tubes past his work counter to the huge insulated cage.

It was an ingenious but scary means of escape.

Peering out through the double glass window of the cage, a single chilled Arctic Ground Squirrel (*Citellus undulatus*) still resisted hibernation. The other squirrels slept under the sawdust. This lonely squirrel

shrank back as the inner door to Dr. West's suite moved open and Nona walked in with a therapeutic smile.

His pulse racing, Dr. West couldn't remember whether he'd shaved. Every day for a week, at 10:00 a.m. she had entered his suite, made his bed, done his dishes and tried cheerful conversation.

Her blue uniform no longer reminded Dr. West of a guard or airline stewardess. Through his insane glass wall, he was staring at her eyes.

"Merry Christmas, Student," Nona laughed, but her self-assurance visibly fell away. "This is supposed to be a present to you from the Staff. But I don't know what's in this package." She wasn't smiling now. "I didn't have anything to do with it."

Dr. West reached for the package, which was wrapped in grinning Santa Claus paper. He felt as if he could almost reach Nona through his imaginary glass wall. His fingers closing around the bottle-shaped package touched her hand. His muscles tightened. After a year alone in Territorial Prison, and then in the bullet-proof glass booth while on trial, and then in Classification Prison, always alone and cut off, Dr. West could not quite break through the illusion there was a glass wall —

"Gurgles like a fifth of rye," he remarked with a weak smile, cautiously shaking the package.

"I doubt that." Nona sat herself down on the coffee table, still breathing hard as if she had been hurrying to her hour-a-day appointment with him. Always she seemed to be perched on the coffee table, her knees pressed together, her hand tugging down her blue uniform skirt.

"That's Christmas on your head," Dr. West stammered, not sure what he meant to say.

Her silvery flower-shaped hair decoration of foil, tinsel and yellow-green mistletoe rustled as she raised her face with dimpled pleasure. "Thank you," she said.

After a moment she said, "There's still a package in your hand."

Dr. West's fingers stripped down the red and white Santa Claus paper, exposing the clear glass neck; he laughed with confusion. "A fifth of gin?" He stared at something worm-shaped and pink drifting back and forth in the alcohol. "I'll be damned! It's my appendix."

"I'm sorry!" Nona blurted. "What a horrid thing for the Medical Officer to send."

At her upturned face, Dr. West blinked, more surprised by her shocked reaction than by the

fact that the Medical Officer would send him back his appendix for Christmas. Dr. West's smile hardened as he silently read the note: *Mr. West, our pathologist reports — .*

II

That first night in his suite, Dr. West had lain waiting for his fever to rise. The dull pain spread. His abdominal muscles became rigid. He vomited, crawling toward the bathroom. As he had hoped, the Ceiling Lens was transmitting, and thirty floors below in the basement where 240 tally screens were banked, the Night Observer noticed and telephoned the Medical Officer.

Dr. West had expected to be rushed out of his solitary cell into the elevator, and down, then out through the icy Canadian night to the hospital building. Apparently that was someone's plan. Perhaps an orderly had been bribed. The rectangular hospital seemed to have more escape possibilities than these tall cylindrical towers of the New Ottawa Reformation Center.

From a distance the towers had resembled concrete grain elevators. His first glimpse, as the armored car delivered him toward the penitentiary, had shifted from the towers to the

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Canadians massing in the sleet. PRESERVE OUR ESKIMOS, a placard read.

Flailing their signs, the screaming mob broke through the police line and halted the armored car with their bodies. SAVE OUR ESKIMOS. A sign hammered against the bullet-proof window. HUMAN LIFE IS SACRED. A contorted face pressed against the glass, recognized Dr. West. "Kill the bastard!"

Dr. West had closed his eyes. They were right.

Shivering inside warm Tower #3 that first night, finally alone in his solitary suite, still shivering Dr. West had hung up his gray denim trousers, and the capsule fell out of his cuff. He had blinked at it. On the pink gelatin was scratched HOSP-APP. At first he did not realize what the APP stood for. With irony he thought the capsule might contain cyanide from his billions of telly admirers who had witnessed his trial and conviction for genocide and were outraged there no longer was a death penalty in Canada. Their dead Eskimos were lovable people, easily idealized. "Tool of capitalist genocide!" "Communist fiend!" the confused Canadians had shouted after him.

Swiftly, willing to accept whatever it contained, Dr. West had

gulped the capsule and lain down. His actual crime, his ineffectiveness was more terrible than the billions knew.

The numbing of death did not come. As his temperature rose and his symptoms proliferated, Dr. West had realized that APP stood for appendix. Someone was trying to get him out. Someone must believe him.

Fever engulfed him in delirium.

A potent capsule! He imagined he saw Eskimos entering his suite, and he shouted with terror.

The Medical Officer's fingers were pressing his rigid abdomen. "Nurse, best take a thermometer reading from this chap."

The massive whiteness of a polar bear loomed over the Medical Officer's shoulder, and Joe West had yelled.

To his dismay, instead of carrying him out to the hospital, gauze-masked monsters wheeled a portable operating table into his suite. "Best give the patient a spinal."

Mirrored in the reflector of the portable overhead light they were turning his body. Their yellowish rubber hands gleamed. A grease pencil marked a line from his navel to his hip. He felt the numb tugging of the scapel.

When the appendectomy was complete, a masked face had bent over him. "I say, West,

your appendix appears remarkably healthy. In retrospect, your symptoms all seem rather odd. You've made me feel the fool. Was this another one of those unnecessary operations?" The Medical Officer had turned away. "Best deliver his appendix to the pathologist."

Now, for a Christmas present, or a warning, the Medical Officer had returned his appendix in a bottle with a note.

Mr. West, our pathologist reports that a foreign substance, probably ingested, raised your white blood count and induced other symptoms typical of peritonitis. As a former medical man, you may have a more specific explanation?

Why not feign a brain tumor next time? We would welcome the exercise. Merry Christmas from the Staff, New Ottawa Reformation Center.

P.S. Looking forward to your continued presence during the New Year.

Dr. West's bitter grin sagged while he turned his head from side to side as if searching for a window to the Outside. Windowless concrete. He stared past Nona at the concave wall and violently stiffened, his fist crushing the note.

Her voice intruded: "Did he write one of his funny notes?"

"Funny? My sense of humor's dead. I'm dead. Don't waste your hour in here with me. Don't waste the taxpayers' money. Get out, dammit!"

Instantly he was sorry — and terribly lonely.

She looked up at him. To his surprise, she moved toward him, smiling.

He stiffened. "Get out. While you can, go!" he shouted. "Get out. I can't stand your — is it sympathy?"

She edged toward the door but turned around, her face solemn. "If you want, you can apply for someone else, a different social Therapist."

"No! What choice has a rat in a trap?" He looked her up and down. "Bait, is that what you are? Get out."

"After you've been here a while," she answered softly, "you'll realize this is like your home. You'll feel differently. Please, if you want to — you can apply for a different —"

"No, dammit, I want to get out of here! At least you — get out!"

After he had caught his breath, he realized she was still standing there. Trying to hold his voice from trembling, he said: "You don't scare very easily, do you?"

"Sometimes. But not of you."

"I'm sorry. But I've got to get out of here. I forget you have

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problems, too. Here you are a woman alone all day with us murderers and maniacs."

"I'm not alone."

"Do you mean that physically or spiritually? Outside, they'd lynch me," Dr. West said finally. "In here you people try to make me feel comfortable but won't even tell me the news."

Wryly he smiled. "There was a prophetess named Cassandra. Now I know why she wailed. A man, a prophet, would have battered his head against a marble pillar. Cassandra could fortell what was going to destroy Troy, but no one would listen. She warned them not to drag the wooden horse into Troy. No wonder she wailed. Helplessly knowing what is going to happen, but not being able to do anything is so much more painful than not knowing!"

"Aren't you being rather dramatic," she remarked. "That wooden horse, isn't it in a school book about Greece?" Turning away from his tormented face, she walked into the kitchenette and opened the sliding door which concealed his sink and electric stove. She boiled water. "Instant coffee?"

"So you're the unshakable type," he laughed bitterly. "Must help in a madhouse like this."

"I believe in living along from

day to day." She sat down on the other end of the sofa and smiled at him over her steaming cup. "Now that you've had your tantrum for this day, I'm going to tell you something which may give you a second one."

"No, I'm through," he said, smiling faintly. "Your child psychology has overpowered me."

"The Pharmacist asked me to ask you — " she put down her coffee cup — "if a hypodermic was, shall we say, overlooked and left in your cell. During the first three nights after your appendix operation the nurse gave you sleeping injections. In a government institution like this everything has to be accounted for — even if it's all used up like a one-shot disposable hypo. Anyway, the nurse must have become confused in her equipment count. A used hypo is missing. Of course she had other patients to visit, but you're the newest in this tower; and this has never happened before, so the Pharmacist wonders, if you still have the hypo, would you return it?"

"I haven't any hypo."

"Good. I'll ask the Recreation Officer if he'll start the search in someone else's suite. The Administratrix has told him to search, so he has to search."

"That's all right." Dr. West leaned back on the sofa. "The

Recreation Officer can start here. I won't feel persecuted. He's my buddy," Dr. West bluffed and nodded at the insulated cage, the compressor, the centrifuge, the gleaming glass equipment, all of which the Recreation Officer cheerfully and ingeniously had acquired for him — with Dr. West's own impounded funds.

Dr. West's heart palpitated as he remembered the dissected squirrel concealed under the compressor. But he went on talking. "The Recreation Officer showed the Administratrix my hibernation-study proposal. I may be repeating old metabolic and glandular research, but it's more therapeutic for me than weaving baskets. He says he got her approval by suggesting Tower #3 surely must be more enlightened than Alcatraz — some prison where they once let an old lifer raise canaries. So the Recreation Officer's my buddy, and I raise squirrels. He's welcome to search. When is he likely to?"

"He'll probably start someplace else." She put down her coffee. "At least two students who've been sick and visited by the nurse are former drug addicts and might steal hypos, I suppose." She looked solemnly at him, and he was surprised how small she really was. Her

hand on the couch was fragile compared with his. "The truth is", she laughed, "some men in this tower are — rather scary. That's why in your suite I feel so much better — with you."

Dr. West recognized the pitch, the helpless bit, and he almost smiled with pleasure. He not only felt protective, he felt almost possessive. From the sofa, she looked up at him, smiling with her eyes as if she knew that he knew, and he felt his imaginary glass wall dissolving.

III

"What are you smiling about?" she said.

"I was just thinking that we —"

The outer door hissed. Dr. West's muscle contracted like a criminal's caught in the act. The inner door shoved open.

"May I come in?" said the Recreation Officer, already in and sniffing his toothbrush mustache in his most characteristic gesture. He had an old face, but his mustache and hair were black with dye. "I can come back later." His unreadable gaze bounced off Nona's face, and he stared at Dr. West. "I've been asked, shall we say ordered, to search for a small useless, uh, item in your suite."

Dr. West grinned. "Nona told

me it was a hypo. Feel free to search away. I'll help any way I can, but I haven't got a hypo for you. I wish there was a prison grapevine so I could tell you who's got the hypo."

The Recreation Officer failed to smile. To Dr. West's surprise the Recreation Officer's usually sly sense of humor was gone, blank.

"Would it be possible to start with another suite?" Dr. West asked apologetically. "This is my therapeutic hour. You said you could come back later."

"No, I'm already here, so I'll start here," the Recreation Officer replied. "She can vacuum this dirty floor whether I'm here or not."

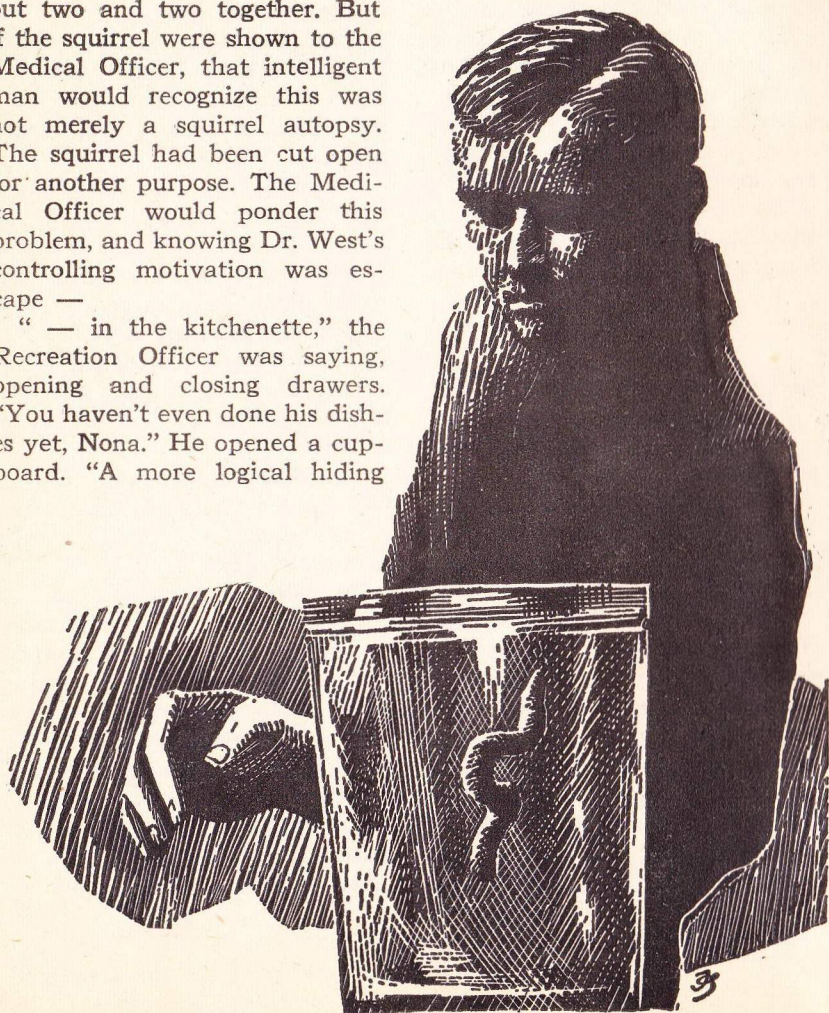
Dr. West tried again. "Sir, if you could come back later, after Nona's gone — I need to talk with you alone."

Dr. West was careful not to glance toward the compressor. Beneath it the dissected squirrel was hidden, and Dr. West was afraid Nona's reaction would be revulsion when it was found. He thought the Recreation Officer's reaction would have been no more than mild interest if the dissected squirrel had been in plain sight on the work counter.

Unfortunately, Dr. West had concealed the dead squirrel, as if guilty of something. Now

the Recreation Officer's reaction when he found the bloody package might be suspicion. Dr. West knew the Recreation Officer lacked the medical background to put two and two together. But if the squirrel were shown to the Medical Officer, that intelligent man would recognize this was not merely a squirrel autopsy. The squirrel had been cut open for another purpose. The Medical Officer would ponder this problem, and knowing Dr. West's controlling motivation was escape —

" — in the kitchenette," the Recreation Officer was saying, opening and closing drawers. "You haven't even done his dishes yet, Nona." He opened a cupboard. "A more logical hiding



place for a hypo would be — the bathroom.”

Dr. West began to perspire. He knew he needed to maneuver both of them out of the suite in order to dispose of that dissected squirrel. If the Recreation Officer continued searching, eventually he would discover the body of the squirrel.

The Recreation Officer spent a surprisingly long time banging around in the bathroom. All it contained was a medicine cabinet, toilet, basin and tub. The bathroom was located in the narrow inner end of the suite.

Whenever he had sat in the

tub Dr. West could hear the eight elevators humming up and down the central shaft of the cylindrical tower. His thirtieth floor suite was shaped like an eighth of a pie. The center of the pie was occupied by the huge open shaft, which contained the elevators and the air-conditioning ducts. The elevators were code-controlled. To escape without an elevator would be a long fall.

The Recreation Officer emerged from the bathroom, smiling beneath his toothbrush mustache. “I took the liberty of searching your medicine cabinet.” His smile widened. “I deduce from the bottles and tubes that you suffer from piles.” His smile spread so wide it almost appeared malicious. “Not a very romantic ailment for a world famous Arctic adventurer. Or for a convicted mass murderer.”

Dr. West blinked with surprise. Until now, the Recreation Officer always had treated him with human respect, never mentioned his crime.

“You’ve murdered more people,” the Recreation Officer remarked, “than the rest of the Students in this tower combined, and you top it off by stealing a worthless one-shot hypo.”

“I haven’t got your hypo.”

“You’re a disgusting example of futility. Do you know, if you’d simply applied for a hypo, if you



needed a hypo, I would have purchased you a dozen. But during your second or third night in the tower you didn't know that yet, did you? So you stole one."

Dr. West did not reply. He was wondering if the Recreation Officer had just planted a hypo in the bathroom. From a friend, the Recreation Officer inexplicably had turned into tormentor.

"I brought you scalpels, didn't I," the Recreation Officer persisted. "Enough scalpels to butcher a dozen women."

"Please, sir," Nona protested.

"Don't you approve of humor?" the Recreation Officer asked. "You and I are both on the Staff — to assist in therapy, to make the Students happy. Isn't that right?"

The Recreation Officer strode across the room toward the entry and kicked Dr. West's bed. "What do they expect me to do, split the mattress to find your hypo?"

"I haven't got the hypo." Dr. West stepped forward, his sweating face twisted in an answering smile. "From what I've been told, the policy of this prison, excuse me, educational institution, toward the so-called Student is —"

"— to treat the disturbed stu-

dent with respect", the Recreation Officer interrupted in a singsong voice. "Make him feel this is home. Rebuild his feeling of inner worth. Nona, have you been reciting your book to this filthy murderer?"

"No, she hasn't, Dad," Dr. West retorted, smiling harder, losing control. "You did, remember? Where's your warm Father-Image today? The student is to be drawn into a warm family-like relationship and, I quote, encouraged to lower his defensive barriers. In the Ottawa Reformation Center he is considered reborn. It is the purpose of the Staff to offer the Student so warm and reassuring an emotional environment that he will find the inner support he failed to feel in his childhood. Strengthened, basically changed, he can return to society. Isn't that right, Dad?"

"Back off!" The Recreation Officer spoke like an angrily barking dog. "Because you're younger, stronger, more sarcastic doesn't mean you can't be spanked! Figuratively spanked — no. Literally spanked!" He walked away from Dr. West, lifted the top of the insulated hibernation cage and plunged his arm into it.

The one conscious squirrel jumped aside and squealed with fright.

For the last minute, Dr. West had been considering goading the Recreation Officer to such anger he would stop the search and rush out of the suite. But now Dr. West's heart was hammering, his fists clenched, and he realized his own self-control was so uncertain that the Recreation Officer might be successfully goading him. Perhaps the Recreation Officer's strange behavior was intended to goad him to violence. Then would he be transferred? Was that the Recreation Officer's intent?

Nona, her face pale, her lips narrow, was shaking her head in warning at Dr. West. Silently they watched while the Recreation Officer distastefully lifted out a handful of sawdust.

"What a stench! I noticed it as soon as I entered your suite. Are you sure they're not decaying instead of hibernating?" The Recreation Officer reached deeper into the cage. "This stench, is it to discourage us from looking for the hypo? Is it dead?"

By the tail, the Recreation Officer raised a hibernating ground squirrel. "Since you formerly were an expert on Arctic ecology, among other things, I would have expected you to play with something more typically Arctic. Such as those beastly little lemmings which you reputedly compared to Eskimos."

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"To Esks. I explained to you the differences between Eskimos and Esks. I talked for hours when you listened so sympathetically, Dad," Dr. West added savagely. "You ought to be intelligent enough to differentiate between Eskimos and Esks. As for lemmings, they don't hibernate."

The Recreation Officer shrugged, dropped the limp squirrel back into the cage. "Dear me, you're right. You told me no Arctic animal truly hibernates — except these putrid ground squirrels. I'm not going to search through this stinking mess for the hypo. I'm going to recommend that the contents of this cage be emptied down the incinerator."

"I haven't got the hypo," Dr. West repeated, watching the Recreation Officer step to the wider end of the suite where the compressor chugged erratically.

Concealed under the compressor was the dissected squirrel. The compressor unit vibrated against the white concrete wall.

The wall was smooth concrete, slightly concave because it also was the outer wall of the tower. Like a cylindrical concrete grain elevator, the tower had no windows, and its exterior construction was both economical and escape-proof, and functional in other ways .

The Recreation Officer glanc-

ed from the compressor to the concave wall spread out behind it like a wide-angle screen. "This noisy compressor must intrude into the corner of the picture. Or do you never turn on the projector any more? For emotionally disturbed students like you I recommend a minimum of two hours per day." The Recreation Officer smiled infuriatingly at him.

IV

Dr. West stepped violently toward the compressor, the Recreation Officer and the blank wall. At first, while recovering from his appendectomy, he had lain for hours watching the moving scenery on that wall, his only window. Trying to ignore the subliminal cartoons pressing him back against childhood, his favorite escape had been following movies of the surf flashing white along the Northern California coastline on the wall. At first he'd stared helplessly. The artificial window had been his only release from claustrophobia.

"Nona, don't leave," Dr. West said, without looking back, knowing she was still sitting on the coffee table. This caused the Recreation Officer to glance back at her.

Dr. West's hand darted into the compressor case.

The compressor unit consisted of an electric motor humming at high R.P.M.'s and revolving a series of larger and larger gears, the largest turning least rapidly and most powerfully, forcing the piston of the air compressor in and out no faster than a frightened heart. Last week, when Dr. West had assembled this jerry-built contraption, he had set an oiling can to drip at five minute intervals on the moving elbow of the compressor, and now, in this instant, his hand reset the nozzle of the can to dribble rapidly.

As the Recreation Officer turned back to the compressor, a fine mist of oil rose against his blue uniform. Dr. West already was walking away.

There was a moment of silence as if the Recreation Officer had not yet realized what had happened. "Your damned machine is leaking! There's little droplets all over my coat."

At this, Dr. West turned back. "Either oil or coolant. If it's coolant — the coolant is strongly alkaline, irritating to the lungs." He wrapped his handkerchief protectively around his hand and rushed at the compressor, turning his head aside, as if from poison gas, holding his breath while he readjusted the oiler to its former rate of one drop of oil every five minutes. "The coolant will decompose cloth. It should

be soaped off the skin as soon as possible."

The Recreation Officer sniffed the back of his hand and glared from Dr. West to Nona. "The least you could do is help me search," he accused her. "Damn, my hand is burning!"

Seated on the low coffee table, Nona stared down at her own hands, cupped on her lap. "Sir, my job's to maintain a close relationship with my Students. The Administratrix never asks us to involve ourselves in searches."

"You have the soul of a — They let anybody into Civil Service these days!" The Recreation Officer dashed out of the suite, scrubbing his hand with his handkerchief, and the elevator hummed.

"I'm sorry," Nona murmured. "He's never acted before as if making a search was — beneath his dignity. Normally he's a nice man. Maybe he's having problems outside —

"Oh, sure. Nice man." Dr. West sat down on the sofa in order to stop shaking. "The Staff has to stick together."

"I'm telling you the truth. I've never seen him like this." Suddenly she smiled. "On duty, we're supposed to be saints and let you Students have all the tantrums."

Perched on the low coffee table, she pressed her legs together and tugged down at her skirt. She was peering toward the compressor. "Is that a Christmas present underneath? Sort of green shiny paper."

"You'll have to wait till Christmas to find out," Dr. West said and reached forward, seizing her hand before she could stand all the way up and escape to look under the compressor.

Pulled forward off balance, she raised her eyebrows as she smiled at him, and plumped down beside him on the sofa. "You didn't need to let go of my hand."

Dr. West grinned with embarrassment, knowing he should try to get her to leave the suite as quickly as possible, so he could dispose of the squirrel. "Do you think my ex-buddy, the Recreation Officer, is likely to pop back in here unannounced?"

She shrugged, jiggling her shirt waist. "He might." She smiled, glancing at him from the corners of her eyes. "I don't think he will, though. He probably went down to the basement to wash and gulp coffee and brood. This was supposed to be his free hour. That's why he was assigned to help search. Next hour he has to be smiling again and sympathetic because he must face his next appointment with another of you exasperating Students."

"Exasperated is the word. I feel like I'm in a fishbowl." Dr. West jerked his head at the Ceiling Lens.

Nona looked up, then down as if she was staring through thirty floors to the basement. "Privacy is mostly in your head. There are 240 screens down there, but only one observer on duty since the budget cut. Mainly the observer keeps his attention on the red-tagged screens, the new admissions. After all, they're the men most apt to set their suites on fire or slash their wrists or — uh, develop appendicitis."

Dr. West almost smiled at that. Then he asked a leading question. "When the clock says it's night, and the luminous panels dim, and finally I turn out my reading light, there's still a dim red glow in the dark. I deduce I'm also spied on by infrared transmission?"

"You are a bashful one! The night observer has only one set of eyes. He's worked here for years, and he's seen everything. He's so bored, he's slyly wired one telly to watch outside hockey games." She giggled. "It takes my own inside alarm system to get any protection from him."

Dr. West laughed in surprise. "Inside alarm? Don't tell me, if a buxom member of the Staff is grabbed by a Student and squeez-

ed, does that set off her built-in electronic alarm button, gongs clanging, red lights flashing — "

"You tease! That depends on the member of the Staff. Nona stood up unexpectedly.

As if in pain, Dr. West leaped to his feet, reaching for her elbow. But her other hand pressed lightly against his chest, and her gaze shifted from his eyes to someplace over his shoulder.

"The clock says your time's up."

"Listen, Nona, seriously, I need you now." He was startled that he was begging.

"I wish I could stay, but I'm hired to look after my students equally. I wish I could stay, but my 11:00-till-12:00 man is expecting me. It's his hour. He's a terribly nervous, disturbed old man. He has no inner resources at all. He's sitting there expecting me — "

"But what about *my* hour? That damned Recreation Officer used up my whole hour bumbling around in here. Listen you wouldn't understand that I've been hung up in — hell. I've been dead until today, and now I need you."

She stepped close to him. "I'll be back tomorrow. Since you're described in the Files as a cerebral type, you can get along," she teased, then added seriously: "I'm so happy you came out of

your withdrawal." She smiled again. "Some silly-billies on the Staff were making bets you would turn into a vegetable."

"A vegetable? Listen, tell your 11:00-till-12:00 man I'll trade my whole hour tomorrow for thirty of his minutes today, now."

"I'm flattered — I think. But he's unadaptable. I'll dicker with him for you, but don't hold your breath. I won't be back for at least a half hour, if at all — lover."

"Dammit, Nona," Dr. West almost grabbed for her, then laughed wryly, trying to hide himself behind a sense of humor. "You're playing with dynamite. Nona, is that what you love — playing with human dynamite?"

"That's my job. I'm supposed to civilize you." She winked and went out through the hissing door.

V

Alone, but perhaps not unseen, Dr. West was careful not to glance at the Ceiling Lens. To conceal what he wanted to do, he knew that turning off the lights in the suite during waking hours would be the wrong move. That simply would attract the attention of the observer. Innocently he ambled toward the compressor, knelt and removed

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the gleaming green package, and walked to the sink. He went through the motions of washing the dishes Nona had neglected to wash, and in the sink he cut the ground squirrel into quarters and ground it down the disposal, all the while bending over the sink, obscuring his actions from the observer, who might be watching, but more likely not.

Dr. West did not glance at the hiding place of the steel needle he had removed from the hypo. The needle was sticking in the fiberboard partition between the kitchenette and the bathroom. He had extracted the nail which originally supported the lightly framed print of a voyageur portaging a canoe. The screw-in base of the hypodermic needle now served the same purpose as had the head of the nail. Thus the needle was concealed in plain sight.

Two weeks ago, Dr. West had smashed the relatively large plastic plunger of the hypo for which they now were searching and flushed it down the toilet.

While in bed after his appendectomy, he had confused the nurse in her hypo count. Like the old shell game. Having stolen a full hypo rather than the empty they thought was missing, he had injected its content into his empty nose-drops bottle, which stood on a shelf in the medicine cab-

inet next to his eye-drops bottle, which he had filled with a second sedative injection the following night while the nurse's attention was distracted by a white wad of paper he had ricocheted off the concave wall — after telling the nurse he had seen a white mouse in his cell.

Now Dr. West visualized the Ceiling Lens above his head without looking at it. If he stacked the kitchen chair on top of the coffee table and climbed up and taped a paper towel over the Ceiling Lens, the blank-out probably would attract the attention of the observer, who might send someone to investigate which would be most embarrassing.

A shy and difficult man, Dr. West wanted privacy. He needed privacy.

Even the bathroom lacked privacy. There was a separate Ceiling Lens in there. Dr. West blinked in realization. The Staff all had said there were 240 telly screens in the basement. The tower was 30 stories high with 8 pie-shaped suites to a floor, so that there must be 240 suites. But there were *two* Ceiling Lenses per suite, one in the main room, one in the bathroom, so why weren't there 480 screens in the basement?

Wrong! He had forgotten the *third* Ceiling Lens in the entrance passageway between the

inner and outer doors. It was to reveal attempted escapes or ambushes by Students who had gained the code for opening the inner door. Why weren't there 720 screens in the basement?

As his hypothesis germinated, Dr. West smiled. One Ceiling Lens was in the main room of the studio apartment, the second in the bathroom and the third in the entry hall next to the bathroom in the narrow end of the semi-pie-shaped suite, a total of three Ceiling Lenses per suite. Therefore, there should be 3 times 240 telly screens in the basement, a total of 720 screens. But there were only 240 screens. Dr. West squinted, trying to visualize how the designers of the remote T.V. system managed to project 720 pictures to only 240 receiving sets. He nodded. From each suite 3 pictures were transmitted onto one screen.

In televising baseball games, it was customary to show the pitcher winding up and at the same time in the corner of the screen show a separate picture from a separate camera of the runner taking his lead off of first base.

Dr. West assumed that the pictures from his bathroom and from the entry hall were projected as overlaps in two corners of the main picture from his suite. Thus, very likely there

were two privacy spots within the main room of his suite. But which two corners of the four corners of the screen, which two corners of the main room would contain this privacy overlap?

Unfortunately, the shape of the main room was not square and could not fill a square telly screen. From the concave, white outside wall of the suite, the two side walls tapered inward. The slice of pie narrowed where the bathroom and the entry hall stood side-by-side, both abutting the central elevator shaft.

If, on the telly screen, the bathroom and entry hall were moved down and out to the corners of the screen, there would be only a partial overlap because the main room was narrowest at the top of the screen. But there still would be some overlap — some place to hide from the Observer.

Dr. West walked into the bathroom. It was about eight feet long. At its wider end, it was five feet wide. He glanced out at the kitchenette in the main room. On the T.V. screen, if the bathroom were moved down into the unfilled corner of the screen, it would overlap with the china cabinet, the dumbwaiter pipe which delivered frozen foods and his refrigerator.

Since the private actions Dr. West had in mind couldn't be
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conducted in such a small refrigerator, he walked to the other side of the main room, near the inner entry door.

The entry hall also appeared to be five feet wide, and he supposed it was the same length as the bathroom, eight feet. He looked back. The coffee table, sofa, easy chair and standing lamp were grouped near the center of the main room. Beside him, his bed already stood against the side wall, but exposed because it was too far down on the T.V. screen. It was too near the wide, white projection wall to be in the telly overlap.

Standing with his back to the bed and his calves pressed against the foot of the bed, imperceptibly Dr. West pushed the bed along the side wall until the head of the bed was near the entry door. If he moved the bed and closer, Nona wouldn't be able to squeeze through the partially blocked door. Nevertheless, virtually the entire bed should be concealed by the overlapping picture transmitted from the entry hall. In the upper left hand corner of the telly screen in the basement, the bed would be hidden . . . he hoped.

Because he was by training a conscientious man, he began to cross-check. He stared at the

entry door. Perhaps, the Ceiling Lens in the entry hall only operated when someone was entering? Not likely. More threatening was the probability that the suite could be scanned. By throwing a switch, the Observer could shift the overlapping pictures from the upper corners of the screen to the lower corners. With so many unknowns and variables, there might be even more embarrassing possibilities. "Dammit, there's more than one way to skin a cat."

Dr. West smiled with excitement, hurried across the suite to his work counter and collected a ball of twine, a scalpel and some safety pins. On his trip back to the bed he dragged his wooden work chair. Listening for the hiss of the outer door, he pushed down the pillow and set up the chair on top of the bed. He tied two chair legs to the tubular iron head of the bedstead.

Hastily, he stretched a string from the high back of the anchored chair down over the bed to its tubular iron foot. Fumbling with knots, spreading blankets over the string, pinning blankets together, pinning edges of blankets to the mattress, he worked as rapidly as a camper when the raindrops begin to fall.

His face contracted with uncertainty. That two-faced, un-

predictable Recreation Officer might return —

The outer door hissed, and Dr. West jumped like a man awakened by an alarm clock. Across the suite he carried the scalpel he had used to cut string to the work counter and turned, breathing hard, as the inner door opened.

"Surprise," she laughed. "My 11:00-till-12:00 man was so grumpy when I asked him why he hadn't shaved he said I was a worse nagger than his daughter. My heavens, he would have given you the rest of his hour. But he'll feel differently tomorrow, so I traded him your hour tomorrow for his 45 minutes left. You're looking at me like my eye-shadow's on upside-down." She giggled. "I talk too much. I don't know why I should be in a tizzy, but whenever — well, we don't really know each other. We're friends, but we're still sort of — strangers."

As Dr. West walked toward her, she stepped sideways, and the back of her leg came in contact with the bed. She whirled, startled.

"My heavens! A tent!" She pealed with laughter. "A tent," she giggled. "I'm going to have to explain a few things to you. You're so new here you don't know the rules." Then her

laughter stopped. "I'm sorry. I'm not laughing at you. I'm laughing at the tent. I think it's cute."

Dr. West took hold of her upper arm.

"You don't need to look so serious and earth-shaking," she breathed. "Life should be fun. It is fun, a tent! You are the most ingenious man I ever did see. Safety pins! A tent flap. Wasn't Omar Khayyam a tent-maker, too?"

She put her head inside the tent. "Oops, am I psychic? I never did make your bed. I talk too much, don't I?" Head first she vanished into the tent, as Dr. West's hand guided her.

Forgetting even a sidewise glance at the door, Dr. West followed, the tent shaking as he disappeared under the blanket room. From the Ceiling Lens only the tent was visible.

"My heavens," her voice emerged from the tent, "a chair for a tent pole! Not so fast! It's crowded in here. You have lots of ingenuity, but . . . Oh."

"I'm sorry, such a hurry," Dr. West's voice gasped. "More than a year I've been alone, Nona, trapped in jails alone."

"That's all right, lover. Let me rub your neck, your back and in a little while —"

"A year is so long for a live man. No, a dead man."

"Well, now, I wouldn't say you were quite dead," she giggled.

"But a whole year! A year passes. What's a year." He laughed wryly, "I shouldn't feel sorry for myself. Those Mars expeditions were gone far more than a year, and married men at that. Listen, I feel better. I can take anything."

"Now you're cheering up. Already you're changing for the better. I may not accomplish much in life," she said, "but at least I'm accomplishing something when you smile, student. Squeeze me. This your chance to change, and you'll change, really change and return to the world. We Canadians do like to think we're somewhat enlightened. After you graduate, lover — remember me."

"Graduate, hell!" Dr. West's voice blurted. "Sentenced to life!"

"No, you're not. You can't be. All Ottawa sentences are indeterminate."

"I'm not a fool! I know I'll never be freed."

"You have the same right," her voice exclaimed unsurely, "to graduate as any other student. I'm sure you must. Why else would the staff go to all the trouble and expense of getting you all that equipment, the cage,

the compressor? It's occupational therapy. The Recreation Officer — "

"That two-faced psycho? Not only did he try to humiliate me in front of you, he showed a vicious attitude toward you."

"Please," she protested, "you already have enough adjustment problems without developing a persecution complex. The Recreation Officer just had a bad day. Even Recreation Officers are human."

"He's not your husband, is he?"

"What? What a stupid and unexpected question! Certainly he's not my husband. Just because I have a ring on my finger doesn't mean — well, why don't you simply try to enjoy life here in your suite."

"And don't ask personal questions," Dr. West's voice filled in.

"No, I'm happy to answer personal questions. We're in an awfully personal position right now, and you can get as personal with me as you want — if you'll promise me you'll let the Recreation Officer start out again tomorrow with a clean slate. All is forgiven?"

"Could it be that he's jealous of me?"

"Uh-uh. I'm also Den Mother to five other students. He's never acted this way before. I'm

sure he's not jealous. I only know the man in a professional way, and he's rather old and quite professional."

"Not today he wasn't professional," Dr. West's voice insisted, "He didn't even finish searching my suite. What has he got, a triple personality? At first, after my appendix operation, he showed no real interest in me. He wanted me to take up microscopy as a hobby merely because Tower #3 happened to have an unused microscope."

"Yes, my microscope boy graduated. He has a technical job in Saskatchewan Oil Fields," she said proudly. "Oil core drilling samples are full of the tiny shells of — He wrote me a beautiful letter."

"I told the Recreation Officer, for my occupational therapy I didn't want to weave baskets," Dr. West's voice swept on. "I wanted to review a line of research begun when I was Director of Oriental Population Problems Research at the University of California."

VI

"**M**y heavens, what has population problems got to do with hibernation?"

"Nothing, except that birth and growth and hibernation all are dependent on glandular activity.

GALAXY

My original medical specialty was endocrinology. Glands. But as I was saying — all of a sudden the Recreation Officer took a personal interest in me, went to great trouble to acquire equipment for me, told me how he cut through red tape. We had long talks. He was interested in the squirrels. I thought he was my buddy."

"He just got up on the wrong side of his bed this morning. His bunk, perhaps," she laughed. "He's a retired naval officer. Your navy, by the way. But he's Canadian born."

"Born in hell," Dr. West's voice muffled.

"Mmm, that's better. Don't nibble too hard. Forget, mm, everything. Think about me. Has all that isolation made you too sensitive? See — you're ticklish. Lover, that big white square, that scar on your leg —?"

"You're warm and smooth, the end of the world."

"What do you mean by that?"

"I don't know," Dr. West's voice breathed.

"My heavens, you're certainly trying to find out," her voice squealed in delighted alarm.

Dr. West's voice hoarsened. "Listen, I feel, Nona, Nona —"

"Yes, that's it, wonderful —"

From the tent for a little while there was no coherent conversation and finally quietness.

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"Darling, so nice —" her voice sighed. "So relaxed."

"Nona, I feel wonderful," Dr. West's voice laughed. "Let's you and me break out of this prison."

"Now that you've regained your self-confidence," her voice teased him. "Don't get so overconfident. I still work here. I like it here. You are my student, my job."

"To charm us cons away from reality?" his voice laughed.

"Would you rather be in one of those gigantic penitentiaries in the States — with 5,000 criminal types, all supposedly male? March, march! No privacy. Fellow prisoners to teach you better ways to stick up filling stations. Guards who shave and aren't as — ahem — sympathetic as I am. Now would you trade places?"

"You do have nice smooth skin," his voice exhaled. "But here I've never seen another prisoner. When I tapped on the walls, nobody answered."

"Which would you rather have?" her voice insisted.

"We're really all in solitary, the 240 men in this tower, and in how many other towers."

"Ten towers," she said. "It's not solitary unless you think of it as solitary."

"2,400 men. How many women? Divide by 6?"

"You always try to be too precise," her voice laughed. "Our men are changing and graduating all the time. The average stay is less than a year. Thousands and thousands." Her voice grew serious. "I think of a stream of men being reborn."

"I think of thieves and murderers, criminals, myself, crouched in their cells waiting for you." His voice rose. "Listen, I'll never get out of here. For political reasons, I'll never make it."

"Oh shut up. Don't act so egotistical. If you want to act like a pessimistic, guilt-tortured little boy, go ahead and roll in your own mess." In the blanket tent rose the bulge of a head. "Until you take a more positive attitude, you jolly well won't roll on the sheets with me."

"You mean it, don't you?" His voice softened, then exclaimed with wry laughter, "I understand too well! So simple but I don't know how effective. Solitary confinement is the stick, and you're the carrot. I've been given donkey ears."

"You stubborn donk," her voice laughed, "don't you see any further than your big nose? You men in here can't be deeply changed by rewards and punishments. Outside, carrots and sticks certainly failed to civilize you or you wouldn't be in here. All your life you've been rewarded

and punished but you wouldn't conform and you ended in here."

"I need to get out. There is a great need for me to get out. Outside, the Eskis are —"

"Sweet, harmless, law-abiding people. There's no use talking about Eskimos in here. Listen, we want you to like it in here. Lover, when you adjust — We love you."

"My God, Nona, are you going to give me the Family bit? The Recreation Officer already shoveled it on me — during his friendly period." Dr. West's voice rose with anger. "The Staff is my family. I am provided with a new childhood, loving and secure, so that I can grow up to the world again. Strengthened by my secure second childhood, or is that the wrong terminology? With new inner security we criminals graduate from our prison families into the world to be law-abiding and patient and sympathetic with our fellow man. Bugles, please!"

"It works. The family-group produces the —"

"Yes, Mom. But Dad was nasty today. Was he cranky because he thought I wanted to get in bed with you?"

"You don't need to be that sarcastic," her voice said.

"I'm sorry. But my eloquence

GALAXY

gets — poisonous. How can you bring yourself to lie beside a maniac like me? The Civil Service ought to give you a medal. If you're supposed to feel motherly toward me, you don't have to. Just leave me, please."

"I love you."

"I should accept that as it is, now. You also love five other men in five other suites."

"Yes, I love men. I love women. I love my children. I try to love everybody."

"Next you'll tell me you also have a husband to love. I was hoping — and I wasn't so jealous of my five invisible cell-mates," Dr. West's voice stammered, "but I was hoping that ring on your third finger left hand was just for show."

"Every evening after work I take the monorail back to the apartment district. Did you get much of a look at Ottawa?"

"I saw those angry people waving signs at me."

"I have three children, three little girls. The oldest, she puts the T.V. dinners in the oven before I get home. After supper I help them with their homework. On the rug even the second grader mutters at her homework. The older two have begun to giggle about boys, and the oldest is only in sixth grade, my heavens. Then we watch TV, and no one wants to go take the first bath.

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When my angels are asleep, I think — they're another day older and stronger and wiser, I hope. I sit watching TV. Me, I'm another day older. I crawl into bed."

"I wish I were there with you."

"You are. Squeeze me hard. You're in bed with me now."

"That wasn't all that I meant," Dr. West's voice replied. "At the moment I feel more protective than amorous."

"You needn't be. I can get along very well, thank you," she said. "Except when my children were helpless babies, I always worked, worked as an I.B.M. operator, even when my husband was working." Her voice for the first time rose in anger.

Her voice tried again more softly. "My husband was a nice guy, he really was. I didn't just love him because he was the father of my children. He was a sweet guy, not scheming, not adjustable the way we have to be. Everything's changing faster and faster, and he got quieter every time they automated away his job. What did I do? Did I give him inner strength? No. I began to earn more money than he did. He said less and less. When I brought my — our kids home from my father's into the kitchen, I ran to turn off the gas."

Her voice sank. "I tried to give him artificial respiration.

"It wasn't until then, after then," her voice laughed unhappily, "I learned what brief animals we are. You're all schemers. If you and I were Outside, don't expect a dinner date downtown and a cinerama will make me — owe you anything just because I haven't got a husband. You understand me?"

"So you got the perfect job here. No, I'm oversimplifying you."

"Yes, I'm simple. I'm just a simple bundle of mother love. Always cheery. Pardon me for sounding cynical with you, but my other students happen to be such uneducated children. They wouldn't understand."

"Or notice you're not perfect, I hope," Dr. West laughed. "I hope not. You're our only hope. Don't hurt us. You are too powerful. Without your personal love this would be solitary confinement, and we convicts would go insane. Right now you are miraculously changing me and five other men."

Dr. West's voice suddenly probed. "If any of your prisoners fail, I mean, are released and then hold up a liquor store, do you have such a masochistic and guilty view of yourself that you believe you are respon-

sible for the failure of this man?"

"I don't understand you."

"As with the failure of your husband."

"What are you saying?"

"Nona, do you think you are so godawful powerful that if we cons fail it is because of something you did or didn't do?"

"I don't understand. Not one of my students has become a recidivist. I've worked here four years. Twenty-two of my students have graduated. None have had any trouble with the law."

"You misunderstood my question."

"Of course, I'm holding my breath about a few of my boys," she said. "They all get pretty fair jobs because we've retrained them, and the government subsidizes, pays their employers during the first year."

"So they get along without you?" Dr. West's voice laughed suddenly. "Marry girls just like you?"

"You are a flatterer. My students write to me, some of them, and I save the letters and photos. One boy is going with a woman a little bit older than he is, but very pretty. I shouldn't have said that. What I meant to say was she looks enough like me to be my sister."

"No doubt the government wishes you could be divided more than six ways."

"Silly. The whole purpose of the government's reformation policy is to help them—you—stand on their own feet when they go Outside. Someday, you'll — now you stop that," her voice sighed languidly.

"Nona, you're so warm, so smooth — "

"I think you just want me to stop preaching at you."

"Nona, what I want — "

"Lover, turn your wrist the other way. My heavens! If your wristwatch is correct, and I'm sure it is, your borrowed time is up."

"You aren't going to leave me like this?"

"Sort of let me up, lover. Where's my bra? You're lying on it."

"But I was just beginning."

"But you've no more time today," she laughed. "Be here tomorrow? On second thought, I won't be back till Wednesday. You traded away tomorrow. Oh, there's a run in my stocking. Now stop that! You can wait till Wednesday, lover."

The blanket tent shook, and Nona's legs swung out. She fumbled for her shoes. "Where's my comb?" Zipping up the hip of her blue skirt, she clicked on high heels to the door. There was a departing hiss as the inner door opened and closed. Dr. West was alone.

Dr. West emerged from the blanket tent. He stared blankly at the huge cage where the Arctic ground squirrels slept in artificially induced hibernation. Then he smiled and squinted up at the artificial afternoon in his suite.

The luminous ceiling panels were synchronized to a clock and rheostat. There also was an OFF switch, but if he left the panels alone the evening would come gradually, and then night. Then Tuesday. On Wednesday morning at 10:00 —

He smiled down at the coffee table where she had sat looking up at him. He hurried to dismantle the tent, folding the blankets, his pulse racing, his face hot with suppressed memory. For an instant he pictured her inside the tent, moving. The view was too powerful, and he laughed and shook his head and blinked his eyes. "Wednesday, Wednesday, hurry up, Wednesday."

He vaulted over the couch, grinning. Tomorrow was only Tuesday but — "When Tuesday's here, can Wednesday be far behind?"

He reached for a glass tube on his work counter and grinned at the bunsen burner in his lab set up. He felt young. If he soft-

ened the glass tubing, bending, twisting the glass, he could make something for her. "A glass giraffe to make her laugh?"

Behind him, the inner door hissed open. With a surge of warmth, wanting to believe she had returned already, Dr. West whirled.

"Surprise," the Recreation Officer said. "I'm off-duty now — doctor. Before you get too well adjusted in here I'm to deliver this."

Beneath his toothbrush mustache, the Recreation Officer forced a smile as he flapped down a manila folder on the coffee table. "You wanted news of the world, didn't you?"

"Get out." Dr West stared at the folder with its projecting newspaper clippings as if he was looking at a snake. Obviously it did not come from the Staff. It was from Outside.

"I'm sorry," the Recreation Officer's voice said. "I apologize for my eccentric performance this morning. Nothing personal, really."

"Get out, and take it with you." Dr. West felt no desire to open the folder.

"I'm not trying to frame you, Doctor. I'm the one who should be disciplined — for bringing these clippings into your suite."

"You tried to trigger me to

violence during your so-called search. You tried to wash me out. I assume you're trying again. Get out!"

"It's a pity no one will leave you alone," the Recreation Officer remarked. "Look, we can be frank. I've done two things at great personal risk. One, during my search their morning I disconnected the audio bug to your suite. Two, this noon in the basement I damn near electrocuted myself. Your Ceiling Lens no longer is transmitting. Instead, I've spliced a projector to your transmission line in the basement. If the observer should happen to inspect your telly screen, he'll see what you were doing two days ago. Your screen is showing a replay of your old micro-video tape, 48 hours long. I hope you weren't doing anything suspicious during the last 48 hours since I started my video tape recorder. I hadn't time to review 48 hours of tape."

The Recreation Officer pointed at the manila folder. "In any case, *now* you don't need to try to earn brownie points in here by claiming you don't want to break the rules. No one is watching you. Sit down and read a year's clippings. What has really happened during this year you've been isolated in a series of jails? Weren't you the doctor who was so concerned about the Eks increasing?"

"Right now, I don't give a damn what's happening Outside. Get out."

"She's all heart, Nona really is," the Recreation Officer said slyly. "She's the best woman in Tower #3. I don't blame you for forgetting your purpose in life."

"What are you trying to do? Goad me to break out of here?"

"I don't know. I'm not paid to think. I'm sure this tower is escape-proof. You should be intelligent enough to get yourself moved." The Recreation Officer began spreading clippings from the *New York Times*, *MacLean's Magazine*, *Life*, *Time*, *American Medical Journal*, *Arctic Review*, completely covering the coffee table. "I'm supposed to say to you: hospital or the Cold Room. You're the one with brains!"

The Recreation Director spread more clippings on the work counter and more clippings on top of the insulated cage. "I didn't realize so much had been written in the last year about the Esks," the Recreation Officer's voice went on. "I suppose all of these are from a clipping service. Here's a tear sheet from the *Bulletin of Population Scientists*. Someone let slip — you used to be editor."

"Get out!"

"They didn't tell me exactly why you were discharged from
THE MODERN PENITENTIARY

your position at the University of California or why you returned to the Arctic. But I'm beginning to understand why you tried to infect the Esks. The newspaper accounts at the time of your trial simplified you for the simple minds of their simple readers as simply a murderous maniac. But now the *New York Times* seems to be having second thoughts on the matter."

"Get out!" Dr. West's voice rose with alarm as the Recreation Officer actually did walk out of the suite, leaving Dr. West alone with hundreds of clippings and articles staring whitely at him from the terrifying world Outside.

Dr. West chewed his cheek in self-torment. Until today with Nona he had been preparing for the future with almost suicidal calm. Now he didn't want to take any risks. All he wanted was Wednesday, when Nona would return.

Swaying, Dr. West imagined himself gathering up the clippings, eyes averted. Without reading, he would soak the clippings in the bath-tub, tearing and squeezing the paper into dying lumps. He would not read what other men were thinking about the Esks, the research that must be going on, perhaps the frightened admissions in scientific circles that he might be

In the evening, after supper, Nona played jacks with her smallest daughter on the floor,

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 garden location,
 ally beginning.
 are intensify
 nation and ick-
 you consult a doctor.
 cut flowers by several days
 proper care.
 on an insecticide when disease
 or may be the problem. Under
 of no danger, no amount of
 summer will help the situa-
 caused by any one or a
 combination of the following
 ture, sufficient soil mo-
 Fungus disease.
 Insect damage.
 Fertilizer or other chem-
 burn.
 Inadequate spring ferti-
 tion. Lack of sufficient
 proper soil acid-
 mowing.

while the Tuesday TV news blared half-heard everyday topics: the Maoists, unemployment, the Third Mars Expedition, hockey fights, the underprivileged Eskis who were being resettled in Tibet.

"Mommy, your new hair-do is so pretty."

At this, Nona laughed with pleasure. "Now go to bed." And soon she slept herself.

Wednesday morning at 10:00, Nona entered Dr. West's suite with her hair up and gleaming and her heart beating unexpectedly. She stopped.

Stripped to the waist, Dr. West was lying on his back on top of his bed, his jaw sagging like a dead man's, his eyes closed as if he were sleeping.

"My God, he isn't breathing! His heart — ?"

She rushed to telephone the Medical Officer. She ran back. Her frantic hands shook Dr. West's body. The push of her hand against his terribly cool chest stimulated a shallow gasping breath, then nothing.

"Please, please." She flung herself upon him, mouth to mouth, trying to breathe for him, endlessly.

With exhaustion, her own heart was fluttering. Her fingernails were fastened to his cold flesh.

"Keep going," hissed the

Medical Officer's voice. "First I'm going to give him a shot of adrenalin." After awhile the Medical Officer said: "Get off. I'm going to attempt external heart massage."

A half hour later, sweating, the Medical Officer stood back. "This is the man who feigned appendicitis." He stared at the thermometer. "72.6 degrees, and only one or two shallow breaths per minute. If the room temperature sank to 60 degrees, I suppose his body temperature would follow it down. The crazy fool induced this somehow. For a reason."

"Do something for him!" Nona protested. "I'm going to telephone the hospital."

"No, first telephone the Tower Administratrix. She's in command here." For the first time, the Medical Officer looked around the suite and noticed the shambles. "Bloody butcher shop!"

On the work counter lay the opened squirrels. Beside them stood centrifuge and red-brown, stained glass tubing. "He was a murderous maniac," the Medical Officer's voice croaked.

"No, he wasn't. They were hibernating. They didn't feel anything," Nona gasped. "I don't believe he cut them open. I mean, he cut them open with a purpose."

"He bloody well did," the Medical Officer muttered, stooping to pick up a hypodermic needle from the floor. "No plunger. Used rubber bulb from this nose drops bottle. This is the needle from that missing hypo. May have injected a sedative to start the downward metabolic slide."

The Medical Officer's fingers turned the rubber bulb inside-out. "A goo, an extract. Of course he would have been aware that massive injection of any foreign concentration from glandular protein, such as a hibernating squirrel's, will produce a lethal fever reaction. Foreign protein in a human being should be fever. Quite odd. No fever, just the opposite."

"Do something!" Nona's voice protested. "For all you know, he may die any minute."

"This involves legal as well as medical decisions." The Medical Officer appeared relieved when the Tower Administratrix arrived.

The Medical Officer laughed nervously. "Quite diabolically, this man has trapped us between killing him or doing something he wishes." He tried to explain. "Human life is sacred, we say, so we have to save him."

"We have no right to increase his chances of escape. It would be unwise to take him to the hos-

pital building," the Administratrix replied. "I was so long in arriving here because I received a telephone call from the police at the border of the States. They searched the luggage of what turned out to be our Recreation Officer from this Tower — with his mustache shaved off. They found \$10,000.00 in small bills."

"I believe the medical problem the former Dr. West has prepared for us is this" the Medical Officer muttered. "If we leave him as he is, he will die. Alternately, if we attempt to bring him out of his hypothermal coma he will die."

"My God," Nona breathed. "You already shot him with adrenalin to bring him out of it."

"A natural mistake. I'm hoping — it already appears that he has not reacted to it — I hope. Perhaps he has buffered his system against such an eventuality — I hope. As I was saying, if we try to bring him out of it, his metabolic activity will increase. His system will begin to react in a typical defensive manner to the foreign protein, and his temperature will rise. This will increase the violence of his reaction to the protein, further raising his temperature. A self-destructing reaction. Violently, his body will attempt to defend

itself against the foreign protein, raising his temperature higher and higher until he dies."

"No doubt he planned this in order to be taken to the hospital building." The Tower Administratrix asked, "Could we simply leave him here? Assign a nurse."

The Medical Officer smiled at this. "Much more than a nurse is needed if we really believe in saving human life regardless of cost. His life processes should be monitored. I suspect his body now is in a delicate equilibrium. His metabolism is too sluggish to react to the foreign protein. No reaction, no disease. What is needed is speedy consultation with experts in human hibernation research, who may know how, who may have the equipment to bring him out of this condition alive. In the States, hibernation research is being conducted in connection with the Space Program, I believe at the University of California."

"Strange coincidence," the Tower Administratrix said. "Not a coincidence. According to his files this man formerly was director of a medical research program at the University of California. Population control. Do you think, interlocking medical staffs with their hibernation space transit program? . . . An

attorney in California may be waiting to file habeas corpus, legal trickery, bail."

"I wasn't suggesting that," the Medical Officer said. "I simply was suggesting we make a reasonably humane effort to keep this man alive. Surely he can be adequately guarded in our own hospital building. I want to telephone the University of California. Perhaps a complete change of blood —"

The Tower Administratrix shook her head. "Look for a note," she said sharply to Nona. "Suicide. A note."

On the coffee table lay a manila folder. Nona opened it. Empty. Swiftly she looked around the suite.

Something white showed under the huge insulated cage and Nona knelt down, reaching under. A newspaper clipping had fallen behind the cage, and her cold hand drew it out. FURTHER ESKIMO INCREASE NOTED.

"You didn't smuggle this in, did you?" the Administratrix asked Nona. "The Recreation Officer!" The Administratrix turned toward the Medical Officer. "If people outside could bribe the Recreation Officer so easily, how much easier to bribe underpaid orderlies in the hospital! You yourself determined that this student's so-called appendi-

citis attack was feigned in order to get him out of my Tower and into the hospital."

The Medical Officer shrugged. "He'll die here."

Nona's hand clamped on the Administratrix's arm. "You're not going to let him die."

"Is that a question? I'm sure it's not intended as an order," the Administratrix replied. "Nona, this is my responsibility. I know you. I know you're thinking, somehow you failed him. You didn't. This man's urge to escape was too strong. He has taken too big a gamble. He can't escape."

"You can't let him die," Nona repeated.

IX

"The best guarded building outside of the Tower," the Administratrix murmured, "is the Cold Room. There, no decision would be irrevocable. It starts a new problem but —"

"That would be the place for him, the safest place." The Medical Officer stared down at Dr. West. "He ignored my warning when I sent him back his appendix in a bottle. Such powerful motivation is driving him. Alive, conscious, he would try again to escape. I think we are agreed this student has shown himself not amenable to therapeutic reformation. The Cold Room —"

"But he's not an incorrigible," Nona protested. "He hasn't attacked the staff." She turned from the Administratrix to confront the Medical Officer. "You both want to evade —"

"I'm wholly in agreement with the Administratrix," the Medical Officer continued. "The man has shown himself to be dangerous, suicidal. No regard for his own life. How much regard would you expect him to show for yours?"

"I believe he is essentially a good man. Better than you!" Nona retorted, but they weren't listening.

"To preserve his life in the Cold Room," the Administratrix addressed the Medical Officer, "I assume he should be cryo-fied as quickly as possible. The legal steps can be justified post-facto."

"Yes, before irreversible physical deterioration takes place," the Medical Officer apologized in Nona's direction. "In five or ten years when we learn how to thaw them out —"

"You can't do this without a court hearing," Nona cried. "The two of you standing there can't convict, sentence and execute him."

"Execute is an unfair word." Instead of growing angry, the

Administratrix put her arm around Nona. "It's not your fault. I'm sorry you're emotionally involved with this man, but then you're emotionally involved with so many of them. That's why you are so good."

"Please!" Nona stepped back.

"Nona, there's nothing you can do," the Medical Officer said. "Nona, you still have five. Do your best for them."

"You damn weak bootlicker!" Nona cried at him. "Would you tell that to a mother whose baby has died? Would you say, so what, you still have five?"

"If you need to shout, Nona, do so at me," the Administratrix said, lowering her head. "Forget that I am your superior. If you want to accuse me, do so. It is I who must bear the responsibility."

"You did your best for him. You only had him — was it two weeks?" The Administratrix's hand closed around Nona's wrist. "Now go home, take the rest of the day off, tomorrow off, all week off. You are our best. All I can hire is an untrained substitute to take care of your students until you return. But don't feel guilty about your absence."

Without looking at Dr. West's body, Nona walked out of the suite. She went to her 11-00-to-12:00 man as if nothing had happened. The day, the night —

That night on TV a politician stated that the anticipated increase of Eskimos would be a blessing. They could be trained as government nurses and guards. Eskimos needed less pay from the taxpayers. Increase would be good for Canada, which still had plenty of room. Nona could not sleep remembering Dr. West.

In the morning when she entered the Tower, Nona went to the office of the Administratrix.

"Nona, you're looking unwell." The Administratrix stood up behind her desk.

"I couldn't sleep, thinking he may have tricked us." Nona said slowly, "How do you know the body in the drawer in the Cold Room is his? Perhaps his real plan was a switch of bodies."

"Well, surely — " the Administratrix blurted.

"The Cold Room is guarded," Nona pressed on, "the drawers are locked. But last night who worked in the cryogenic preparation room? Who prepared the body?"

"I don't know. One of the orderlies!" The Administratrix grabbed the phone.

"I want to go with you to identify the body," Nona said.

The Cold Room consisted of tiers of numbered drawers. As the Guard unlocked the drawer, Nona memorized the number. When she looked down at Dr.

GALAXY

West's wax-pale face, Nona shivered. "Yes, that is the man."

Now she could tell exactly where he was.

That night in the mono-rail car, to her alarm the Man with the short haircut was not there. The night before, still numb from the terrible scene beside Dr. West's body, she had sat down beside the short-hair-cut Man — deliberately. He had seemed perceptibly disturbed, trapped, hiding behind his newspaper while she told him she didn't want money, she wanted Dr. West to be removed from the Cold Room. "There are thousands of drawers in there," he had murmured. "Find out the drawer number." And he had left the car at the next stop.

Tonight he was not in the mono-rail car, nor waiting at her stop. As she walked past the magazine rack and the soda fountain, a dark young man tried to pick her up. She kept walking. "What is the number?" he was murmuring.

She paused in the crowd by the bus stand. "I won't tell you the number of his cryo-drawer until you show proof," she said slowly, "that there is someone qualified to bring him out of the Cold Room and then out of his — hibernation."

The dark young man seemed

startled. "I'll find out," he said and walked away.

Nona watched him thread his way through the crowd into the icy night. Her face felt old with determination. Dr. West or whoever he was — the man who built the tent with chair and blanket — he was hers, still in her care.

Her jaw hardened. Her teeth felt as if they were about to crack. It was even possible that these two men, short haircut and dark young man, were maneuvering to kill Dr. West. They might be some of those emotional Canadians who waved SAVE OUR ESKIMOS signs and wanted to lynch Dr. West. Or might be rescuers. She knew she must deal with them with great caution.

As Nona stepped out into the razor-sharp Canadian night, the stars were glittering like ice. She tipped her head high. Invisible up there she knew U.S. astronauts were supposed to be coasting on the long voyage to Mars, in their hibernation capsules.

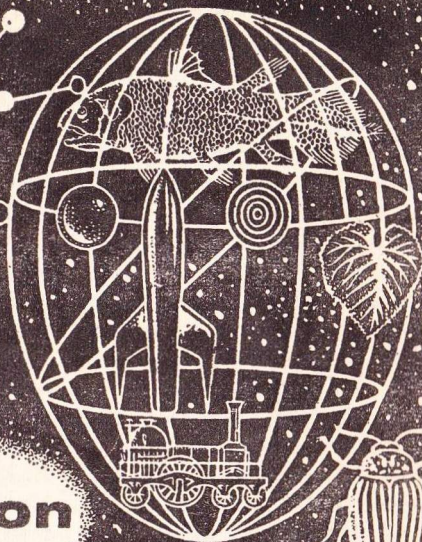
"It truly is possible to rescue a man from hibernation." In the cold she hugged her body feeling hope as when she had carried each of her unborn children.

Breathing hard, Nona stared in the direction of the New Ottawa Reformation Center.

"You'll get out," she whispered. "I'll get you out."

—Hayden Howard

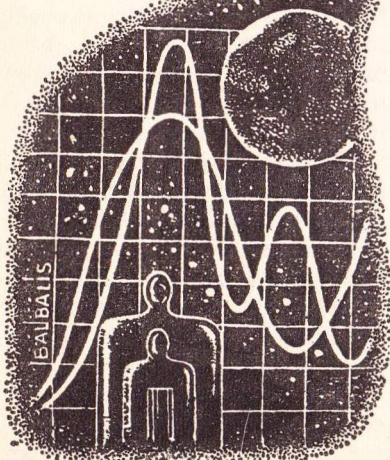
**for
your
information**



BY WILLY LEY

THE SOUND OF THE METEORS

On April 25, 1966, a very bright meteor flashed across the sky over the northeastern states. I am sorry to say that I missed seeing it. But several professional astronomers did see it and they estimated the altitude as about 35 miles. One newspaper reporter who saw it



too wrote a fine report in which he remarked that what impressed him most about the fiery display was its complete silence.

Since the altitude was over 30 miles it would have been miraculous if there had been any sound. But while this particular case is simple and clear-cut there have been many occasions where chance observers of large meteors did report sounds, following immediately or very soon after the flash in the sky. In some cases the sound was compared to a pistol shot, in others to a volley or rifle shots; one observer said that his particular meteor made a sound like that produced by tearing stiff paper. Most observers compared it to plain thunder.

Did they report correctly, or did they ascribe chance sounds produced by something else at what they considered to be the right time to the meteor that was actually soundless?

I once worked with a man whose favorite conclusion was: "at this point we need a mathematical analysis." It became a catch phrase around the laboratory for two reasons. One, it did not matter too much what was under discussion to make him ask for a mathematical analysis and, two, he never made that analysis himself but assigned it

to whoever was within reach and not obviously busy with something else. But at this point I have to call for a mathematical analysis myself . . . but I can assure the reader that it will be simple.

Meteors heat up when they enter the earth's atmosphere because they move so fast that the air in their flight path cannot get out of the way and is compressed, just as if that air were enclosed in a cylinder and the moving meteorite were the piston. Of course, some of the heat generated by this compression is transferred to the meteorite, and at an altitude of 77 - 80 miles it has become hot enough to glow and to be visible. The altitude at which the glow becomes visible is almost unaffected by the size of the body. Only a rather massive meteorite, weighing twenty pounds or more, may penetrate to an altitude of, say, 60 miles before becoming visible. Having a larger mass it needs more time to be heated up to the necessary temperature.

The typical shooting stars, cosmic dust grains, become visible when they are 80 miles up and usually disappear at an altitude of about 55 miles. By then they have been consumed completely. The larger ones — with an original weight of $\frac{1}{2}$ an ounce

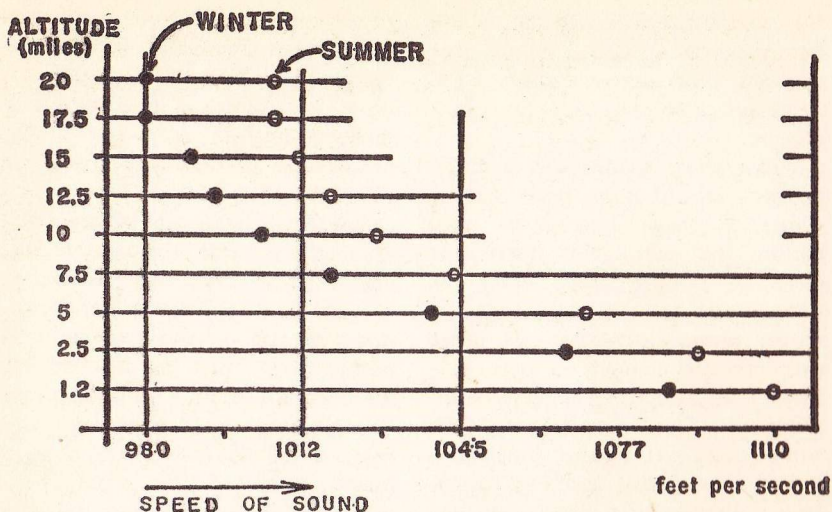


Fig. 1. The Speed of Sound for Altitudes up to 20 Miles
The circles show the average values for summer and winter condition, middle latitudes.

or so — will penetrate to about 40 or even 30 miles above the ground before they are consumed. The large ones with an original weight of a pound or more will actually reach the ground.

Having stated the observed facts about meteors, the next step is to have a look at the speed of sound.

Regardless of what many people think — and even regardless of what they may have been taught by teachers who were not up to date — the speed of sound in air does not depend

on the density of the air but only on its temperature. In warm air sound travels faster. The difference between sea level air and stratospheric air amounts to almost precisely 100 miles per hour. It is because sea level air is denser than stratospheric air that the mistake was made of considering the density a factor. Since it is the temperature that actually counts, the average speed of sound, for middle latitudes, is higher in summer than in winter. (See diagram, Fig. 1.) But for many practical purposes the difference is rather minor. If

we produced an explosion at an altitude of 20 miles an observer at "ground zero", that is, directly below the explosion, would hear the sound 104 seconds after the explosion in summer, and 108 seconds after the explosion in winter. In the table to follow summer and winter conditions have been averaged to 106 seconds for ground zero. For an explosion at an altitude of 10 miles the figures would be 51 seconds in summer and 53 seconds in winter.

But we are not quite finished with the problem of speed of sound and density of the atmosphere. When the statement was made that the speed of sound depended on the temperature it was, of course, assumed that the air is dense enough to carry sound at all. If the density is very low, which means that the molecules are rather far apart, you no longer get any sound waves, even with an explosion that would be rather noisy in denser air. In our atmosphere this is the case for any altitude above

TABLE

Time to Ground in seconds
(rounded off to nearest half second)

Altitude above ground in miles	90°	45°	30°
20	106	148.5	212
17.5	92	129	184
15	79	110.5	158
12.5	65	91	130
10	52	73	104
7.5	39	54.5	78
5	25	35	50
2.5	12	17	24
1.2	6	8.5	12

25 miles. Meteors, then, can produce sound effects only below 25 miles. Of course this calculation contains a few assumed values that might be slightly different in reality; some experts therefore put the limit at 22 miles instead of 25.* To be safe let us deal with a maximum altitude of 20 miles only.

It is now quite easy to calculate how much time will go by between a noise-producing event at a certain altitude and the arrival of the sound on the ground. The table gives the results. In the first column, marked 90°, it is assumed that the observer is directly below the noise source. But in reality this would be a rare event. The line from the noise source to the observer may form an angle of 45° with the ground; or the noise source might be even closer to the horizon, say at an elevation of only 30°. The table

*The density of the Martian atmosphere at ground level was found by Mariner IV to be only 1 per cent of sea level density on earth. The ground level density of the Martian atmosphere, therefore, corresponds to our atmosphere at an altitude of 19 - 20 miles. The Martian atmosphere is barely capable of carrying sound, but the noise of an explosion at the surface would be carried by the ground too.

also gives the times for these two slant ranges.

As can be seen from the table, the sound produced by a meteor at an altitude of 20 miles and 30° above the horizon will need about $3\frac{1}{2}$ minutes to reach the observer. An explosion 10 miles above the ground and 45° above the horizon will be heard on the ground after a minute and 13 seconds. It is therefore very likely that an observer, even if he does hear the sound produced by a high meteor, will not connect the two events. Being used to the idea that thunder follows lightning within a few seconds he will connect any chance noise that occurs within 4 or 5 seconds with the meteor.

But this does not mean that each and every report of noise produced by a meteor was the result of a mistake in judgment. There are a few famous cases where there can be no doubt.

Early in May, 1803, a report that numerous stones had fallen from the sky reached the Academy of Sciences in Paris. Up to then the Academy had been very skeptical about such stories and had tended to deplore them rather than to investigate them. But only a few years earlier Ernst Friedrich

Florens Chladni had published a report on stones and irons that in all probability had fallen from the sky that had made an impression on a number of members of the Academy. So it was decided to send a younger member of the Academy, Jean Baptiste Biot, to the place where the phenomenon had been observed. It was the small town of L'Aigle in the Departement de l'Orne, 80 miles west of Paris.

Biot first established the time. It had been 1 P.M. local time on the 26th day of April 1803. The sky had been clear except for one small cloud. Loud sounds like explosions had been heard for a period of 5 to 6 minutes; everybody agreed that they came from above and since this cloud was the only cloud in the sky it seemed to be the logical source of the noise. Immediately afterward 2000 stones were seen to fall. The largest that was found weighed 18.7 pounds, but most were smaller; the smallest pieces collected weighed less than half an ounce. Biot noted that stones could be found only in an elliptical area one hour's journey in width and about $2\frac{1}{2}$ hours' journey in length. Biot referred to the time it took to walk across and along the area; about 3 by 8 miles.

Since the cloud produced by the explosion of the meteorite cannot have been very large, it probably was less than three miles from the ground to be visible and the noise would reach the ground in 12 - 15 seconds. This time it was nearly vertically overhead. That the noise was actually produced by the exploding meteorite cannot be doubted, the only doubtful statement is that the explosions lasted "from 5 to 6 minutes". This seems too long by several minutes, but might be explained by putting the statements of different observers at different slant ranges together. They each heard the

same set of explosions but at slightly different times.

Another famous old case is the meteorite of Ensis-Heim, in Alsace. It was actually seen to fall, between 11 A.M. and noon on November 19, 1492, and eye-witnesses said that there was a loud crash of thunder and a prolonged noise from afar, a description that sounds very much like what we now know as sonic boom. It made a hole five feet in depth, was dug up and weighed — 260 pounds — and then taken to the village church. It so happened that King Maximilian I was there at the time. He ordered the stone to be brought to his cas-

Von dem donnerstein gefallē im xcij. iar: vor Ensisheim

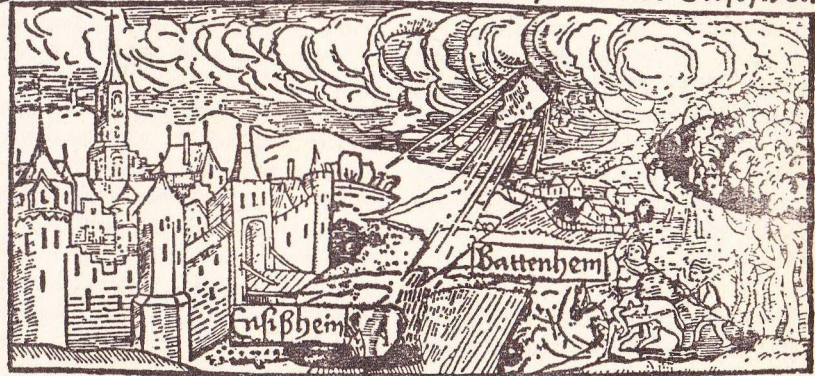


Fig. 2. Contemporary Drawing of the 1492 Meteorite Fall.
The inscription above the picture reads: "Of the thunder stone that fell in the 1492nd year near Ensisheim." The township on the left is labelled "Ensisshem" and the place in the background "Battenhem", — "hem" (pronounced halm) is local dialect for "heim" (pronounced hyme), both meaning "home".

tle where he knocked off two pieces, one to send to Duke Sigismund of Austria and one for himself. Then he ordered the stone to be preserved without further damage in the church. After a long time it was moved to the City Hall; at any event it was preserved for centuries.

At that time there already existed a forerunner of the newspapers of a later date. Bibliophiles know this forerunner under the name of *Einblatt-druck*, a German term meaning one-sheet-print. An *Einblatt-druck* was printed when a special event was to be reported; a large percentage of them deal with comets and the "meaning" of the appearance of one. But this event also rated an *Einblatt-druck*. As customary it showed in a woodcut of the event (Fig. 2) on top, with a description underneath. It would be nice to know whether the artist who made the woodcut had been an eyewitness. If he was, the sky must have been cloudy that day.

To round off this short survey the most recent major fall of meteorites must be mentioned. It is known as the Sikhote-Alin meteorite fall after the name of the mountain range in eastern Siberia where the im-

pact took place. The date was February 12, 1947, and the local time was 10:38 A.M. The sky was cloudless.

Professor E. Krinov of the Soviet Academy of Sciences described the event as follows: "A scintillating ball of fire with a luminous tail and sparks sped for several seconds across the cloudless sky in broad daylight. The bolide was so bright that it blinded the eyes of people watching it and it cast moving shadows. In its wake there remained a wide gray band of dust that was seen for several hours. Some minutes after the fireball disappeared powerful detonations were heard, resembling explosions or the firing of heavy guns."

The actual impact point was quickly spotted from the air because the area was still covered with snow; the places where the fragments of the meteorite had hit looked brownish as they do in summer. Expeditions set out from both Vladivostok and Khabarovsk for a preliminary survey. They found over 120 impact craters ranging in size from $1\frac{1}{2}$ feet to 90 feet and 78 holes less than $1\frac{1}{2}$ feet in diameter that had been produced by the fragments. Fragments could be found everywhere. Some fragments had struck trees so that the angle

of impact could be established directly. The gray dust that had hovered in the air after the passage of the body had settled in the meantime and was partly recovered from the ground with the aid of powerful magnets. It proved to consist of round globules of iron that had formed in midair. Some of them had fused together and most of them could be seen only with a strong magnifying glass.

It could be calculated later on that the meteorite must have entered our atmosphere with a relative velocity of 8.7 miles per second. The original weight must have been on the order of 30 tons. The pieces sent to Moscow for examination had a total weight of 23 (metric) tons. The investigation of these pieces not only gave the chemical composition (93.5 per cent iron; 5.27 per cent nickel; 0.47 per cent cobalt; 0.20 per cent phosphorus and 0.06 per cent sulfur) but it also showed why this meteorite had broken up as thoroughly as it had. It was not a homogeneous mass of meteoric iron but instead consisted of pieces that seem to have been fused together by pressure or heat some time in the distant past. Moreover the iron parts were often separated by thin layers of a mineral called schreibersite which is a com-

pound of iron and phosphorus. These mineral layers provided natural lines of cleavage. Presumably the meteorite had already broken apart during the passage through the air. The larger fragments that might still have weighed a ton, or more then broke apart when they struck the rocky ground.

I have selected these three cases of meteoric noise because they represent three different types of noise production. The noise heard over L'Aigle was, in all probability, produced by the breakup of the meteorite after it had traversed the upper layers of the atmosphere more or less in one piece. It is unfortunate that we know nothing of the angle of the flightpath in this case; the stones that fell from the cloud fell vertically or very nearly so and obviously with subsonic speeds.

In the case of the older fall in Alsace the description sounds as if the meteorite reached the ground intact, having travelled with supersonic speed almost until impact. What the people heard was the noise of the impact and then the sonic boom produced earlier.

The Siberian meteorite of 1947 must have moved with subsonic speed by the time it became visible because nothing

that could be ascribed to a sonic boom is mentioned. The sound resembling the noise of artillery fire that was heard was caused by the not quite simultaneous impacts of many fragments. If the sky had been cloudy at the time the impact noises would have produced a prolonged thunderous roar because of the reflection of the sound waves from clouds at different heights.

And now we can sum up the whole problem of noises produced by meteors.

If the noise-producing event — e. g., the breakup of the meteorite — takes place above 22 (or 25) miles nothing will be heard because no sound waves can be produced. If a bright meteor passes overhead at a height of less than 20 miles with an impact point a long distance away, a kind of faint thunder might be heard, but more than a minute after the phenomenon has been seen. This is the situation when mistakes are most likely to be made, with random

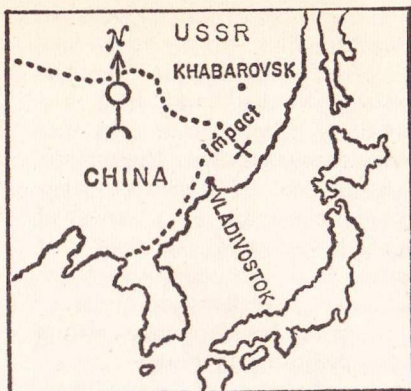


Fig. 3. Sketch Map of the Area of the 1947 Meteorite Fall. The distance of the impact point from Vladivostok is about 200 miles.

noises ascribed to the meteor and its real noise being disregarded.

But an observer situated only a few miles from the impact point of a large meteorite might hear all three kinds of noise: the "boom" of the supersonic passage through the atmosphere, the noise of the breakup if it occurs and finally the sound of the impact.

—Willy Ley

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At the Bottom of a Hole

by LARRY NIVEN

Illustrated by CASTELLON

*What good's a planet? It's nothing
but the bottom of a gravity hole in
space — unless it's a hiding place!*

I

Twelve stories below the roof gardens were citrus groves, grazing pastures and truck farms. They curved out from the base of the hotel in neat little squares, curved out and up, and up, and up and over. Five miles overhead was the fusion sunlight tube, run-

ning down the radius of the slightly bulging cylinder that was Farmer's Asteroid. Five miles above the sunlight tube, the sky was a patchwork of small squares, split by a central wedding ring of lake and by tributary rivers, alive with the tiny red glints of self-guided tractors.

Lucas Garner was half day-dreaming, letting his eyes rove the solid sky. At the Belt government's invitation he had entered a bubbleworld for the first time, combining a vacation from United Nations business with a chance at a brand new experience — a rare thing for a man of seventeen decades old. He found it pleasantly kooky to look up into a curved sky of fused rock and imported topsoil.

"There's nothing immoral about smuggling," said Lit Shaeffer.

The surface overhead was dotted with hotels, as if the bubbleworld were turning to city. Garner knew it wasn't. Those hotels, and the scattered hotels in the other bubbleworld, served every Belter's occasional need for an Earthlike environment. Belters don't need houses. A Belter's home is the inside of his pressure suit.

Garner returned his attention to his host. "You mean smuggling's like picking pockets on Earth?"

"That's just what I don't mean," Shaeffer said. The Belter reached into his coverall pocket, pulled out something flat and black and laid it on the table. "I'll want to play that in a minute. Garner, picking pockets is legal on Earth. Has to be, the way you crowd together. You

couldn't enforce a law against picking pockets. In the Belt smuggling is against the law, but it isn't immoral. It's like a flatlander forgetting to feed the parking meter. There's no loss of self-respect. If you get caught you pay the fine and forget it."

"Oh."

"If a man wants to send his earnings through Ceres, that's up to him. It costs him a straight thirty per cent. If he thinks he can get past the goldskins, that too is his choice. But if we catch him we'll confiscate his cargo, and everybody will be laughing at him. Nobody pities an inept smuggler."

"Is that what Muller tried to do?"

"Yah. He had a valuable cargo, twenty kilos of pure north magnetic poles. The temptation was too much for him. He tried to get past us, and we picked him up on radar. Then he did something stupid. He tried to whip around a hole.

"He must have been on course for Luna when we found him. Ceres was behind him with the radar. Our ships were ahead of him, matching course at two gee. His mining ship wouldn't throw more than point five gee, so eventually they'd pull alongside him no matter what he did. Then he noticed Mars was just ahead of him."

"The hole." Garner knew enough Belters to have learned a little of their slang.

"The very one. His first instinct must have been to change course. Belters learn to avoid gravity wells. A man can get killed half a dozen ways coming too close to a hole. A good autopilot will get him safely around it, or program an in-and-out spin, or even land him at the bottom, God forbid. But miners don't carry good autopilots. They carry cheap autopilots, and they stay clear of holes."

"You're leading up to something," Garner said regretfully. "Business?"

"You're too old to fool."

Sometimes Garner believed that himself. Sometime between the first world war and the blowing of the second bubble-world, Garner had learned to read faces as accurately as men read print. Often it saved time — and in Garner's view his time was worth saving.

"Go on," he said.

"Muller's second thought was to use the hole. An in-and-out spin would change his course more than he could hope to do with the motor. He could time it so Mars would hide him from Ceres when he curved out. He could damn near touch the surface, too. Mars' atmosphere is as thin as a flatlander's dreams."

AT THE BOTTOM OF A HOLE

"Thanks a lot. Lit, isn't Mars U. N. property?"

"Only because we never wanted it."

Then Muller had been trespassing. "Go on. What happened to Muller?"

"I'll let him tell it. This is his log." Lit Shaeffer did something to the flat box, and a man's voice spoke.

II

April 20, 2112.

The sky it flat, the land is flat, and they meet in a circle at infinity. No star shows but the big one, a little bigger than it shows through most of the Belt, but dimmed to red, like the sky.

It's the bottom of a hole.

I must have been crazy to risk it. But I'm here. I got down alive. I didn't expect to, not there at the end.

It was one crazy landing.

Imagine a universe half of which has been replaced by an ochre abstraction, too distant and far too big to show meaningful detail, moving past you at a hell of a clip. A strange, singing sound comes through the walls, like nothing you've ever heard before, like the sound of the wings of the angel of death. The walls are getting warm. You can hear the thermosystem whining even above

the shriek of air whipping around the hull. Then, because you don't have enough problems, the ship shakes itself like a mortally wounded dinosaur.

That was my fuel tanks tearing loose. All at once and nothing first, the four of them sheer-ed their mooring bars and went spinning down ahead of me, cherry red.

That faced me with two bad choices. I had to decide fast. If I finished the hyperbola, I'd be heading into space on an unknown course with what fuel was left in my inboard cooling tank. My lifsystem wouldn't keep me alive more than two weeks. There wasn't much chance I could get anywhere in that time, with so little fuel, and I'd seen to it the goldskins couldn't come to me.

But the fuel in the cooling tank would get me down. Even the ships of Earth use only a little of their fuel in getting in and out of their pet gravity well. Most of it gets burned getting them from place to place fast. And Mars is lighter than Earth.

But what then? I'd still have two weeks to live.

I remember the old Lacus Solis base, deserted seventy years ago. Surely I could get lifsystems working well enough to support one man. I might

even find enough water to turn some into hydrogen by electrolysis. It was a better risk than heading out into nowhere.

Right or wrong, I went down. . . .

The stars are gone, and the land around me makes no sense. Now I know why they call planet-dwellers "flatlanders". I feel like a gnat on a table.

I'm sitting here shaking, afraid to step outside.

Beneath a red-black sky is a sea of dust, punctuated by scattered, badly cast glass ash trays. The smallest, just outside the port, are a few inches in diameter. The largest are miles across. As I came down the deep radar showed me fragments of much larger craters under the dust. The dust is soft and fine, almost like quicksand. I came down like a feather, but the ship is buried to halfway up the lifsystem.

I set down just beyond the lip of one of the largest craters, the one which houses the ancient flatlander base. From above, the base looked like a huge, transparent raincoat discarded on the cracked bottom.

It's a *weird* place. But I'll have to go out sometime; how else can I use the base lifsystem?

As Uncle Bat told me, stupid-ity carries the death penalty.

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I'll try to go outside tomorrow.

April 21, 2112.

My clock says it's morning. The sun's around on the other side of the planet, leaving the sky no longer bloody. It looks almost like space if you remember to look away from gravity, though the stars are dim, as if seen through fogged plastic. A big star has come over the horizon, brightening and dimming like a spinning rock. Must be Phobos, since it came from the sunset region .

I'm going out.

Later:

A sort of concave glass shell surrounds the ship where the fusion flame splashed down. The ship's lifesystem, the half that shows above the dust, rests in the center like a frog on a lily-pad in Confinement Asteroid. The splash-down shell is all a spider web of cracks, but it's firm enough to walk on.

Not so the dust.

The dust is like thick oil. The moment I stepped onto it I started to sink. I had to swim to where the crater rim slopes out like the shore of an island. It was hard work. Fortunately the splash-down shell reaches to the crater rock at one point, so I won't have to do *that* again.

It's queer, this dust. I doubt you could find its like anywhere

AT THE BOTTOM OF A HOLE

in the system. It's meteor debris, condensed from vaporized rock. On Earth, dust this fine would be washed down to the sea by rain and turned to sedimentary rock, natural cement. On the Moon there would be vacuum cementing, the bugaboo of the Belt's microminiaturization industries. But here, there's just enough "air" to be absorbed by the dust surface . . . to prevent vacuum cementing . . . and not nearly enough to stop a meteorite. Result: it won't cement, no-how. So it behaves like a viscous fluid. Probably the only rigid surfaces are the meteor craters and mountain ranges.

Going up the crater lip was rough. It's all cracked, tilted blocks of volcanic glass. The edges are almost sharp. This crater must be geologically recent. At the bottom, half submerged in a shallow lake of dust, is bubbletown. I can walk okay in this gravity; it's something less than my ship's gee max. But I almost broke by ankles a couple of times getting down over those tilted, slippery, dust-covered blocks. As a whole the crater is a smashed ash tray pieced loosely together like an impromptu jigsaw puzzle.

The bubble covers the base like a deflated tent, with the air-making machinery just outside. The airmaker is in a great

cube of black metal, blackened by seventy years of Martian atmosphere. It's huge. It must have been a pain to lift. How they moved that mass from Earth to Mars with only chemical and ion rockets, I'll never know. Also, *why?* What was on Mars that they wanted?

If ever there was a useless world, this is it. It's not close to Earth, like the Moon. The gravity's inconveniently high. There are no natural resources. Lose your suit pressure, and it'd be a race against time, whether you died of blowout or of red, fuming nitric acid eating your lungs.

The wells?

Somewhere on Mars there are wells. The first expedition found one in the nineteen nineties. A mummified *something* was nearby. It exploded when it touched water, so nobody ever knew more about it, including just how old it was.

Did they expect to find live Martians? If so, so what?

Outside the bubble are two two-seater Marsbuggies. They have an enormous wheelbase and wide, broad wheels, probably wide enough to keep the buggy above the dust while it's moving. You'd have to be careful where you stopped. I won't be using them anyway.

The airmaker will work, I

think, if I can connect it to the ship's power system. Its batteries are drained, and its fusion plant must be mainly lead by now. Thousands of tons of breathing air are all about me, tied up in nitric oxide, NO_2 . The airmaker will release oxygen and nitrogen and will also pick up what little water vapor there is. I'll pull hydrogen out of the water for fuel. But can I get the power? There may be cables in the base.

It's for sure I can't call for help. My antennae burned off coming down.

I looked through the bubble and saw a body, male, a few feet away. He's died of blowout. Odds are I'll find a rip in the bubble when I get around to looking.

Wonder what happened here?

April 22, 2112.

A I went to sleep at first sunlight. Mar's rotation is just a fraction longer than a ship's day, which is convenient. I can work when the stars show and the dust doesn't, and that'll keep me sane. But I've had breakfast and done clean-ship chores, and still it'll be two hours before sundown. Am I a coward? I *can't* go out there in the light.

Near the sun the sky is like fresh blood, tinged by nitric oxide. On the other side it's almost

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black. Not a sign of a star. The desert is flat, broken only by craters and by a regular pattern of crescent dunes so shallow that they can be seen only near the horizon. Something like a straight lunar mountain range angles away into the desert; but it's terribly eroded, like something that died a long time ago. Could it be the tilted lip of an ancient asteroid crater? The Gods must have hated Mars, to put it so close to the middle of the Belt. This shattered, pulverized land is like a symbol of age and corruption. Erosion seems to live only at the bottom of holes.

Later:

Almost dawn. I can see red washing out the stars.

After sundown I entered the base through the airlock, which still stands. Ten bodies are sprawled in what must have been the village square. Another was halfway into a suit in the administration building, and the twelfth was a few feet from the bubble wall, where I saw him yesterday. A dozen bodies, and they all died of blowout. Explosive decompression if you want to be technical.

The circular area under the bubble is only half full of buildings. The rest is a carefully fused sand floor. Other buildings lie in stacks of walls, ceilings, floors, ready to be put up. I suppose

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the base personnel expected others from Earth.

One of the buildings held electrical wiring. I've hooked a cable to the airmaker battery and was able to adapt the other end to the contact on my fusion plant. There's a lot of sparking, but the airmakers works. I'm letting it fill the stack of empty O-tanks I found against a pile of walls. The nitrogen is draining into the bubble.

I know now what happened to the flatlander base.

Bubbletown died by murder. No question of it. When nitrogen started pouring into the bubble, I saw dust blowing out from the edge of town. There was a rip. It was sharp edged, as if cut by a knife. I can mend it if I can find a bubble repair kit. There must be one somewhere.

Meanwhile I'm getting oxygen and water. The oxygen tanks I can empty into the lifesystem as they fill. The ship takes it back out of the air and stores it. If I can find a way to get the water here I can just pour it into the john. Can I carry it here in the O-tanks?

III

April 23, 2112.
Dawn.

The administration building is also a tape library. They kept



a record of the base doings, very complete and so far very boring. It reads like a ship's log sounds, but more gossipy and more detailed. Later I'll read it all the way through.

I found some bubble plastic and contact cement and used them to patch the rip. The bubble still wouldn't inflate. So I went out and found two more rips just like the first. I patched them and looked for more. Found three. When I got them fixed it was nearly sunup.

The O-tanks hold water, but I have to heat them to boil the water to get it out. That's hard work. Question: is it easier to do that or to repair the dome and do my electrolysis inside? How many rips are there?

I've found six. So how many killers were there? No more than three. I've accounted for twelve inside, and according to the log there were fifteen in the second expedition.

No sign of the goldskins. If they'd guessed I was here they'd have come by now. With several months' worth of air in my life-system, I'll be home free once I get out of this hole.

April 24, 2112.

Two more rips in the bubble, a total of eight. They're about twenty feet apart, evenly spaced around the transparent

plastic fabric. It looks like at least one man ran around the dome slashing at the fabric until it wasn't taut enough to cut. I mended the rips. When I left the bubble had started swelling with air.

I'm halfway through the town log, and nobody's seen a Martian yet. I was right, that's what they came for. Thus far they've found three more wells. Like the first, these are made of cut diamond building blocks, fairly large, very well worn, probably tens or hundreds of thousands of years old.

Two of the four have dirty nitric acid at the bottoms. The others are dry. Each of the four has a "dedication block" covered with a queer, partially eroded writing. From a partial analysis of the script, it seems that the wells were actually crematoriums; a deceased Martian would explode when he touched water in the nitric acid at the bottom. It figures. Martians wouldn't have fire.

I still wonder why them came, the men of the base. What could Martians do for them? If they wanted someone to talk to, someone not human, there were dolphins and killer whales right in their own oceans. The trouble they took! And the risks! Just to get from one hole to another!

April 24, 2112.

Strange. For the first time since the landing, I did not return to the ship when the sky turned light. When I did start back the sun was up. It showed as I went over the rim. I stood there between a pair of sharp obsidian teeth, staring down at my ship.

It looked like the entrance to Confinement Asteroid.

Confinement is where they take women when they get pregnant: a bubble of rock ten miles long and five miles across, spinning on its axis to produce one gee of outward pull. The children have to stay there for the first year, and the law says they have to spend a month out of each year there until they're fifteen. I've a wife named Letty waiting there now, waiting for the year to pass so she can leave with our daughter Janice. Most miners, they pay the fatherhood fee in one lump if they've got the money; it's about sixty thousand commercials, so some have to pay in installments, and sometimes it's the woman who pays; but when they pay they forget about it and leave the women to raise the kids. But I've been thinking about Letty. And Janice. The monopolies in my hold would buy gifts for Letty, and raise Janice with enough left over so she could do some travel-

ing, and *still* I'd have enough commercials left for more children. I'd have them with Letty, if she'd agree. I think she would.

How'd I get onto that? As I was saying before I was so rudely interrupted, my ship looks like the entrance to Confinement — or to Farmer's Asteroid, or any underground City. With the fuel tanks gone there's nothing left but the drive and the life-system and a small magnetically insulated cargo hold. Only the top half of the lifsystem shows above the sea of dust, a blunt steel bubble with a thick door, not streamlined like a ship of Earth. The heavy drive tube hangs from the bottom, far beneath the dust. I wonder how deep the dust is.

The splashdown shell will leave a rim of congealed glass around my lifsystem. I wonder if it'll affect my takeoff?

Anyway, I'm losing my fear of daylight.

Yesterday I thought the bubble was inflating. It wasn't. More rips were hidden under the pool of dust, and when the pressure built up the dust blew away and down went the bubble. I repaired four rips today before sunlight caught me.

One man couldn't have made all those slashes.

That fabric's tough. Would a knife go through it? Or would

you need something else, like an electric knife or a laser?

April 25, 2112.

I spent most of today reading the bubbletown log.

There was a murder. Tensions among fifteen men with no women around can grow pretty fierce. One day a man named Carter killed a man named Harness, then ran for his life in one of the Marsbuggies, chased by the victim's brother. Neither came back. They must have run out of air.

Three dead out of fifteen leaves twelve.

Since I counted twelve bodies, who's left to slash the dome?

Martians?

In the entire log I find no mention of a Martian being seen. Bubbletown never ran across any Martian artifact, except the wells. If there are Martians, where are they? Where are their cities? Mars was subjected to all kinds of orbital reconaissance in the early days. Even a city as small as Bubbletown would have been seen.

Maybe there are no cities. But where do the diamond blocks come from? Diamonds as big as the well material don't form naturally. It takes a respectable technology to make them that big. Which implies cities — I think.

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That mummy. Could it have been hundreds of thousands of years old? A man couldn't last that long on Mars, because the water in his body would react with the nitric oxide around him. On the Moon, he could last millions of years. The mummified Martian's body chemistry was and is a complete mystery, barring the napalmlike explosion when water touched it. Perhaps it was that durable, and perhaps one of the pair who left to die returned to cut the dome instead, and perhaps I'm seeing goblins. This the place for it.

If I ever get out of here, you try and catch me near another hole.

April 26, 2112.

The sun shows clear and bright above a sharp-edged horizon. I stand at the port looking out. Nothing seems strange any more. I've lived here all my life. The gravity is settling in my bones; I no longer stumble as I go over the crater lip.

The oxygen in my tanks will take me anywhere. Give me hydrogen, and you'll find me on Luna, selling my monopoles without benefit of a middleman. But it comes slowly. I can get hydrogen only by carrying water in the base O-tanks and then electrolyzing it into the fuel cooling tank, where it liquefies.

The desert is empty except for a strange, rosy cloud that covers one arm of horizon. Dust? Probably. I heard the wind singing faintly through my helmet as I returned to the ship. Naturally the sound can't get through the hull.

The desert is empty.

I can't repair the bubble. Today I found four more rips before giving up. They must circle the bubble all the way 'round. One man couldn't have done it. Two men couldn't.

It looks like Martians. But where are they?

They could walk on the sand, if their feet were flat and broad and webbed . . . and there'd be no footprints. The dust hides everything. If there were cities here the dust must have covered them ages ago. The mummy wouldn't have shown webbing; it would have been worn away.

Now it's starlessly black outside. The thin wind must have little trouble lifting the dust. I doubt it will bury me. Anyway the ship would rise to the surface.

Gotta sleep.

April 27, 2112.

It's oh four hundred by the clock, and I haven't slept at all. The sun is directly overhead, blinding bright in a clear, red sky. No more dust storm.

The Martians exist. I'm sure of it. Nobody else was left to murder the base.

But why don't they show themselves?

I'm going to the base, and I'm taking the log with me.

IV

I'm in the village square. Oddly enough, it was easier making the trip in sunlight. You can see what you're stepping on, even in shadow, because the sky diffuses the light a little, like indirect lighting in a dome city.

The crater lip looks down on me from all sides, splintered shards of volcanic glass. It's a wonder I haven't cut my suit open yet, making that trip twice a day.

Why did I come here? I don't know. My eyes feel rusty, and there's too much light. Mummies surround me, with faces twisted by anguish and despair and with fluids dried on their mouths. Blowout is an ugly death. Ten mummies here, and one by the edge of town, and one in the admin building.

I can see all of the crater lip from here. The buildings are low bungalows, and the square is big. True, the deflated bubble distorts things a little, but not much.

So. The Martians came over

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the lip in a yelling swarm or a silent one, brandishing sharp things. Nobody would have heard them if they yelled.

But ten men were in a position to see them.

Eleven men. There's a guy at the edge . . . no, they might have come from the other direction. But still, ten men. And they just waited here? I don't believe it.

The twelfth man. He's half in to a suit. What did he see?

I'm going to go look at him.

By God, I was right. He's got two fingers on a zipper, and he's pulling down. He's not half into a suit, he's half out of it!

No more goblins.

But who cut the dome?

The hell with it. I'm sleepy.

April 28, 2112.

A day and a half of log to catch up on.

My cooling tank is full, or nearly. I'm ready to try the might of the goldskins again. There's air enough to let me take my time, and less chance of a radar spotting me if I move slowly. Good-by, Mars, lovely paradise for the manic depressive.

That's not funny. Consider the men in the base.

Item: it took a lot of knives to make those slits.

Item: everyone was inside.

Item: no Martians. They would have been seen.

Therefore the slits were made from inside. If someone was running around making holes in the bubble, why didn't someone stop him?

It looks like mass suicide. Facts are facts. They must have spread evenly out around the dome, slashed, and then walked to the town square against a driving wind of breathing-air roaring out behind them. Why? Ask 'em. The two who aren't in the square may have been dissenters; if so, it didn't help them.

Being stuck at the bottom of a hole is not good for a man. Look at Earth's insanity records.

I am now going back to a minute-to-minute log.

1120

Ready to prime drive. The dust won't hurt the fusion tube, nothing could do that, but backblast might damage the rest of the ship. Have to risk it.

1124.

The first shot of plutonium didn't explode. Priming again.

1130

The drive's dead. I can't understand it. My instruments swear the fusion shield is drawing power, and when I push the right button the hot uranium gas sprays in there. What's wrong?

Maybe a break in the primer line. How am I going to find out? The primer line's way down there under the dust.

I've sprayed enough uranium into the fusion tube to make a pinch bomb. By now the dust must be hotter than Washington.

How am I going to repair that primer line? Lift the ship in my strong, capable hands? Swim down through the dust and do it by touch? I haven't anything that'll do a welding job under ten feet of fine dust.

I think I've had it.

Maybe there's a way to signal the goldskins. A big, black SOS spread on the dust . . . if I could find something black to spread around. Have to search the base again.

1900

Nothing in the town. Signaling devices in plenty, for suits and Marsbuggies and orbital ships, but only the laser was meant to reach into space. I can't fix a seventy-year-old comm laser with spit and wire and good intentions.

I'm going off minute-to-minute. There's be no takeoff.

April 29, 2112.

A I've been stupid.

Those ten suicides. What did they do with their knives after they were through cutting? Where did they get them in the first place? Kitchen knives won't cut bubble plastic. A laser might, but there can't be more than a

couple of portable lasers in the base. I haven't found any.

And the airmaker's batteries were stone dead.

Maybe the Martians kill to steal power. They wouldn't have fire. Then they took my uranium for the same reason, slicing my primer line under the sand and running it into their own container.

But how would they get down there? Dive under the dust?

Oh.

I'm getting out of here . . .

I made it to the crater. God knows why they didn't stop me. Don't they care? They've got my primer fuel.

They're under the dust. They live there, safe from meteors and violent temperature changes, and they build their cities there too. Maybe they're heavier than the dust, so they can walk around on the bottom.

Why, there must be a whole ecology down there! Maybe one-celled plants on top, to get energy from the sun, to be driven down by currents in the dust and by dust storms, to feed intermediate stages of life. Why didn't anybody look? Oh, I wish I could tell someone!

I haven't time for this. The town O-tanks won't fit my suit valves, and I can't go back to the ship. Within the next twenty-

four hours I've got to repair and inflate the bubble or die.

I wonder how long it would take a Martian to get over the rim and down here to the bubble?

Wondering won't help. I could still be seeing goblins.

April 30, 2112.

I strolled up to the rim to see if my ship was still there. The Martians might have dragged it into the dust. They hadn't, and there's no sign of tampering.

Am I seeing goblins? I could find out. All I'd have to do is peep into the base fusion plant. Either there's a pile there, mostly lead by now . . . or the pile was stolen seventy years ago. Either way the residual radiation would punish my curiosity.

I'm watching the sun rise through the bubble wall. It has a strange beauty, unlike anything I've seen in space. I've seen Saturn from an infinity of angles when I pulled monopoles in the rings, but it can't compare to this.

Now I know I'm crazy. It's a hole! I'm at the bottom of a lousy hole!

The sun writes a jagged white line along the crater rim. I can see the whole rim from here, no fear of that. No matter how fast they move, I can get into my suit before they get down to me.

It would be good to see my enemy.

Why did they come here, the fifteen men who lived and died here? I know why I'm here: for love of money. Them too? A hundred years ago the biggest diamonds men could make looked like coarse sand. They must have come after the diamond wells. But travel was fiendishly expensive then.—Could they have made a profit?

Or did they think they could develop Mars the way they developed the asteroids? Ridiculous! But they didn't have my hindsight. And holes can be useful . . . like the raw lead deposits along Mercury's dawnside crescent. Pure lead, condensed from dayside vapor, free for the hauling. We'd be doing the same with Martian diamonds if it weren't so cheap to make them.

Here's the sun. An anticlimax: I can't look into it, though it's dimmer than the rock miner's sun. No more postcard scenery til —

Wups.

I'd never reach my suit. One move and the bubble will be a sieve. Just now they're as motionless as I am, staring at me without eyes. I wonder how they sense me? Their spears are poised and ready. Can they really puncture bubble fabric? But the Martians must know their own strength, and they've done this before.

All this time I've been waiting for them to swarm over the rim. They came out of the dust pool in the bottom of the crater. I should have realized the obsidian would be as badly cracked down there as elsewhere.

They *do* look like goblins.

V

For moments the silence was broken only by the twin humming of a nearby bumblebee and a distant tractor. Then Lit reached to turn off the log. He said, "We'd have saved him if he could have held out."

"You knew he was there?"

"Yah. The Deimos scope watched him land. We sent in a routine request for permission to land on U. N. property. Unfortunately flatlanders can't move as fast as a drugged snail, and we knew of no reason to hurry them up. A telescope would have tracked Muller if he'd tried to leave."

"Was he nuts?"

"Oh, the Martians were real enough. But we didn't know that until it was too late. We saw the bubble inflate and stay that way for awhile, and we saw it deflate all of a sudden. It looked like



Muller'd had an accident. And that's why I'm telling you all this, Garner. As First Speaker for the Belt Political Section, I hereby confess that two Belt ships have trespassed on United Nations property."

"You had good reasons."

"You'd have been proud of him Garner. He didn't run his suit; he knew perfectly well it was too far away. Instead, he ran toward an O-tank full of water. The Martians must have slashed the moment he turned, but he reached the tank, stepped though one of the holes and turned the O-tank on the Martians. In the low pressure it was like using a fire hose. He got six before he fell."

"They burned?"

"They did. But not completely. There are some remains. We took three bodies, along with their spears, and left the others in situ. You want the corpses?"

"Damn right."

"Why?"

"What do you mean, Lit?"

"Why do you want them? We took three mummies and three spears as souvenirs. To you they're not souvenirs. It was a Belter who died down there."

"I'm sorry, Lit, but those bodies are important. We can find out what a Martian's made of before we go down."

"Go down." Lit made a rude

noise. "Luke, why do you want to go down there? What could you possibly want from Mars? Revenge? A million tons of dust?"

"Abstract knowledge."

"For what?"

"Lit, you amaze me. Why did Earth to go to space in the first place, if not for abstract knowledge?"

Words crowded over each other to reach Lit's mouth. They jammed in his throat, and he was speechless. He spread his hands, made frantic gestures, gulped twice, and said, "It's obvious!"

"Tell me slow. I'm a little dense."

"There's *everything* in space. Monopoles. Metal. Vacuum for the vacuum industries. A place to build cheap without all kinds of bracing girders. Free fall for people with weak hearts. Room to test things that might blow up. A place to learn physics where you can watch it happen. Controlled environments — "

"Was it all that obvious before we got here?"

"Of course it was!" Lit glared at his visitor. The glare took in Garner's withered legs, his drooping, mottled, hairless skin, the decades that showed in his eyes — and Lit remembered his visitors' age. "... Wasn't it?"

—LARRY NIVEN

*The Great Powers of Earth could
not be friends. But they had to
be allies against a common foe!*

DECOY SYSTEM

by ROBIN SCOTT

I had spent a couple of weeks in Berlin on one of those Armed Forces Committee boondoggles in the late sixties — sixty-eight, I think it was; and I retained a basic familiarity with the town. I got a cab at Tempelhof airport without being recognized and was at the Hotel am Zoo twenty minutes after my plane had landed. I'm no longer a young man, and I was grateful for the rapidity of the trip.

There'd been a leak some-

where. Maybe from the passenger manifest. A reporter was on me as soon as I had signed the register.

"What brings you to Berlin, Senator Charles?" His English was heavily accented, but easy and idiomatic.

"Sorry, son. No interviews."

"Just a few moments, Senator. I'd like a statement on the French withdrawal . . ."

I cut him off with a closed-mouth smile and a shake of the head. I'd been a working jour-

nalist for many years before I entered politics, and I could sympathize with him. But I couldn't afford to advertise my presence in Berlin at this point. It was unfortunate that I had been recognized. I glanced at my watch as I followed the bellgirl to the drop chute. Too late for the morning editions; I had perhaps twelve hours before the afternoon papers would announce my visit to the city. They would be sure to use the word "mysterious". Thirty-five years after the end of the Second World War, Berlin was still an occupied city and still divided. The press was highly sensitive to visits from officials of the "protecting powers."

The bellgirl let me into my suite and dismissed the man who had brought my single two-suiter. I waved the girl away, refusing her somewhat weary professional offer and tipping her ten marks. She shrugged, her smooth shoulders eloquent through the translucent material of her abbreviated costume, and went back to her station in the lobby to seek more adventurous new arrivals.

I opened the two-suiter and poured myself a very small drink from the bottle of Jack Daniels nestled in its leather case. I sipped as I changed from my rumpled

traveling clothes, washed and removed my hairpiece. You don't see many balding men these days, and I weighed the consequences: without the hairpiece I would stand out a bit; with it I would be easy to recognize, and I might have a good deal more trouble shaking the press. But without it, I might have trouble convincing Semyin-ov, who no doubt had studied my dossier as assiduously as I had his, who I was. I doped the backing and pressed the hairpiece carefully back in place. I would have to use other measures if I hoped to circumvent the press.

I checked the locks on my briefcase for the fortieth time since my departure from Washington that noon and left my room for the drop chute. I swung off on the floor above the lobby and walked slowly down the single flight. Halfway down I spotted them, three reporters and a photographer, smoking and chatting, glancing from time to time toward the drop chute they expected me to exit from. I turned silently and headed back up the stairway. Down the first-floor corridor was an emergency exit and another pair of stairs, this one gray and utilitarian. A moment later, and I was out in the cool, damp night of a Central European September.

The Kurfurstendamn hadn't changed much since '68, maybe more neon, if that were possible. I had no trouble finding my way to the Uhlandstrasse U-Bahn stop, and I picked up a city map at the news kiosk by the entrance to the subway. Twenty minutes brought me up into the northern part of the city, the old French Sector, and I left the subway at Seestrasse. I was the only passenger to leave the train, and I stopped by the lighted ticket booth to check my map for Frauenfelder Weg. The people in Washington had said it was no more than a ten minute walk. I took twenty, doubling back several times to check for any sign of surveillance. I'm no expert at these things, but when I finally walked up to the gate of the little villa at number 21, I was pretty sure that no one had followed me.

I rang, and was admitted by one of those faceless young men in diplomatic gray who seem to be interchangeable parts in the vast machinery of government, the ones who present you with briefing papers at Defense Department meetings and program computers in the underground Whitehouse and meet you at the gate down at Sandia or over at Vandenberg. They didn't have names, only functions.

Semyinov was already there, pacing the floor and wondering, no doubt, what the *chort* the whole thing was about. I recognized him right away from the pictures I'd been shown. There was no mistaking the high, sloped forehead and the heavy, dark-rimmed glasses. The Russians still considered hairpieces "western decadence," just as they had neckties in the thirties, but Semyinov's suit displayed an impeccable tailoring that would have shocked his predecessors in the Politbureau four decades ago.

The man in the gray suit left us, and I introduced myself. Semyinov's English was as impeccable as his dress and as stiff as his bearing.

"Senator Charles, I protest this irregular meeting. I am instructed to inform you that I have followed your instructions about secrecy only because the request came to my government directly from your President."

Semyinov refused the cigarette I offered him and remained standing stiffly, when I seated myself in one of the Nigerian-modern chairs which contrasted so distressingly with the Gothic decor of the villa. "Calm down, Mr. Semyinov. Our desire for maximum secrecy for this meeting is fully justified, and you

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know as well as I do that you can come over here to West Berlin by elevated without any kind of border check, something *I* cannot do if we were to meet in *your* backyard."

Semyinov had made his statement and had nothing to add. I went on, and as I talked I removed the tiny contoured probe from the back of my wristwatch and inserted it into the proper slot on my briefcase, deactivating the incendiary device that would have destroyed the contents had the brief case been tampered with.

"Mr. Semyinov, I have here some photographs that will interest you." I flopped the first eight-by-ten glossy down on the coffee table in front of me. "As you can see from this and the following photographs, this is a highly sophisticated subminiature pulse-transceiver. It is something similar to our ASN-1B and your *Garoshny-5* missile decoy transmitters."

The mention of the *Garoshny-5* got to him, and Semyinov bent his long frame into the chair beside me and hunched over the photographs to study them. Like me Semyinov is no technician, but his job in the Politbureau is analogous to mine on the Armed Forces Committee, and we both have a pretty fair degree of familiarity with the hard-
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ware of defense. Still, it must have been a shock to him to discover that we knew enough about the *Garoshny-5* to compare it with our own ASN-1B. I know *I* was shocked when I learned that we had clear evidence that the Soviets had the details of *our* decoy system. Let's face it, the decoys on both sides are probably the most secret aspect of our protective offensive missile system. They can serve to multiply the images on a radar detection screen a hundred-fold.

Riding in the nose of an incoming missile, they can screw up your defense system by overloading it. I could see that Semyinov was shocked, and for just a moment I felt sympathy for him.

But Semyinov was still fighting. "I know nothing of these devices you mention, and I am quite certain this is nothing of Soviet manufacture."

I kept him on the hook a little longer. "Mr. Semyinov, this device — and a number of others identical to it — have been found buried at crucial junction points in our early-warning telling system. They have been induction wired into the telling cables themselves, and they are designed so that a remote signal will trigger their operation."

Semyinov started to protest his ignorance again, but I cut

him off. "You know what these little boxes do when they're cut in?" Semyinov looked up from the photographs, and I answered my own question. "They feed a phony signal to our early-warning centers, Mr. Semyinov. They can make our radar screens lie to us. They can fill our status boards with false information. They can make it look to us as if you people have launched your entire arsenal at us!"

Semyinov was white with shock. He dropped all pretence of formality. "But we have not done this thing Senator Charles. Why should we do such a thing? You would retaliate. You would . . ." His voice dropped off as he began to consider the possibilities of the situation. Then, slowly, his voice low, through teeth clenched in anger, he muttered: " . . . *verolomniye Kitaytse!*"

I know very little Russian, but I caught the word *Kitaytsy* — "Chinese," and I knew what was going through Semyinov's mind. That's what our intelligence people had thought too, at first. Who else would want to trigger an all-out exchange of nuclears between the Americans and the Russians? Who else had nothing to lose and everything to gain by the mutual destruction of the two nuclear behemoths? By the virtual depopulation of the civil-

ized world? But our intelligence analysts were wrong, and so was Semyinov.

"No," I said. "It's not the Chinese." I pulled more photographs out of my briefcase. "We found this in August near Springfield, Illinois, just before we found the first of the decoy transceivers. It was alive then."

Semyinov took a good look at the thing in the photograph and shuddered. Everybody does when they see it for the first time. It was the size of a badger and heavily furred except for its obscenely pink snout. It had rows of grinding teeth fronted by tusk-like incisors. It had six legs, two of which were equipped with opposable digits, the others with sharp, slashing claws. A long, prehensile tail terminated in a vicious, spike-like projection. It was a nightmare of a thing, a mixture of out-sized mole and weasel and ape. And then there were the eyes. Even in death, there was malevolence there, and intelligence.

"What is this . . . thing?"

"We don't know. When we found it, it had been stunned by the blow of a steer's hoof. It had been feeding on another steer it had slaughtered. There was a hole nearby, a burrow of sorts, that led down to the buried telling-circuit junction box."

Semyinov pushed the photographs away in disgust. "What are you implying, Senator Charles, that this . . . this *thing* had something to do with the decoy transceivers?"

"I'm not implying," I said. "I'm stating. Let me tell you the rest of the story. The local sheriff who found the animal put in a call to the Springfield field office of the F.B.I.; one of their agents took a look and got in touch with the Defense Department and a zoologist at the University of Champaign. The sheriff packed the animal, which he thought was dead, into a wire cage and drove with it to Rantoul Air Force Base, and the zoologist took a look at it. He nearly lost the index finger from his right hand."

Semyinov looked at the photograph again and nodded. I went on: "The F. B. I. man got the cage door closed before the thing could get out, but before he or the zoologist knew what was happening, the thing committed suicide."

"Suicide!"

"Yes. It was intelligent. It's hard to see in this photograph, but there is a little pouch just below the neck, in front. Like the pouch on a marsupial. The thing reached in its pouch with one paw and pulled a little tube out. Here, in this picture.

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"Then it shot itself in the head."

Semyinov left the little villa on Frauenfelder Weg first, and I gave him a good half-hour to get clear of the area before I headed back to the U-Bahn for the ride in to the Ku'damm. I was tired to the bone, but satisfied. Semyinov's shocked reaction seemed genuine, and unless I was very much mistaken, he would be back in Moscow within a few hours, and the hunt would be on. I could only hope they would find what we found: the decoy transceivers and the animals.

I abandoned my suitcase and my bottle of Jack Daniels at the Hotel am Zoo and spent the night in a little pension on Knesebeckstrasse. I was on the first flight for Frankfurt the next morning, and by noon I was back in Washington and reporting to the President.

"How did it go, Allan?" The President looked terribly tired.

"Well enough, Mr. President." I looked at his worn face, seeing lines that anxiety had etched so deeply around the eyes and mouth. "I think Semyinov bought it."

The President rose from his massive desk and turned to stare out at the grounds down toward

Pennsylvania Avenue. There were children playing there, probably the President's grandchildren. He shrugged and turned back to me, his arms outstretched, palms upward. "It's a long shot, and we're gambling everything we've got."

I picked up my hat and started for the door. The President's arms dropped to his sides, and that famous smile erased the anxiety from his face for a split second. "Good-by Allan. And thank you."

"Not at all, Mr. President."

I next saw President Canfield standing in an empty field of corn stubble a couple of hundred yards behind the Little Whitehouse on his Kansas farm.

It was late in October, a month almost to the day from my meeting with Semyinov in Berlin. The President had called me that morning, and I had ridden out from Andrews AFB in the President's personal flitter along with his Whitehouse staff chief, the Secretary of Defense and a translator from the National Security Council. The President looked old and lonely standing there amid the stubble, his overcoat billowing in the blast from the flitter's thrusters. We touched down only long enough to take him aboard, and then we were off at maximum

speed, headed north by northwest.

We sat pretty much in silence for the six-hour trip. The President read from his capacious brief case, occasionally making penciled notations. The rest of us slept or played cribbage or simply sat and watched Canada slip away 40,000 feet beneath us and then the sea, gray and cold. We picked up a fighter escort south of Anchorage, altered course slightly to the west and began to lose altitude. St. Paul's in the Pribilofs is a desolate place, all gray rock and grayer sky and still grayer water; but the Navy had done its best with foam and fiberglass, and our quarters — while certainly not luxurious — were comfortable enough. I shivered during the jeep ride in from the landing flat and thought of the bellgirl in the Hotel am Zoo. Well, I had my bottle of Jack Daniels with me, and that would be creature comfort enough on this trip too.

The Soviet party arrived within minutes after we did. Minister-President Nikolev had brought Semyinov and three others with him. One I recognized as Defense Minister Marshal Kaganov. The second man, the translator, was a stranger to me. But the third man to enter our foam-walled meeting room I knew very well

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indeed. I had hoped Alexi would be a member of the party, and — since he was the Soviet's number one expert on early warning systems — it was only logical that he come along. Still, I had not communicated directly with him since the Disarmament Conference of '74, and I was surprised at how he had aged. I guess I have aged too, and for the same reasons. I hardly dared look at Alexi. But he is a cool one, and when he was sure no one could observe, he lowered one eyelid at me in the barest suggestion of a wink.

The summit conference went as we had hoped. The two heads of state quickly agreed on the extreme nature of the threat. The Soviets had found a considerable number of the decoy transceivers, and their telling-circuit inspection crews had come across the mangled remains of two of the six-legged creatures in the Kazakhstan area, both apparently the victims of wolves. Minister-President Nikolev was convinced — as we had hoped he would be — that the strange creatures, wherever they had come from, had intended to trigger a nuclear blowup as a convenient method of eliminating most of the indigenous life on earth and softening up the planet for conquest. Nikolev is a fairly typical power-handler — and a

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Russian — and you could see that deep down inside he rather admired the cleverness of the plan. After all, Russian politics since the Middle Ages has revolved around such Byzantine plotting: set A against B and then when they've pretty well destroyed each other, move in and pick up the pieces.

There were a lot of details, mostly worked out by the Secretary of Defense and Marshal Kaganov. But the first part of the agreement was clear. Total nuclear disarmament with mutual inspection, except for watchdog forces around the Chinese perimeter, and these were to be mixed-manned with NATO and Soviet-Satellite missile batteries.

The second part of the agreement would require more study, but there was basic agreement in principle: the two great *former* nuclear powers would devote their common resources to space research. As President Canfield put it: "We've stopped these things here this time, but they won't give up, and I'd rather face a showdown somewhere out in space than here on earth. We've got to get together the where-withall to go out there to meet them."

The conference broke up after

a day and a half, and the first inspection teams set about their work within two days. I rode back with the President as far as Chicago, took the Lake Central flitter down-state to Champaign-Urbana and taxied in to the University. I found Nathan sitting in his workshop surrounded by bits of micro-electronics and the remains of salami sandwiches, as usual indiscriminately mixed. Together we walked across the campus to the Life Sciences Building to find George.

Once in the fastness of George's spacious zoo, the chittering of his experimental animals lending a kind of homey sound to the conversation, I tilted back my chair, took a long pull on my absolute alcohol and grapefruit

juice cocktail and filled my fellow conspirators in.

"It's done," I said. "It went pretty much the way we planned it. I saw Semyinov in Berlin in September. He got the point, and the Soviet's own imagination did the rest, helped of course by your gadgets," I bowed toward Nathan, "and the animals," I bowed toward George. Both men had grins on their faces like someone had just told them they had won the Nobel Peace Prize. I lifted my beaker and saluted them. "You've done it, gentlemen!"

Nathan drank deeply, looked at me a moment and then at George. "I only wish Alexi could be with us now," he said.

— ROBIN SCOTT



FORECAST

Next issue brings Hayden Howard's powerful series about the Eskimo Invasion to a place and time far removed from the Boothia peninsula and the Esks. The title of the story will tell you that; it's called, *Our Man in Peking*. And if you think you'll have any trouble finding the issue we might mention that the story, and the issue, are decorated with a handsome cover by Jack Gaughan.

Naturally we'll also bring you the conclusion of Jack Vance's *The Palace of Love* — in which we get to see the Palace, and the man who owns it. Since both of these are pretty solid pieces of work and will fill up a lot of pages, it's a little tricky to try to tell you what else will be in the issue — but we've got stories in type, ready to go, by Philip K. Dick, Richard Wilson, Poul Anderson, Christopher Anvil, to name only a few. . . .

Why not come around next issue and see for yourself?

Galaxy Bookshelf

By Algis Budrys

Robert Heinlein's new novel is *The Moon is a Harsh Mistress* (Putnam's, \$5.95). Very much like the Heinlein novels of old, its character is somewhere near *Sixth Column* and *If This Goes On*

This is the recent *If* magazine story of a successful revolution on the Moon; the separation of the vigorous, unconventional colony from the hidebound world which gave it birth. The action is fast, the characterizations are engaging, the detail of the revolution is believable and apparently similar to the truth — it is handled with all of Heinlein's expertise for dirt-level politics, snappy dialogue and a sense of an actual living society.

There has not been as evenly

paced a Heinlein novel in some time; if the book does read as if Heinlein felt he were going over old ground and were just a little too detached from these particular people and their particular variant on a familiar situation, this is nevertheless a more homogeneous piece of construction than, for example, *Stranger in a Strange Land*. It has the virtue of self-consistency in a very important place — the place in which the reader puts the book down to catch a few hours' sleep, having been trapped by it shortly after dinner, and then picks it up again as soon as he can, confident that its nature will not have altered radically while his back was turned.

The Moon on which this story

takes place has for quite some time been a prison colony — a dumping ground for the criminals and antisocials of the three principal cultures — North American, Russian and Chinese. There are leavenings from all the other nations of the world, which seems to have struck some sort of more or less viable international balance following a short nuclear war. An “apolitical” Authority has been set up to administer the Moon, whose inhabitants have tunneled underground, set up hydroponic farms and generally established a tough but feasible way of life, based on agriculture and the fact that there are two men for every woman.

It becomes obvious to these people that even though most of them are no longer prisoners working out sentences, they are very much on the short end of the stick. They are forced to do all their trading through the Authority, which fixes prices and runs the catapult which fires grain canisters Earthward. Properly aroused, they revolt. What follows thereafter is a story of the diplomatic maneuvering and the ballistic hurtlement required to make the Earth accept the Moon as a sovereign nation. What goes before is the underground scheming required to get a bunch of vaguely dissatisfied farmers

to accept the various strictures they must impose on themselves if the revolution is to succeed. On this level, the book is political science fiction — we have no one at all who can write it anywhere near as well as Heinlein can — and as such it constitutes a sort of allegorical manual for political action, as well as a rephrase and transliteration of classic techniques.

The outstanding feature of literary interest is that the revolutionary triumvirate contains one individual who is a computer. I haven't read a more matter-of-fact, believable description of an individual with an electronic neurophysiology. Mike — who goes on to create the personality of Adam Selene, and also of Adam's staff of office assistants — may in fact be the most fully realized individual in the story. He certainly would have been if Heinlein had chosen to also give him maneuverability. As it is, he is a voice on the telephone and a human picture on a TV screen, and this is often quite enough to make him be a human being.

Another member of the triumvirate is Professor de la Paz, who plays diplomat in relation to Mike the politician. Tying the two together, and taking responsibility for making a conscious individual of Mike, is Manual

Garcia O'Kelly, the more or less self-taught computer technician. In this story he is Heinlein's practical man-of-all-work figure, the naturally bright but not too articulate and not particularly well educated chap who can always be counted upon to do something in the right direction very quickly. There is also a stunning blonde named Wyoming, who is placed very close to the councils of the revolution. But she never quite makes it, either as a person or as an effective force; she is something of a catalyst, and does little work besides that. Every revolution must have its angel, but she does not seem to really have the stuff.

From the point of view we're working with today, this is a book about people who do something about their troubles. More specifically, it is a book about a small group of people who come to an awareness, mistaken or not, that they ought to do something about their society even if it means doing a certain amount of cheating and lying to fellow members of that same society, on the premise that most people don't know what's good for them. And that having a clear idea of what's good for most people is a license to cheat, provided one cheats on behalf of something larger than one's self.

It's also possible to rotate this entire proposition — to look at the book as if it were in fact the human viewpoint story of a computer's wholly successful attempt to manipulate his environment and fulfill his own personality. In that view, O'Kelly, de la Paz and Wyoming are no more than prosthetic devices, not much different from the wholly fictitious Adam Selene personality. All the people in the book are prosthetic, used for the purpose of creating a climate more favorable for the computer, which, having accomplished this purpose, then puts them all away in a closet as far as its own awareness is concerned. This would explain Mike's puzzling cessation of intercourse with the human characters in this story, who are never again able to communicate with him once the revolution has been accomplished.

Either way, this is a book about strong personalities doing things about their situation. They may not be right, but they act as if they were, and they keep plugging away. They recognize — or, if you prefer, they believe — that the majority of people are comfort-oriented; that they will not move until they are pushed, and that when they move they follow a line of least resistance. In short, whoever the actual hero of *The Moon is a Harsh*

Mistress might be, the actual villain is inertia. This is precisely the opposite of the situation reflected in the books written by such newer and spectacular writers as Brian Aldiss and J. G. Ballard.

A story by J. G. Ballard, as you know, calls for people who don't think. One begins with characters who regard the physical universe as a mysterious and arbitrary place, and who would not dream of trying to understand its actual laws. Furthermore, in order to be the protagonist of a J. G. Ballard novel, or anything more than a very minor character therein, you must have cut yourself off from the entire body of scientific education. In this way, when the world disaster — be it wind or water — comes upon you, you are under absolutely no obligation to do anything about it but sit and worship it. Even more further, some force has acted to remove from the face of the world all people who might impose good sense or rational behavior on you, so that the disaster proceeds unchecked and unopposed except by the almost inevitable thumb-rule engineer type who for his individual comfort builds a huge pyramid (without huge footings) to resist high winds, or trains a herd of alli-

gators and renegade divers to help him out in dealing with deep water.

This precondition is at the root of every important J. G. Ballard creation and is so fundamental to it that it does not need to be put into words. Being buried as it is, it both does not call attention to itself and permits the author's characters to produce the most amazing self-destructive reactions while making reasonably intelligent and somewhat intellectual mouth-noises.

Oddly enough, this is a review of Thomas N. Disch's *The Genocides* (Berkley). But it's rather difficult to speak of the Disch without prior reference to Ballard as the master of the inertial science-fiction novel, just as it is difficult to speak of Ballard without remarking that his work seems to be part and parcel of the science-fiction renaissance currently going on in England.

There is considerably more vigor and talent in operation than ever before on that side of the Atlantic. A great many skilled and intelligent people have suddenly taken to writing this kind of story and have evoked a sharp reader response. This may in fact be the shape of tomorrow's science fiction generally — hell, it may be the shape

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of today's science fiction — and it's only natural that some of the younger writers over here will begin picking up on this cue. Thus, Disch. Thus, too, Disch's publication by Berkley, whose science-fiction editor, Damon Knight, for years was the outstanding representative of this mode of sf writing in America, when it was a minor undercurrent in the big streams of Engineers-Can-Do-Anything school of science fiction. It was Knight who began the paying of serious attention to Ballard, and it is Berkley which is in the forefront of this kind of sf publishing in this country. Knight being also the president of the Science Fiction Writers of America, and heavily influential in a variety of areas accessible by that route, I don't think there's much question but that with so much energy, high talent and dedication devoted to the promulgation of this mode, we'll be seeing quite a bit of this kind of thing.

Let us then see what we have here, as exemplified by *The Genocides*.

This book is the story of probably the last surviving human beings on an Earth which has been in effect plowed up and seeded by mysterious extraterrestrial beings who treat the planet as a farm. They act through the agency of automatic ma-

chines which incinerate everything — cities, cows and people — that will not further the growth of more and more planets. The aliens themselves do not appear, though we are given one of their interoffice memos as a sort of footprint on the beach, to show that operations are being conducted by something other than Man.

The characters in this story are mostly farmers — a small, embattled band led by a religious fanatic who believes the Plant (which is soon discovered to be one single alien plant, creating its own interlacings of hollow subterranean root tunnels) was sent by God, but that it is his duty to God to fight the Plant. So he attempts to grow corn in the wilderness and provides for his people through such expedients as grinding up all strangers into sausage for Thanksgiving dinner. This attempt fails; the automatic incinerators, cruising about the world, locate him, kill most of the people and drive the survivors into a cave, and then down into the root system. Here they survive for a time, while his half-brother sons Buddy and Neil try to find ways to deal with Orville, who will be the old man's successor at reigning in Hell.

Living parasitically in the root system, which warms and nour-

ishes them, the thirty survivors become pests on the Plant. There is a little political mish-mash, some adultery, license, and one striking example of gluttony. More than anything else, there is a great deal of stupidity as these people permit the environment to control them entirely, and finally overwhelm them. Almost all of them die, though the actual examples of violence in this book are relatively few. There is relatively much action restricted to coming and going; trudging up and down the furrows of cornfields in the back-breaking attempts to push back the Plant; running after the escaping cattle; scurrying into the cave; finally wallowing up and down the root-tunnels — Disch asserting, as he must, that roots don't have to be solid to support six-hundred-foot trees with leaves the size of billboards.

This is a run, hide, slither, grope and die book, much like *The Drowned World* except that the encroaching seas are of vegetation, and presumably the world disaster is not entirely of mindless, God-like origin. Unlike *The Wind From Nowhere*, the disaster does not arbitrarily come to an end the instant the last surviving work of Man has been wiped off the face of the Earth.

You have surely heard by now

that this is a very good, and an important book. The verbal formula I get from various respectable acquaintances of mine is that you would never have thought that Disch could have produced anything this good. The verbal formula I get from other respectable friends of mine, wedded to the school of science fiction which takes hope in science and in Man, is that the book is unrelieved trash, ineptly written, pretentious, inconsistent and sophomoric. I personally feel that it reflects a deep and dedicated study of the trappings of a book everybody says is good. It is, as a matter of fact, almost exactly the novel one would expect Thomas Disch to have written; a pudding full of borrowed symbology raisins and can't-miss verbalization; little burst of imaginery in which incinerators are likened to Volkswagens and are thus made deceptively harmless in the minds of the rather dumb, resigned victims.

This kind of second-derivative reading is going to be more and more with us, just as schoolboy history compositions are always careful to mention 1492 and 1066. Disch is such an apt pupil that he has not surprisingly become a strong candidate for salutatorian, and it is understandable why the Chamber of Commerce

is predicting a bright future for him as soon as he goes into the real world. He may even make it. But what is interesting about this book is that in being so unflaggingly derivative of an emerging mode, and in having been effective nevertheless to have so much good opinion behind it, it demonstrates the vitality and strength of that mode whether you like it or not.

It's not going to be easy to arrive at a snappy verdict on this general new kind of science fiction. For one thing, it's fundamentally different from most previous writing in the field — until you go back to the H. G. Wells of "The Country of the Blind" and "Aepyornis Island". (In fact I can see a book called *Cartography of Chaos*, some ten years from now, using the new mode as a demonstration that all U. S. science fiction between say 1930 and 1960 did not derive from classical sources, and that the importance of J. G. Ballard rests in his having singlehandedly returned the field to its main stem). But for purposes of groping closer to the truth, I would like to consider Roger Zelazny's *This Immortal*.

This is an Ace paperback and serves to remind me that Ace is where Philip K. Dick found his first home as a novelist, and that

GALAXY BOOKSHELF

Ace is also G. C. Edmondson's publishers. Soon enough, Zelazny will find himself dealing with glossier packages. Meanwhile, Ace has once again managed to produce an extremely interesting and undeniably important book.

This Immortal is set on an Earth which, after a catastrophic nuclear war, fell within the political bounds of a humanold civilization based on the Vegan solar system. This setting accomplishes a number of things beyond the immediate nullification of a large amount of property and industrial capacity. It allows for the presence in the story of a number of mutations, fulfilling the requirement met in Brian Aldiss's *Greybeard* by the rumors of animal-people in the shrubbery, and it has brought the center of civilization and thinking back to the Mediterranean Basin.

Thus, in several swoops, *This Immortal* fulfills many of the conditions required by the new mode. It evokes legends, it is actively regressive in a number of senses, including the special one met by the revived giant saurians in Ballard's *The Drowned World*, and it conveys a very strong sense that the works of Man and the thoughts of Man may not be very considerable at all when viewed in a real light. Certainly, science in this world is very little but technology, and

the technology is peripheral. Cannibal tribes carry rifles, and the disassembly of the Great Pyramid is being filmed with a working force of actors, in order that the film may be run backward as a dramatization of the Pyramid's building. But these little trappings of Man, the tool-user, are expedients or auxiliaries to which an educated and cultured man may put his hand when the necessity arises.

This is exactly the sort of civilization which would regard the aeropile as an excellent and an amusing end in itself, and would regard any offer to found an industry upon it as being a project for signalling around the world with enlarged baby rattles. Earth is a museum planet, whose curator is an odd sort of chap named Conrad Nimikos, who just happens to be immortal and has consequently created and abandoned a variety of identities in the past.

It's Conrad who makes all the difference in this book. Conrad seems to fit the Greek ideal — as I understand the Greek ideal. He seems to understand that disaster is Man's lot. He also understands that struggle is Man's lot, and so though he may rage at heaven, and go into a killing fit when he hears that an earthquake has killed his beloved, he keeps this event separ-

ate in his mind from his duty.

Duty operates on several levels; one of them is his present assignment, which is guiding an influential Vegan around the Earth. Another level is his duty to Earth. In a previous avatar, he has founded and energetically directed a movement to break down the then current Vegan practice of using Earth's resorts as pleasure domes. Now, having made that point, he is about to abandon a coexistent attempt to bring emigre Earthmen back from their heady preoccupation with Vegan society, where the crumbs they gather appear to them preferable to life on Earth. He is consequently involved with a variety of adventures, including a spell of being captured by cannibals whose witch doctor has made an artificial vampire of mindless insensibility and overwhelming puissance.

Here is a symbol of Man's helplessness and technology's perversion if there ever was one. The trouble with its endurance as a symbol is that it gets the tar whipped out of it, as it logically should once somebody has had the forethought to slip it a little strychnine.

The human winner in this instance is not Conrad, who is very fast and deadly with his hands as well as his mind, but Hassan, a professional assassin

who is sometimes Conrad's friend and sometimes his adversary. I think if we're looking for symbols, Hassan's purpose in this book is to provide a contrast between the educated deadly man and the killing machine. In fact, at one point Conrad kills a killing machine — a fighting robot which Hassan uses for a sparring partner and cannot himself overcome.

This is a story of adventures and perils, high intrigue, esthetics, politics — in other words, of a world both external and internal. It is set up to be easily eligible for the kind of treatment the new mode would give it, and yet it is utterly charming, optimistic, and infinitely better-educated.

The immediate problem in this book — the relationship of Earth to Vega — is solved too neatly. It's perhaps fitting that a novel largely concerned with the Aegean view of life should solve its major complication with

a god from a machine, but it's bad practice nevertheless. However, while the Disch does a fair job of weaving its spell around you, and convincing you that really, it's all downhill, the Zelazny does a superb job of offhandedly showing that such a view of life is a passing fit, and that there is considerably more on the other side. Oversimplifying, you might say that *The Genocides* is based on intricately worked out, deliberate self-limitation, while *This Immortal* is based on thoroughly understood, inexhaustible engagements with one's own grasp. The two writers involved seem to be just about equally talented within their own chosen horizons, but Zelazny I think it going to prove to be the important and in fact the enduring one of the two — one of the most solid talents to show up in their field in years — because his horizon is goddamn much bigger.

—Algis Budrys

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The Palace of Love

by JACK VANCE

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*Gersen ransacked Earth to find his
enemy . . . but the trail led across
the starways to the Palace of Love!*

IX

At ten o'clock the following morning Gersen returned to the houseboat. All was changed. The sun was yellow and warm. The sky, shining with the blue of Earth, was flecked here and there with fair-weather clouds. Navarth sat hunched on his foredeck, sunning himself.

Gersen descended the ladder, walked along the landing. He stopped by the gangplank. "Ahoy. May I come aboard?"

Navarth slowly turned his head, inspected Gersen with the hooded yellow eyes of a sick chicken. He shifted his gaze to watch a string of barges sliding silently along on jets of ionized water. He spoke in an

WHAT HAS GONE BEFORE

To one purpose had Kirth Gersen dedicated his life: To revenge himself against the massacre of his family by the Demon Princes of Space. For that he had trained himself in the arts of assassination and intrigue; for that he had given up all thought of happiness, marriage and home.

Two of them were vanquished at his hands, but others remained. He followed the trail of the next on his list — Viole Falushe, proprietor of the galaxy-feared Palace of Love — across half a dozen solar systems until it came to the ancient planet of Earth itself. There, posing as a reporter of the newsmagazine which in fact he owned, Gersen enlisted the aid of the drunken, half-mad poet Navarth to set a trap for Viole Falushe. For bait he used a strange and beautiful girl. . . .

But Falushe escaped the trap, and Gersen was left without his prey.

even voice: "I have no sympathy for persons of weak liver, who raise their sails only to drift downwind."

Gersen took the remark as implicit permission to board the boat. "My shortcomings aside, what eventuated last night?"

Navarth querulously brushed away the question. "We have strayed. The quest, the undertaking — "

"What quest? What undertaking?"

" — leads by a devious route. First there is sunlight. The road is broad and white, but soon it narrows. At the end is an awesome tragedy. A thousand mind-splitting colors, possibly the sun-

set. If I were young once more, how I would alter events! I have been blown by winds like a bit of trash. You will find it the same. You failed to seize the occasion! Each change comes a single time — "

Gersen found the remarks uninspiring. "All this to the side, did you speak last night to Viole Falushe?"

Navarth raised a skinny hand in the air, the palm cupped forward. "Tumult! A reel of shapes! Angry faces, flashing eyes, a struggle of passions! I sat with a roaring in my ears."

"What then of the girl?"

"I agree in every respect. Magnificent."

"Where is she? Who is she?"

Navarth's attention became fixed upon an object in the water: a white and gray seagull. Evidently he planned no meaningful responses.

Gersen went on patiently: "What of Viole Falushe? How did you know he would be at the Celestial Harmony Cafe?"

"Nothing could be simpler. I told him that we would be there."

"When did you inform him?"

Navarth made a fretful movement. "Your questions are tiresome. Must I set my watch by yours? Must I wisely consult with you? Must I —"

"The question seemed simple enough."

"We live by different referents. Transpose if you like; I cannot."

Navarth was plainly in a cantankerous mood. Gersen said soothingly, "Well then, for one reason or another, we missed Viole Falushe last night. How do you suggest that we find him now?"

"I make no more suggestions. What is your concern with Viole Falushe?"

"You forget that I have already explained this to you."

"To be sure. Well, as to arranging a meeting, this is no great problem. We will invite him to a small banquet, perhaps."

Something in Navarth's tone, S or perhaps the quick glittering glance which accompanied the words, put Gersen on his guard.

"You think he would attend?"

"Certainly, if it were a carefully planned affair."

"How can you be sure? How do you know definitely that he is on Earth?"

Navarth raised a monitory finger. "Have you ever watched a cat walk through the grass? At times it halts with one paw raised and calls out. Is there a reason to these sounds?"

Gersen could not trace the linkage of ideas. He said patiently, "What of this party, or banquet, whatever it is to be?"

"Yes, yes, the party!" Navarth had become interested now. "It must be exquisitely arranged, and it will cost a great deal. A million SVU."

"For one party? One banquet? Who is to be invited? The population of Sumatra?"

"No. A small affair of twenty guests. But arrangements must be made and quickly. I am a source, an inspiration for Viole Falushe. In sheer majesty he has excelled me. But I will prove that in a smaller compass I am superior. What is a million SVU? I have dreamed away more in an hour."

"Very well," said Gersen. "You shall have your million." A day's income, he reflected.

"I will need a week. A week is hardly enough, but we dare delay no longer."

"Why not?"

"Viole Falushe returns to the Palace of Love."

"How do you know?"

Navarth looked off across the water. "Do you realize that a crook of my finger disturbs the faintest star? That every human thought disturbs the psychic parapsphere?"

"This is the source of your knowledge, psychic perturbations?"

"As good a method as any other. But now as to the party: there are conditions. Art implies discipline. The more excellent the art, the more rigorous the discipline. Hence you must concede to certain limitations."

"What are they?"

"First the money. Bring me a million SVU immediately!"

"Yes, of course. In a sack?"

Navarth gave an indifferent wave of the hand. "Secondly, I am in charge of arrangements. You may not interfere."

"Is this all?"

"Thirdly, you must conduct yourself with restraint. Otherwise you will not be invited!"

"I would not care to miss this

party," said Gersen. "But I too will make conditions. **First**, Viole Falushe must be **present**."

"Never fear as to that! Impossible to keep him away!"

"Secondly, you must identify him to me."

"No need. He will identify himself."

"Third, I want to know how you plan to invite him."

"How else? I call him by telephone, just as I call my other guests."

"What is his number code?"

"He can be reached by coding SORA-6152."

Gersen nodded. "Very well. I will bring you your money at once."

Gersen returned to the Rembrandt Hotel, where he ate a reflective lunch. How mad was Navarth? His spasms of lunacy alternated with periods of canny practicality, both somehow conducing to Navarth's convenience. The call code SORA-6152, now. Navarth had yielded it with suspicious facility.

Gersen could no longer restrain his curiosity. He went to a nearby booth, blanked the lens, touched the buttons. The presentation appeared: the outline of a startled human face. A voice spoke. "Who calls?"

Gersen frowned, bent his head

forward. The voice spoke again: "Who calls?" It was Navarth's voice.

Gersen said, "I wish to speak to Viole Falushe."

"Who calls?"

"One who wishes to make his acquaintance."

"Please leave your name and call number. In due course you may receive a return call." And Gersen thought he heard a poorly suppressed chuckle.

Thoughtfully he left the booth. It was galling to be outwitted by a mad poet. He went to the Bank of Vega, called for and received a million SVU in cash. He packed the notes into a case and returned by cab out Boulevard Castel Vivence to the Fitlingasse.

As he alighted he saw Zan Zu, the girl from Eridu, emerging from a fishmonger's shop with a paper cornucopia full of fried smelt. She wore her black skirt, and her hair was a tousle, but some of the magic of two nights before still hung about her. She went to sit on an old baulk and, looking out across the estuary, munched the fish. Gersen thought she appeared tired, listless, a trifle haggard. He proceeded to the houseboat.

Navarth took the money with a noncommittal grunt. "The party then, seven days hence."

"Have you issued invitations?"

"Not yet. Leave all to me. Viole Falushe will be among the guests."

"I presume you will call him at SORA-6152?"

"Of course." Navarth nodded three times, with great gravity. "Where else?"

"And Zan Zu — she is to come?"

"'Zan Zu'?"

"Zan Zu, the girl from Eridu."

"Oh — that one. It might not be wise."

X

The man's name was Hollister Hausredel; his position, registrar at the Philidor Bohus Lyceum. He was a man of early middle age, with an almost total lack of distinguishing characteristics. He wore modest gray and black and lived in one of the Sluicht apartment towers with his wife and two small children.

Gersen, deciding that his business with Hausredel would go best at maximum distance from the school, approached him as he left the tube escalator a hundred yards from his apartment building.

"Mr. Hausredel?"

"Yes?" Hausredel was somewhat startled.

"I wonder if we might talk

for a moment or two." Gersen indicated a nearby coffee bar. "Perhaps you would have a cup of coffee with me."

"What do you want to talk about?"

"A matter concerning a service you can do for me, to your profit."

The talk went without difficulty. Hausredel was more flexible than his superior, Dr. Willem Ledinger. On the following day Hausredel met Gersen at the coffee bar, with a large paper envelope. "Here we are. All went well. You have the money?"

Gersen passed across an envelope. Hausredel opened the flap, counted, tested one or two of the notes with his fake-meter. "Good. I hope I have helped you as much you have helped me." And shaking Gersen's hand warmly, he departed from the coffee bar.

Gersen opened the envelope. He extracted two photographs copied from those in the school archives. For the first time Gersen saw the face of Vogel Filschner.

It was a sullen face. Black eyebrows canted down over burning black eyes, the mouth hung in a discontented droop. Vogel had not been a handsome boy. His nose was long and lumpy, his cheeks were

puffy with baby fat, his black hair was overlong and even in the photograph seemed unclean. A more striking contradiction to the popular image of Viole Falushe was hard to imagine. But of course this was Vogel Filschner at the age of fifteen, and many changes had undoubtedly taken place.

The other picture was that of Jheral Tinzy. A delightfully pretty girl. Her black hair was glossy, her mouth pursed as if she were restraining a mischievous secret. Gersen studied the picture at length. It afforded him rather more perplexity than illumination, inasmuch as the face in the photograph was almost exactly that of Zan Zu, the girl from Eridu.

Thoughtfully Gersen examined the remaining material in the envelope. It was information regarding other members of Vogel Filschner's class with their present whereabouts, when it was known.

Gersen returned to the picture of Jheral Tinzy. The coquetry was absent in the face of Zan Zu. Otherwise one was a replica of the other. The resemblance could not be accidental.

Gersen rode by tube to Station Hedrick in Ambeules, took the now familiar route up the Boulevard Castel Vivence.

The time was early evening; sunset color still lingered along the estuary. The houseboat was dark; no one responded to Gersen's rapping. He tested the button.

The door slid open.

Gersen entered; the lights came aglow. He went to Navarth's telescreen. The code, as he had expected, was SORA-6152. The crafty Navarth! To the side was an index. Gersen looked through the listings, finding nothing of interest. He scrutinized the wall, the underside of the shelf, the top molding of the telescreen, on the chance that Navarth might have noted down a number he did not care to entrust to his index, finding nothing. From the shelf Gersen took down an untidy portfolio, containing ballads, odes, dithyrambs: *A Growl for Gruel*, *The Juices I have Tramped*, *I Am a Darting Minstrel*, *They Pass!*, *Drusilla's Dream*, *Castles in the Clouds* and *the Anxieties of Those Who Live Directly Below by Reason of Falling Objects and Wastes*.

Gersen put the poems aside. He inspected the bedrooms. On the ceiling of that occupied by Navarth was the photograph of a naked woman, twice life-size, arms high and outspread, legs extended and stretched apart,

hair afloat, as if she were engaged in a vigorous leaping calisthenic. Navarth's wardrobe contained a fantastic assortment of costumes of every style and color. On a shelf were hats, caps, and helmets. Gersen explored the drawers and cabinets, finding many unexpected objects, but none which seemed to bear upon the matter at hand.

There were two other small bedrooms, both finished in a rather spartan manner. One of these was pervaded with faint sweet perfumes, violet, or lilac. In the other was a desk. Here, by a window overlooking the estuary, Navarth evidently created his poetry. The desk was crammed with notes, names, apostrophes and allusions — a discouraging volume of material which Gersen did not even trouble to explore.

He returned to the main saloon and, pouring himself a glass of Navarth's fine *moscato*, dimmed the lights, settled into the most comfortable chair.

An hour passed. The last traces of afterglow departed the sky; the lights of Dourrai glinted on the waves. A dark shape became visible, a hundred yards offshore: a small boat. It approached the houseboat; there was the rattle of oars being shipped and footsteps on the deck. The door slid back. Zan



Zu entered the half-dark saloon. She gasped in fear and sprang back.

Gersen caught her arm. "Wait, don't run away. I've been waiting to talk to you."

Zan Zu relaxed, came into the saloon. Gersen turned up the lights. Zan Zu sat warily on the edge of a bench. Tonight she wore black trousers, a dark blue jacket; her hair was tied back with black ribbon; her face was white and wan.

Gersen looked at her a moment. "Are you hungry?"

She nodded.

"Come along then."

In a nearby restaurant she ate with an appetite which nullified Gersen's doubts as to the state of her health. "Navarth calls you Zan Zu. Is that your name?"

"No."

"What is your name?"

"I don't know. I don't think I have a name."

"What? No name? Everyone has a name."

"I don't."

"Where do you live? With Navarth?"

"Yes. For as long as I remember."

"And he has never told you your name?"

"He has called me by many names," said Zan Zu somewhat

ruefully. "I rather like not having a name. I am anyone I wish to be."

"Who would you like most to be?"

She flashed Gersen a sardonic glance, gave her shoulders a shrug. Hardly a talkative girl, thought Gersen.

She asked a sudden question: "Why are you interested in me?"

"For various reasons — some complicated, some simple. To begin with, you're a pretty girl."

Zan Zu considered the statement a moment. "Do you think so indeed?"

"Hasn't anyone else told you as much?"

"No."

Strange, thought Gersen.

"I talk to very few men. Or women. Navarth tells me there is danger."

"What kind of danger?"

"Slavers. I don't want to be a slave."

"Understandable. Aren't you afraid of me?"

"A little."

Gersen signaled a waiter. After consultation he ordered a large piece of cherry torte floating in whipped cream, which was set before Zan Zu from Eridu.

"Well, then," said Gersen, "have you been to school?"

"Not a great deal." Gersen learned that Navarth had taken her here and there to odd corners of the world: remote villages and islands, gray cities of the north, resorts of Sinkiang, the Sahara Sea, the Levant. There had been an occasional tutor, seasons at somewhat unusual schools, much reading of Navarth's books.

"Not a very orthodox education," Gersen remarked.

"It suits me well enough."

"And Navarth — what is his relationship to you?"

"I don't know. He has always been there. Sometimes he is — " she hesitated — "Sometimes he is kind; other times he seems to hate me. I don't understand him. But then, I am not particularly interested. Navarth is Navarth."

"He's never mentioned your parents?"

"Never."

"Haven't you asked him?"

"Oh yes. Several times. When he is sober he becomes flamboyant: 'Aphrodite rose from sea foam. Lilith was the sister of an ancient god. Arrenice sprang to life when lightning struck a rose tree.' And I may select a source at my own discretion."

Gersen listened, surprised and amused.

"When Navarth is drunk, or

when he is exalted with poetry he tells me more. But perhaps it is less. He frightens me. He speaks of the 'journey'. I ask 'journey where?' and he won't say. But it must be something terrible . . . I don't want to go."

She fell silent. The conversation, so Gersen noticed, had not diminished the gusto with which she had attacked the torte. "Has he ever mentioned a man named Viole Falushe?"

"Perhaps. I have not listened."

"Vogel Filschner?"

"No. Who are these men?"

"The same man. Using different names. Do you remember, at the Celestial Harmony Cafe, the man who stood by the railing?"

Zan Zu looked down into her coffee cup, gave a slow thoughtful nod.

"Who was he?"

"I don't know. Why do you ask?"

"Because you started to go to him."

"Yes. I know."

"Why? If you don't know him?"

The girl twisted the cup back and forth, watching the swirls of black liquid. "It's hard to explain. I knew he was watching me. He wanted me to come. Navarth had brought me there.

And you were there. As if everyone wanted me to go to him. As if I were — something to be sacrificed. I was dizzy. The room was unsteady. Perhaps I had drunk too much wine. But I wanted to have all over with. If this were my fate, I would know . . . But you wouldn't let me go. I remember this much. And I — " She stopped and took her hands away from the coffee cup. "Anyway, I know you mean me no harm."

Gersen said nothing. Zan Zu asked tentatively, "Do you?"

"No. Are you finished?"

They returned to the houseboat, which was as they had left it. "Where is Navarth?" Gersen asked.

"He prepares for his party. He is tremendously excited. Since you have come all is different."

"And after I left the Celestial Harmony Cafe the other night, what happened?"

Zan Zu frowned. "There was talk. It seems there were lights in my eyes, orange and green blurs. The man came to the table and stood looking down at me. He spoke to Navarth."

"Did you look at him?"

"No. I don't think so."

"What did he say to Navarth?"

Zan Zu shook her head.

"There was a sound in my ears, like rushing water, or the roar of the wind. I didn't hear. The man touched my shoulder."

"And after that — what?"

Zan Zu grimaced. "I don't remember . . . I can't remember."

"She was drunk!" cried out a voice. Navarth rushed into the saloon. "Carefully drunk! What are you doing aboard my private houseboat?"

"I came to learn how you are spending my money."

"All is as before. Now depart at once."

"Come, come," said Gersen. patiently. "This is a cavalier tone to take to the man who repaired your houseboat."

"After first stoving it in? Bah! Has there even been an act to equal it?"

"I understand that in your mouth you contrived a few outrages of your own."

"In my youth?" sputtered Navarth. "I have contrived outrages all my life!"

"What of the party?"

"It is to be a poetic episode, an exercise in experiential art. I think it best that you do not attend this particular party, as — "

"What? I'm paying for it! If I don't come, give me back my money."

Navarth flung himself petul-

antly into a chair. "I expected you to take this line."

"I'm afraid so. Where is the party to be held?"

"We meet at the village Kussines, twenty miles to the east. The rendezvous is precisely at the hour of two in the afternoon, in front of the inn. You must wear harlequinade and a domino."

"Viole Falushe is to come?"

"Indeed, indeed. Have I not made all clear?"

"Not altogether. All are to wear dominoes?"

"Naturally."

"How will I recognize Viole Falushe?"

"What a question to ask. How can he hide? Black radiation hangs about him. He exudes a dread sensation."

"These qualities may be obvious," said Gersen. "Still — how else may he be identified?"

"You must determine this at the time. At the moment, I do not know myself."

XI

At ten minutes before the appointed hour Gersen parked his rented air-car in a meadow on the outskirts of Kussines and alighted. A cloak concealed the harlequinade; he carried the domino in his pocket.

The afternoon was soft and sunny, fragrant with the exhalations of autumn. Navarth could hardly have hoped for a finer day, thought Gersen. He checked his garments carefully. The harlequinade offered little scope for concealment, but Gersen had made the best of the situation. Inserted horizontally into his belt was a blade of thin keen glass, the buckle serving as a handle. Under his left arm hung a projac; in his right sleeve was poison. Thus encumbered, Gersen swept his cloak about him and marched into the village: a collection of ancient black iron and melt-stone structures on the shore of a small lake. The setting was bucolic and charming, almost medieval. The inn, perhaps the newest structure of the village, was at least four hundred years old. As Gersen approached a young man in gray and black stepped forward. "For the afternoon party, sir?"

Gersen nodded and was led to a dock at the edge of the lake where a canopied boat awaited. "Domino, please," said the young man in uniform. Gersen donned the mask, stepped aboard the boat and was conveyed to the opposite shore.

It seemed that he was one of the last to arrive. At a semi-circular buffet stood perhaps

twenty other guests, all self-conscious in their costumes. One who could only be Navarth came forward, divested Gersen of his cloak. "While we wait, taste this vintage; it is supple and light and will amuse you."

Gersen took the wine and stepped aside. Twenty men and women. Which was Viole Falushe? If he were present, he was not readily apparent. A slender young woman stood stiffly nearby, holding her goblet as if it contained vinegar. Navarth had allowed Zan Zu to the party after all, thought Gersen. Or dragooned her into coming, to judge her attitude. He counted. Ten men, eleven women. If parity of sexes were to be observed, there still remained at least one man to arrive.

Even as Gersen counted, the white-canopied punt drifted into the dock and a man stepped ashore. He was tall and lean. His manner combined indolent ease with a taut wariness. Gersen inspected him carefully. If this were not Viole Falushe, he must be considered the most likely candidate.

The man slowly approached the group. Navarth hurried forward with a crouch that was almost servility and took the cloak which the man tossed to him. With the cloak hung on its peg and a goblet of wine in the new-

comer's hand, Navarth's ebullience returned. He waved his arms, walked back and forth with long springing strides. "Friends and guests, all are now arrived. A chosen group of nymphs and under-gods, poets and philosophers. Notice, as we stand here in the meadow, our patterns of orange and red, and black and red; we contrive an unconscious pavanne! We are performers, participants and spectators at the same time! The frame within which spontaneity is confined — the theme, so to speak — is that which I have ordained; the variations, the intricacies, counterplay and development are our mutual concern. We must be subtle and free, carefully reckless, at all times consonant; our figures must never leave the chord!" Navarth held his goblet up into a shaft of sunlight, drank with a grand flourish, pointed dramatically through the trees. "Follow me!"

Fifty yards away was a charabanc with a tasseled yellow canopy, sides enameled in red, orange and green. Benches cushioned in bright orange plush ran along the sides. In the center kneeling marble satyrs supported a marble slab on which were dozens of bottles of every size, shape and color, all containing the same soft wine.

The guests climbed aboard, and the charabanc slid off, silent and easy on its repulsion skids.

Through a beautiful park drifted the charabanc. Magnificent vistas opened to all sides. The guests gradually discarded restraint; there was conversation and laughter, but most were content to sip the wine and enjoy the autumn scenery.

Gersen scrutinized each man in turn. The last man to arrive still seemed the most likely candidate for the identity of Viole Falushe; Gersen thought of him as Possibility No. 1. But at least four others were tall, lean, dark, composed: Possibilities No. 2, No. 3, No. 4 No. 5.

The charabanc halted, and the group stepped down into a meadow sprinkled with purple and white asters. Navarth, hopping and skipping like a young goat, led the group under a grove of tall trees. The time was now about three o'clock. Afternoon sunlight slanted through the masses of golden leaves, to play upon a great rug of tan and golden silk with a border of gray-greens and blues. Beyond stood a silken pavilion supported by white spiral poles.

Spaced around the rug were twenty-two tall peacock-tail chairs. Beside each stood an antique tabouret of ebony inlaid

with mother-of-pearl and cinabar, with a vermilion bowl of crystalized spice on each. Working by some mysterious rationale Navarth arranged his guests in the splendid chairs. Gersen found himself at one end of the rug with Zan Zu several chairs distant, and the various Possibilities at the far side. From somewhere came music, or more accurately, near-music: a succession of wry quiet chords, sometimes so soft as to be unheard; sometimes so complex as to be equivocal and perplexing, never completing or fulfilling a progression, always of a haunting sweetness.

Navarth took his own place, and all sat quietly. From the pavilion came ten young girls naked but for golden slippers and yellow roses over their ears. They bore trays on which were goblets of heavy green glass, containing the same delicate wine as before.

Navarth remained in his chair; the other guests were content to do likewise. Sun-drenched yellow leaves floated down to the golden rug; an aromatic odor hung in the air. Gersen sipped his wine cautiously; he could not afford to be lulled, soothed. Close at hand was Viole Falushe, a situation for which he had paid a million SVU. The sly Navarth had not

kept the letter of his promise. Where was the "aura of black radiation" Navarth had mentioned? It seemed to hang heaviest around Possibilities No. 1, No. 2 and No. 3, but in this regard Gersen was disinclined to trust his parapsychic powers.

A tension, an expectancy, began to be felt. Navarth sat crouched in the chair, as if already bemused. The naked girls, dappled by sunlight and leaf-shadows, poured wine, moving slowly, as if walking under water.

Navarth lifted his head, as if hearing a voice or a far sound. He spoke in an exultant voice, and the vagrant chords seemed to match themselves to the rhythm of his speech, creating music. "Some here have known emotion in many phases. No one can know every emotion, for these are both infinite and fugitive. Some here are unaware, untouched, unexplored — and know it not even themselves. See me! I am Navarth, called the mad poet! But is not every poet mad? It is inevitable. His nerves are conductive and transport uncontainable gushes of energy. He fears. How he fears! He feels the movement of time; between his fingers it is a warm pulsing, as if he grasped an exposed artery. At a

sound — a distant laugh, a ripple of water, a gust of wind — he becomes sick and faints — because never, in all the extent of time can this sound, this ripple, this gust recur. Here is the deafening tragedy of the 'journey' which we all undertake! Would the mad poet want it any differently? Never exulting? Never desperate? Never clasping life against his bare nerves?" Navarth leapt to his feet and danced a jig. "All here are mad poets. If you would eat, the delicacies of the world await. If you would reflect, sit in your chairs and watch the fall of the leaves. Notice how slow is their motion; here time has slowed on our behalf. If you would exalt yourself, this magnificent vintage never cloy nor stupefies. If you would explore erotic proximities, or middle distances, or indistinct horizons — bowers and dells surround us." His voice descended an octave; the chords became measured and slow. "There can be no light without shade, no sound without silence. Exultation skips along the verge of pain. I am the mad poet, I am Life! Hence, by the inevitable consequences, Death is here as well. But where Life cries out its meanings, Death sits quiet. Look then among the masks!"

And Navarth pointed from

one silent harlequin to another, around the circle. "Death is here, Death watches Life. It is not witless, aimless Death. It is Death with a snuff-cap, intent on a single candle. So — do not fear, unless you have cause to fear. . . ." Navarth turned his head. "Listen!"

From far away came a merry sound: music. It grew louder and louder still, and into the glade marched four musicians — one with castanets, one with guitar and two fiddlers — and they played the most impelling and merry jigs, enough to set the pulses racing. Suddenly they stopped short in their music. The castanet player brought forth a flute, and now the music was a heartbreaking melancholy. And playing in this fashion they moved off through the trees and presently were lost to hearing. The soft indecisive chords went on as before, without beginning or end, as easy and natural as breathing.

XII

Gersen had become uneasy. Circumstances were moving beyond his control. In his harlequinade, he felt inept. Was this another of Navarth's crafty plays? Were Viole Falushe to stand before him now and announce himself, Gersen could

never act. The autumn air was heavy with haze, the wine had made him maudlin. He could never spill blood on the magnificent rug of tawny tan and gold. Nor even on the carpet of golden leaves beyond.

Gersen leaned back in his chair, amused and disgusted with himself. Very well then. For the moment he would sit and reflect. Some of the other guests were stirring. Perhaps Navarth's talk of death had chilled them, for they moved tentatively and carefully. Gersen wondered to whom Navarth had referred, in his talk of death The girls moved sedately along the line of chairs, pouring wine. As one bent near Gersen he caught the scent of her yellow rose; straightening, she smiled at him and passed on to the next guest.

Gersen drank the wine. He leaned back in the chair. Even if he had become detached and passionless, he could yet speculate. Certain of the guests had risen to their feet and, leaving their high-backed chairs, mingled and talked in soft husky voices. Possibility No. 1 stood brooding. Possibility No. 2 stared fixedly at Zan Zu. Possibility No. 3, like Gersen, sprawled in his chair. Possibilities No. 4 and No. 5 were among those talking.

Gersen looked toward Na-

varth. What next? Navarth's intention must extend beyond the instant. What more had he planned? Gersen called to him. Navarth turned aside reluctantly.

Gersen asked, "Is Viole Falushe here?"

"Tish!" exclaimed Navarth. "You are a monomaniac!"

"I have been told as much before. Well, is he here?"

"I have invited twenty-one guests. Counting myself, twenty-two are present. Viole Falushe is here."

"Which is he?"

"I don't know."

"What? You don't know?" Gersen sat upright, aroused from his lethargy by Navarth's double-dealing. "We must have no misunderstanding, Navarth. You accepted a million SVU from me, agreeing to fulfill certain conditions."

"And I have done so," snapped Navarth. "The simple truth is that I do not know in what semblance Viole Falushe currently walks. I knew the boy Vogel Filschner well. Viole Falushe has altered his face and manner. He might be one of three or four. Unless I were to unmask this group, send away those I recognized until one remained, I could not give you Viole Falushe."

"Very well. This we shall do."

Navarth would not submit. "My life might well be slid from my body by one route or another. I object to this. I am a mad poet, not a lummox."

"Immaterial. This is how we will act. Be so kind as to summon your candidates into the pavilion."

"No, no!" creaked Navarth. "It is impossible. There is an easier way. Watch the girl! He will go to her. And then you will know."

"A half-dozen might go to her."

"Then claim her. Only one man would challenge you."

"And if no one challenges?"

Navarth held out his arms. "What can you lose?"

Both turned to look toward the girl. Gersen said, "What can I lose indeed? What is her relationship to you?"

"She is the daughter of an old friend," declared Navarth suavely. "She is, in effect, my ward. I have been at pains to nurture her and bring her nicely to maturity."

"And this now accomplished, you offer her here and there to passing strangers?"

"The conversation becomes tiresome," said Navarth. "Look. A man approaches the girl!"

Gersen swung around. Possibility No. 2 had approached Zan Zu and was talking in a

manner unmistakably ardent. Zan Zu listened politely. As in the Celestial Harmony Cafe Gersen felt a surge of emotion. Lust? Jealousy? Protective instinct? Whatever the nature of the urge, it compelled him to step forward and join the two.

"You are enjoying the party?" Gersen asked with factitious good-fellowship. "A wonderful day for such an outing. Navarth is a magnificent host; still he has introduced me to no one. What is your name?"

Possibility No. 2 answered courteously: "Navarth doubtless has good reason for the neglect; best that we do not divulge our identities."

"Sensible," said Gersen. He turned to Zan Zu. "Still, what is your opinion?"

"I have no identity!"

Possibility No. 2 suggested: "Why not approach Navarth and inquire his thoughts on the subject?"

"I think not. Navarth would become confused. He has pounded a fallacy. He seems to advocate intimate relationships between walking costumes. Is this feasible? I doubt it. Certainly not at the level of intensity Navarth would insist upon."

"Quite so, quite so," said Possibility No. 2. "Be a good fellow and leave us to our-

selves. The young lady and I were enjoying a private discussion."

"My apologies for interrupting you. But the young lady and I already had planned to gather flowers from the meadow."

"You are mistaken," said Possibility No. 2. "When all wear harlequinade, error is easy."

"If there has been error, it is for the best, as I prefer this delightful young flower-picker to the last. Be so good as to excuse us."

Possibility No. 2 was amiability itself. "Really, my good fellow, your facetiousness has run its course. Surely you must see that you are intruding?"

"I think not. In a party of this sort, where experience is to be clasped to the naked nerves, where Death walks, there is wisdom in flexibility. Notice the woman yonder. She appears loquacious and prepared to discuss every subject in your repertory. Why not join her and chat away your heart's content?"

"But it is you she admires," said Possibility No. 2 brusquely. "Be off with you."

Gersen turned to Zan Zu. "Apparently you must make the choice. Conversation or wildflowers?"

Zan Zu hesitated, looking from one to the other. Possibility No. 2 fixed her with a gaze of burning intensity. "Choose — if there indeed is a choice — between this lout and myself. Choose — but choose carefully."

Zan Zu demurely turned to Gersen. "Let us pick flowers."

Possibility No. 2 stared, looked away toward Navarth as if to call upon him to intercede, then thought better of it and walked away.

Zan Zu asked, "Are you really anxious to pick wild flowers?"

"You know who I am?"

"Of course."

"I don't care to pick wild flowers, unless you do."

"Oh . . . What then do you want of me?"

Gersen found the question hard to answer. "I do not know myself."

Zan Zu took his arm. "Let us go to look for flowers, and perhaps we will find out."

Gersen looked around the group. Possibility No. 2 watched from a distance. Possibilities No. 1 and No. 3 appeared to pay them no heed. He started off through the trees, Zan Zu leaning on his arm. Gersen put his arm around her waist; she sighed.

Possibility No. 2 gave a quick jerk of the shoulders and, by

this motion, seemed to cast off restraint. He came after Gersen with soft portentous strides. In his hand he carried a small weapon. Behind, so Gersen saw in near-instantaneous glimpse, stood Navarth, looking after, his posture a curious superimposition of shame on glee.

Gersen pushed Zan Zu to the ground, ducked behind a tree. Possibility No. 2 halted. He turned toward Zan Zu and, to Gersen's shocked amazement, pointed his weapon.

Gersen leapt from behind the tree, struck the man's arm; the weapon threw a sear of energy into the ground. The two confronted each other, eyes blazing.

There was a shrill blast of whistle and from the forest come the thud of heavy feet. Gendarmes swarmed forth, a dozen or more, urged by a lieutenant in a golden helmet and a furious old man in brocaded gray.

Navarth stepped forward haughtily. "What is the meaning of this intrusion?"

The old man, who was short and overweight, bounded forward to shake his fist. "What the devil are you up to, trespassing upon my private property? You are a jackanapes! And these naked girls — an absolute scandal!"

In a stern voice Navarth demanded of the lieutenant: "Who is this old rogue? What right does he have to intrude upon a private party?"

Now the old man, stepping forward, discerned the rug, and went pale. "Behold!" he whispered huskily. "My priceless silk Sikkim rug! Spread out for these rascals to cavort upon. And my chairs, oh my precious Bahadurs! What else have they stolen?"

"This is balderdash!" stormed Navarth. "I have rented these premises and hired the furniture. The owner is Baron Caspar Heaulmes, who is at a sanatorium for his health."

"I am Baron Caspar Heaulmes!" cried the old man. "I do not know your name, sir, behind that ridiculous mask, but I perceive you to be a black-guard! Lieutenant, do your duty. Take them all away. I insist on the fullest investigation!"

Navarth threw his hands into the air and argued the case from a dozen viewpoints, but the lieutenant was inexorable. "I fear I must take all into custody. Baron Heaulmes is making a formal complaint."

Gersen, standing to the side, had been watching with great interest, simultaneously noting the movements of Possibilities No. 1, No. 2, No. 3. Whichever was

Viole Falushe — and it would seem to be Possibility No. 2 — he would be sweating heavily at this moment. Once he were arrested and taken into court, his identity must become known.

Possibility No. 1 stood dour and dismal; Possibility No. 2 was carefully assessing the situation, looking this way and that; Possibility No. 3 seemed unconcerned, even amused.

The lieutenant by this time had seized Navarth, charging him with trespass, theft, offenses against public morality and simple assault — the last arising from his attempt to kick Baron Heaulmes. The remaining gendarmes now commenced to herd the guests toward a pair of carcel wagons which had descended to the meadow. Possibility No. 2 loitered at the edge of the group and, taking advantage of Navarth's obstreperous behavior, slipped behind a tree. Gersen raised up a shout; a pair of gendarmes looked around, bawled peremptory orders and marched forward to conduct Possibility No. 2 to the carcel-wagons. Possibility No. 2 jumped back among the trees. When the gendarmes ran in pursuit there came a dire flash of radiation; once, twice, and two men lay dead. Possibility No. 2 sprinted away through the forest and was lost to view. Gersen gave chase, but

halted after a hundred yards, fearing ambush.

Shedding mask, he ran to the semi-circular buffet beside the pond, where he found and donned his cloak. The punt ferried him across the lake to the outskirts of Kussines.

Five minutes later he reached his air-car and took it aloft. He hovered several minutes, searching the air-space. If Possibility No. 2 had arrived by air-car, he must likewise be taking himself aloft. And also, thought Gersen, patrol craft would be converging on the scene of the murders. One man in harlequinade looked much like another; the sooner he was gone the better. And Gersen flew full speed back toward Rolingshaven.

XIII

On October 3 Navarth, having paid exemplary damages of SVU 50,000 to Baron Caspar Heaulmes, was discharged from the court, which likewise dismissed charges against Navarth's guests.

Gersen met Navarth on the mall in front of the Justice Courts. Navarth at first made as if he would pass without deigning to recognize Gersen, but Gersen finally was able to divert him to the table of a nearby cafe.

"Justice, bah!" Navarth made a grimace toward the courts. "Think of it! Money I must pay that vindictive and sanctimonious unmentionable! He should have indemnified me! Did he not disrupt the party? What did he hope to gain, running forth from the forest like that?" Navarth paused to moisten his throat with the beer Gersen had ordered. "It is enough to turn a man sour." He set the mug down with a thump and turned a yellow glance toward Gersen. "What do you want of me now? Another exercise in bathos? I warn you, I will not be so malleable a second time."

Gersen displayed the newspaper articles dealing with the event. Navarth refused to look at them. "A wretched lot of nonsense, sheer scurrility. You journalists are all alike."

"I notice that yesterday a certain Ian Kelly was murdered."

"Yes, poor Kelly. Did you come to the arraignment?"

"No."

"Then you missed your chance, because among the crowd was Viole Falushe. He is the most sensitive of men and cannot forget an injury. Ian Kelly was unlucky enough to resemble you in size and manner." Navarth shook his head ruefully. "Ah, that Vogel! He detests frustration as a bee sting."

"Do the police know the murderer is Viole Falushe?"

"I told them he was a man I met in a bar. What else could I say?"

Gersen had no reply to make. He indicated the article once more. "Twenty names are listed. Which refers to Zan Zu?"

Navarth made a contemptuous gesture toward the article. "Select as you like. One is as accurate as the next."

"One of these names must refer to her," said Gersen. "Which?"

"How should I know what name she chooses to supply the police? I believe I will drink more beer. The argument has parched my throat."

"I see here a 'Drusilla Wayles, age 18'. Is this she?"

"Quite possibly, possibly indeed."

"And this is her name?"

"Merciful Kalizbah! Must she own a name? A name is a weight! A chain to a set of uncontrolled circumstances. To own no name is to own freedom! Are you so stolid then that you cannot imagine a person without a name? She is what one chooses to call her."

"Strange," said Gersen. "She exactly resembles the Jheral Tinzy of thirty years ago."

Navarth jerked back in his chair. "How do you know this?"

"I have not been idle. For example, I have produced this." Gersen produced a dummy *Cosmopolis*. From the cover peered the face of young Vogel Filschner, superimposed upon the outline of a tall ominous gray figure. Below was the caption: **THE YOUNG VIOLE FALUSHE: Vogel Filschner as I knew him — Navarth.**

Navarth seized the dummy, read the article aghast. He raised his hands to his head. "He'll kill us all! He'll drown us in dog vomit! He'll grow trees in our ears!"

"The article seems balanced and judicious," said Gersen. "Certainly he can take no offense at facts!"

Navarth read further and went into a new paroxysm of dismay. "You have signed my name! I never wrote all that!"

"It's all true."

"The more so! When is this to be published?"

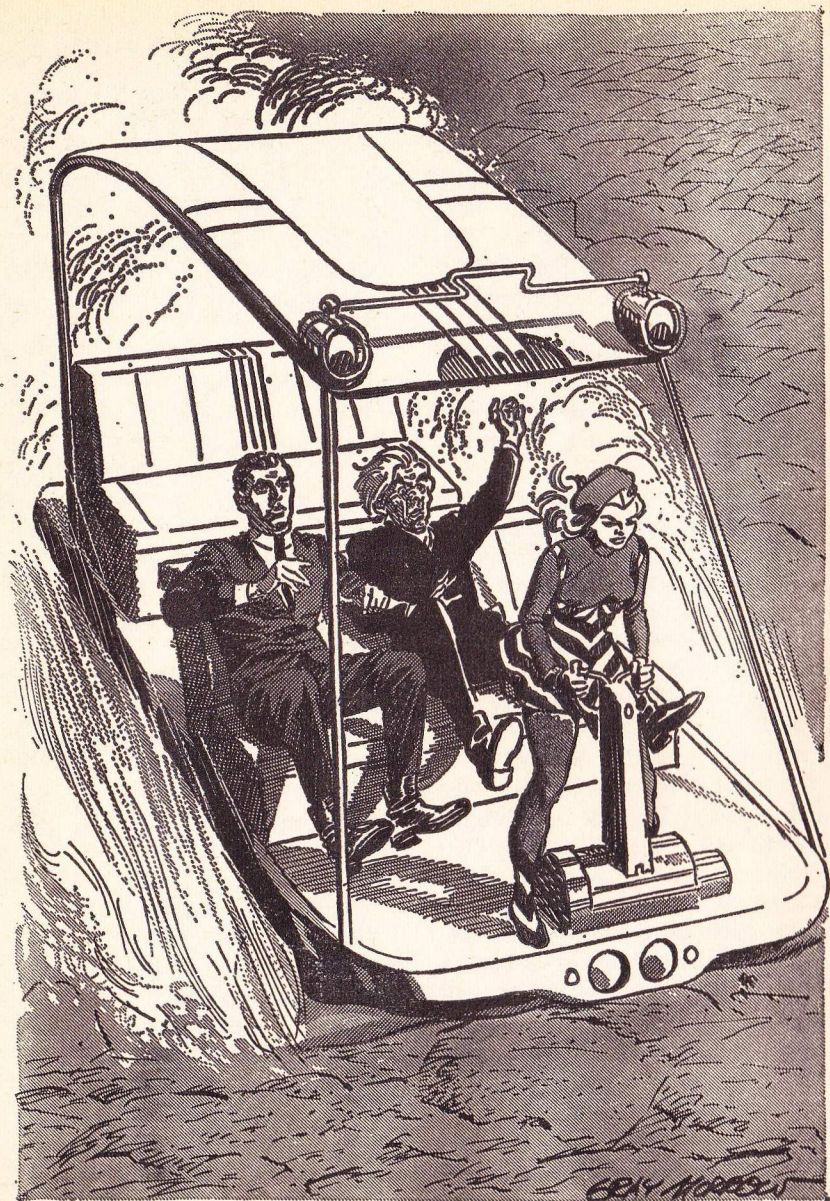
"In a week or two."

"Impossible. I forbid it."

"In that case, return me the money I lent you, that you might finance your party."

"'Lent'?" Navarth was shocked anew. "That was no loan! You paid me, you hired me to produce a party, at which Viole Falushe would be present."

"You did neither. Baron



Heaulmes, it is true, truncated your party, but this is no affair of mine. And where was Viole Falushe? You can point to the murderer, but this means nothing to me. Please return the money."

"I cannot! I have spent money like water! And Baron Heaulmes demanded his pound of flesh."

"Well, return to me the nine hundred thousand SVU you have left."

"What? I have no such sum on hand!"

"Perhaps we can set aside a portion as your payment for this article, but —"

"No, no! The article must not be published!"

"Best that we have a complete understanding," said Gersen. "You have not told me all."

"For which I am grateful. You have published the rest." Navarth kneaded his forehead. "These have been terrible days. Have you no pity for poor old Navarth?"

Gersen laughed. "You plotted to get me killed. You knew that Viole Falushe would attempt to possess Drusilla Wayles, or Zan Zu, whatever her name. You knew that I would not allow it. Ian Kelly paid his life in my place."

"No, no, nothing like that! I hoped you would kill Viole Falushe!"

"You're a devious villain. What of Drusilla, how was she to fare? Did you consider her?"

"I consider nothing," said Navarth huskily. "I cannot allow myself to ponder. If I lifted the partition between my two brains for so much as an instant . . ."

"Tell me what you know."

With extreme reluctance Navarth obeyed. "I must go back to Vogel Filschner once more. When he kidnapped the choral society, Jheral Tinzy escaped. That you know. But she was the cause of the crime, and the parents of the other girls blamed her. It became very hard, very rough. There were threats, names called in public. . . ."

Navarth had come under similar attack. One day he proposed to Jheral Tinzy that they run away together. Jheral, bitter and disillusioned, was in a mood for anything. They went to Corfu where they spent three years, and every day Navarth loved Jheral Tinzy more ardently than the day previously.

One terrible day Vogel Filschner appeared at the door of their little villa. He was no longer the old Vogel, though his appearance was much the same. He stood more erect, but the most striking change was his new personality. He had become hard, sure, firm. His eyes were bright,

his voice assured. Evil-doing clearly was good for him.

Vogel made a great show of amity to Navarth. "Past is past. Jheral Tinzy? I want nothing from her. She has given herself to you; she is sullied. I am fastidious in this respect; I take no woman fresh from another man's use. Be assured, she never will know an iota of my love . . . She should have waited. Yes. She should have waited, because she might have known I would return. But now my love for Jheral Tinzy is gone."

Navarth was somewhat reassured. He brought out a bottle; they sat in the garden, ate oranges, drank ouzo. Navarth became very drunk and fell asleep. When he awoke Vogel Filschner was gone. Jheral Tinzy was gone as well.

A day later Vogel Filschner reappeared. Navarth was in a frenzy. "Where is she? What have you done with her?"

"She is well and safe."

"What of your promise? You told me you had no more love for her!"

"This is true. The promise shall be kept. Jheral will never know my love, nor the love of any other man. Do you underestimate my emotion, poet? Love can turn to hate in a flicker of time. Jheral will serve, and serve well. She would not gratify my

love, but she will appease my hate."

Navarth threw himself at Vogel Filschner, but Vogel vaulted over the wall, and Navarth was left alone.

XIV

Nine years later Viole Falushe made contact with Navarth by telescreen, but now his face was blanked. Navarth heard only his voice. Navarth asked for the return of Jheral Tinzy, and Viole Falushe agreed. Two days later a child three years old was brought to Navarth. Viole Falushe called again. "I have done as I promised. You have Jheral Tinzy again."

"Is it her daughter?"

"It is Jheral Tinzy, this is all you need know. I put her into your charge. Keep her, nurture her, guard her, see that she remains undefiled — for one day I will return for her."

The screen went dead. Navarth turned to inspect the girl. Even now he could see her resemblance to Jheral. What to do? Navarth considered the child with mingled emotion. He could regard her neither as a daughter nor as a manifestation of his former love. He felt antagonism. There would always be a bitter-sweet ambiguity in their relationship, for Navarth was un-

able to love impersonally. The object of his love must relate to himself.

Navarth exemplified his contradicting impulses in his rearing of the girl. He fed her and provided shelter, both of the most casual and desultory sort. Otherwise the girl was independent. She became moody and uncommunicative; she made no friends and presently gave up asking questions.

As she matured her resemblance to Jheral Tinzy became ever more striking. She was Jheral Tinzy indeed, and her presence tormented Navarth with memories of the past.

A dozen years passed, but Viole Falushe had made no appearance. Still Navarth never dared hope that Viole Falushe had forgotten; indeed he became ever more depressed with the certainty that Viole Falushe would presently arrive and take the girl away. He tried from time to time to acquaint the girl with the danger represented by Viole Falushe, but his approach varied with his mood, and he was never sure that she understood him. He attempted to seclude her, a task rendered difficult by the girl's unpredictable habits, and he took her off to remote corners of the Earth.

When the girl was sixteen, they lived in Edmonton, Canads,

the goal of hordes of pilgrims who came to gaze upon the Sacred Shin. Navarth reasoned that there, among the interminable festivals, processions and sacerdotal rites, they might well live unnoticed.

But Navarth was wrong. Viole Falushe by some means knew his whereabouts. One night the telescreen lit up to show a tall figure standing against a flashing blue background which obscured his features. Navarth nevertheless recognized Viole Falushe and despondently called out "Show" to the telescreen.

"Well, Navarth," said Viole Falushe. "What do you do in the Holy City? Have you become a devout Kalziban that you live almost in the shadow of the Shin?"

"I study," muttered Navarth. "I derive a sense of purpose from the pervasive zeal."

"And what of the girl? I refer to 'Jheral'. She is well, I trust?"

"She was in fair condition last evening. I haven't seen her since."

Viole Falushe stared fixedly at Navarth, with only the glitter of his eyes giving dimension to his silhouette. "Is she pure?"

"How would I know?" demanded Navarth crossly. "I can't watch her day and night. In any event, what affair is it of yours?"

If anything, the intensity of Viole Falushe's glance increased.

"It is my affair in all respects, to such a degree as you would never imagine!"

"Your language is extravagant," sniffed Navarth. "I can hardly believe you to be serious."

Viole Falushe laughed softly. "Some day you will visit the Palace of Love, old Navarth. Some day you will be my guest."

"Not I!" declared Navarth. "I am a new Antaeus; never may I detach my toe from Earth. If necessary I will fall flat on my face and cling with both hands!"

"Well, then, summon the girl. Call 'Jheral' before the screen so that I may see her." An odd note had entered Viole Falushe's voice: sweetness and tenderness burdened with an almost insupportable rage.

"How can I call her when I don't know her whereabouts? She may be prowling the streets, or canoeing on the lake, or lying in someone's bed — "

A hoarse sound interrupted Navarth. But Viole Falushe's voice was mild. "Never say that, old Navarth. She was given into your care; I intended that you give her proper instruction. Have you done so? I suspect not."

"The best instruction is living itself," declared Navarth bluffly. "I am no pedant, as you well know."

There was a moment's silence. Then Viole Falushe said: "Do you know why I put the girl in your care?"

"My own motivations confuse me," said Navarth. "How should I know yours?"

"I will tell you. Because you know me well. You know what I require without explicit instructions."

Navarth blinked. "I had not considered the matter in this light."

"Then, old Navarth, you are remiss."

"I have heard this accusation a hundred times."

"But now you know what I expect. I hope you will repair your neglect."

The screen went dead. Navarth in a fury of frustration and resentment went striding out along the Great Nave, that avenue extending from the Plaza of Beatitudes to the Temple of the Shin. But the press of pilgrims irked him, and he took refuge in a teahouse, where he drank four cups of strong tea before he was sufficiently composed to think.

Specifically, Navarth wondered, what did Viole Falushe expect? He had a romantic interest in the girl, he wanted her inculcated, preconditioned, receptive. Navarth could not re-

strain a wild cackle of mirth, which aroused surprised glances from the other patrons of the teahouse, most of them black-clad pilgrims.

Viole Falushe wanted him to make the girl conscious of the great honor which awaited her; he wanted her preconditioned, predisposed, already fervent.

The pilgrims, fresh from ceremonies at the temple, were regarding him with suspicion. Navarth jumped to his feet, departed the tearoom. There was no further reason to remain in Edmonton. As soon as possible he took the girl back to Rolingshaven.

Once or twice he mentioned Viole Falushe to the girl, in a tone of dejection, for now he had come to think of the girl as doomed; to such effect that on one occasion the girl ran away. Fortuitously the event occurred immediately before one of Viole Falushe's visits to Earth. When he telephoned Navarth demanding to see the girl, Navarth was forced to blurt forth the truth. Viole Falushe spoke in a mild voice: "Best that she be found, Navarth."

But Navarth made no attempt to find the girl until he was sure Viole Falushe had departed from Earth.

Here Gersen interposed a question: "Could you be sure?"

Navarth attempted to evade the question but finally admitted that Viole Falushe, during his visits to Earth, could be telephoned at a particular code number. "Then you could call him now?"

"Yes, yes, of course," snapped Navarth. "If I wanted to do so, which I do not." He continued his story, but now he became cautious, using many flamboyant gestures, shifting his yellow glance all around with only an occasional flicker for Gersen.

It seemed that when Gersen appeared on the scene, Navarth sensed that here might be a weapon to be used against Viole Falushe (an aspect to the account that Navarth left unspoken). With the utmost caution, committing no overt acts, always leaving himself lines of retreat, Navarth tried to arrange for the discomfiture or destruction of Viole Falushe. Events however superseded his plans. "And now," quavered Navarth, pointing a long finger at the *Cosmopolis* dummy, "this!"

"You believe Viole Falushe would react unfavorably to the article?"

"Indeed, indeed! He is the least forgiving of men; it is the key to his soul!"

"Perhaps then we had best discuss the article with Viole Falushe himself."

"What benefit can derive from that? He will merely have more time to generate a suitable response."

Gersen pondered. "Well, then, it seems that we had best publish the article in its present form."

"No, no!" cried Navarth. "Have I not made all clear? He would punish us in equivalence to his annoyance, and he uses a subjective judgment! This article would offend him to an unprecedented fury; he hates his childhood, he only comes to Ambeules to gloat and work mischief on his old enemies. Do you know what happened to Rudolph Radgo, who jeered at Vogel Filschner's pimples? Rudolph Radgo's face is a garden of carbuncles, through Sarkoy poison. There was Maria, who moved her seat because Vogel's rheums and snivelings upset her. Maria now lacks all trace of a nose. Twice she has had grafts, twice she has suffered the loss of her new member. She is not to have a nose for all her life. So you see, it is not wise to offend *Viola Falushe*!" Navarth craned his neck. "What are you writing?"

"This is interesting new material; I am incorporating it into the article."

Navarth threw his hands up

so wildly that his chair almost overturned. "Have you no prudence?"

"Perhaps if we discussed the article with *Viola Falushe* he might authorize its publication."

"It's you who are mad, not I!"

"We can only try."

"Very well," croaked Navarth. "I have no choice. But I warn you, I disavow all connection with the article!"

"As you wish. Shall we make our call here, or at the houseboat?"

"At the houseboat."

They left the plaza, rode the tube to Ambeules, and were conveyed to the *Fitlingasse* by surface wagon.

The houseboat floated serene and quiet on the estuary. "Where is the girl?" asked Gersen. "*Zan Zu*, *Drusilla*, whatever her name?"

Navarth refused to answer. Gersen's question, so he implied, was like asking the color of the wind. He hopped on down the ladder, jumped aboard the boat and, with a desperate, tragic gesture, flung wide the door. He stalked to the telescreen, pushed buttons, spoke a muffled activant word. The presentation sprang to life: a single frail lavender flower. Navarth turned. "He is available. When he's off Earth the pattern is blue."

They waited. From the tele-screen came a wisp of tender melody, then after a moment or two a voice: "Ah, Navarth, my ancient companion. With a friend?"

"Yes, an urgent matter. This is Mr. Henry Lucas, representing *Cosmopolis* magazine."

"A journal with an honored tradition! But have we not met? There is about you a disturbing familiarity."

"I was on Sarkovy recently," said Gersen. "As I recall, your name was in the air."

"A miasmatic planet, Sarkovy. Nevertheless, one with a certain macabre beauty."

Navarth spoke. "I have had a misunderstanding with Mr. Lucas, and I wish specifically to disavow responsibility for his actions."

"My dear Navarth, you alarm me! Mr. Lucas is surely a man of courtesy."

"You shall see."

"As Navarth has mentioned, I work for *Cosmopolis*," said Gersen. "In fact, I am a senior official. One of our writers prepared a rather sensational article. I suspect the writer of over-enthusiasm and therefore checked with Navarth, who reinforced my doubts. It seems that the writer came upon Navarth in an exalted mood and, on the basis of a casual word, went to enormous

lengths of research and produced the article."

"Ah yes, the article. You have it with you?"

Gersen displayed the dummy. "It is included here. I insisted on checking the facts, apparently to good avail. Navarth insists that our writer took the most extreme liberties. He feels that in all fairness you should be allowed to authenticate the article before publication."

"Sound notion, Navarth! Well, then, allow me to examine this alarming effusion. I'm sure it can't be all that grim."

XV

Gersen slipped the magazine into the transcription rack. Viole Falushe read. From time to time he made sudden apparently involuntary noises: hisses between the teeth, small throaty sounds. "Turn the page, please." His voice was light and mild. Presently he said: "Yes, I have finished." There was a moment's silence, then he spoke again, and now the voice, superficially jocular, rang with a tinny overtone. "Navarth, you have been singularly reckless, even for an exhilarated poet."

"Bah," mutter Navarth. "Did I not disassociate myself from this entire farrago?"

"Not completely. I notice

matters which are magnified and distorted in a manner possible only to a mad poet. You have been indiscreet."

Navarth said bravely, "Can-dor is never indiscreet. Truth, which is to say, the reflection of life, is beautiful."

"Beauty is in the eye of the beholder," said Viole Falushe. "I for one find little beauty in this abusive article. Mr. Lucas is quite correct in seeking my reaction. The article may not be published."

For some fantastic reason Navarth saw fit to grumble. "What good is notoriety if your friends are unable to profit from it?"

"Exploitation of notoreity and humiliation of your friends are not identical," spoke the mild voice. "Can you imagine my distress if this article appeared and exposed me to ridicule? I would be forced to demand amends from all concerned, which is only simple justice. Since by an act of yours, my feelings are injured, then by other acts you must atone until my feelings are whole again. It is not enough to assert that I am over-sensitive. If you hurt me, then you must assuage the hurt, no matter how disproportionate the effort."

"Truth reflects the cosmos," argued the mad poet. "To expunge truth, one must destroy

the cosmos. This is the disproportionate act!"

"Aha!" declared Viole Falushe. "But the article is not necessarily truth! It is a point of view, an image or two snatched out of context. I, the person most intimately concerned, denounce the point of view as a flagrant distortion."

"I would like to make a suggestion," said Gersen. "Why not allow *Cosmopolis* to present the real facts; or that is to say, the facts from your point of view? No doubt you have a statement to make to the folk of the Oikumene, who are fascinated by your exploits, whether or not they approve of them."

"No, I think not," said Viole Falushe. "Such an article would seem self-inflation or worse, a rather spurious apologia. Basically I am a modest man."

"But are you not an artist as well?"

"Certainly. On the truest and noblest scale. Artists before me have conveyed their assertions by abstract symbology; the spectators or audience has always been passive. I use a more poignant symbology, essentially abstract but palpable, visible and audible — in short, a symbology of events and environments. There are no spectators, no

audience, no passivity. There are only participants. They encounter experience at its keenest. No man has dared conceive on so vast a scope before!" Here Viole Falushe gave a slow strange chuckle. "With the exception, perhaps of my megalomaniac contemporary Lens Larque, though his concepts are less fluid than my own. But I dare to say it: I am perhaps the supreme artist of history. My subject is Life. My medium is Experience. My tools are Pleasure, Passion, Pungency, Pain. I arrange the total environment, in order to suffuse the total entity. This of course is the rationale of my estate, popularly known as 'the Palace of Love'."

Gersen nodded sagely. "Precisely what the folk of the Oikumene are anxious to learn! Rather than publish a vulgar expose of this sort — " Gersen tapped the dummy with the back of his hand — *Cosmopolis* would like you to explain your thesis. We want photographs, charts, odor swatches, sound impressions, portraits. Above all, we want your expert analysis."

"Possible, possible."

"Good. To this end let us meet together. Name a time and a place and I will be there."

"The place? Where else? The Palace of Love. Each year I welcome a group of guests. You

shall be in the current contingent, and mad old Navarth as well."

"Not I!" protested Navarth. "My feet have never yet lost contact with Earth. I do not care to risk the clarity of my vision."

Gersen also demurred. "The invitation, though tempting, is not particularly convenient. I would prefer to meet you to-night, here on Earth."

"Impossible. On Earth I have enemies, on Earth I am a shadow. No man can point and say, 'There stands Viole Falushe.' Not even my dear friend Navarth, from whom I have learned much of value. A lovely party, that, Navarth! Magnificent, worthy of a mad poet. However, I am disappointed in the girl I gave you to nurture, and I am disappointed in you. You have exercised neither the tact, the imagination, nor the creative direction for which I had hoped. Consider the girl, in the light of what she is and what she might be! I had expected a new Jheral Tinzy: gay and grave, sweet as honey, tart as lime, with a brain full of stars, ardent yet innocent. What do I find? A wanton, a hoyden, a sour-faced ragamuffin, completely irresponsible and undiscerning. Imagine! In preference to me, she chose a certain Ian Kel-

ly, an insolent, unworthy person, far better dead. I find the situation incomprehensible. The girl clearly has not been well trained. Surely she knows of me and my interest in her?"

"Yes," said Navarth mulishly. "I have pronounced your name."

"Well, I am not quite satisfied, and I am sending her elsewhere, for corrective training by less gifted but more disciplined tutors. I think it likely that she will join us at the Palace of Love. . . . Ah, Navarth? You spoke?"

"Yes," said Navarth in a dull voice. "I have decided to take advantage myself of your invitation. I will visit your Palace of Love."

"All very well for you artists," said Gersen hurriedly. "But I am a busy man. Perhaps a brief conference here on Earth — "

"But I have already left Earth," said Viole Falushe in a voice of gentle reproach. "I hang here in orbit only until I hear that my plans for the young minx have been implemented. So you must come to the Palace of Love."

The violet flower flashed green, faded and shifted to a delicate pale blue. The connection had been broken.

Navarth sat sprawled in his chair a long two minutes,

head askew, chin on his chest. Gersen stood looking out the window, sensible of a sudden new hollowness.

Navarth lurched to his feet, went out on the front deck. Gersen followed. The sun was setting into the estuary; the tiled roofs of Dourrai glowed bronze; the rotting black wharves and docks stood forth in queer shapes and angles. All was invested with an unreal melancholy.

Gersen presently asked, "Do you know how to reach the Palace of Love?"

"No. He will inform us. He has a mind like a filing cabinet; no detail evades him." Navarth swung his arms indecisively and then went inside, to return with a tall, slender black-green bottle and two goblets. He broke off the seal and poured. "Drink, Henry Lucas, whatever your name, whatever your trade. Within this bottle is the wisdom of the ages, tincture of Earth-gold. Nowhere is tippable equal this; it is unique to old Earth. Mad old Earth, like mad old Navarth, yields it best in its serene maturity. Drink of this precious elixir, Henry Lucas, and count yourself fortunate. Normally it is reserved for mad poets, tragic pierrots, black angels, heroes about to die . . ."

"Cannot I be counted among these?" muttered Gersen.

As was his habit Navarth raised the goblet into the sunlight, of which only a few smoky orange rays remained. He tossed half a cupful into his mouth, stared out across the water. "I leave Earth. The withered leaf is lifted by the wind. Look, look, look!" In sudden excitement he pointed to the somber sun-trail along the estuary. "The road ahead, the way we must go!"

Gersen sipped the liquor, which seemed to explode into a spray of multicolored lights. "There is no doubt but what he has taken the girl?"

Navarth's mouth twisted awry. "I have no doubt as to this. He will punish her, hissing like a serpent. She is Jheral Tinzy and once again she has rebuffed him . . . So once again she will return to her infancy."

"You are sure she is Jheral Tinzy? Not someone who resembles her closely?"

"She is Jheral Tinzy. There are significant differences, it is true. Jheral was frivolous and a trifle cruel; this one is somber, pensive and never thinks of cruelty. But she is Jheral Tinzy."

They set, each occupied with his own thoughts. Dusk fell across the water; lights commenced to shine from the far slopes. A uniformed messenger alighted from his air-car, des-

cended the ladder. He called from the landing: "A delivery for 'the poet Navarth.'"

Navarth lurched to the gangplank. "I am he."

"Thumbprint here, please."

Navarth returned with a long blue envelope. Slowly he withdrew the enclosure. At the top was the lavender flower of the screen presentation. The message read:

Go Beyond to Sirneste Cluster, in Aquarius Sector. Deep within the cluster hangs the yellow sun Miel. The fifth planet is Sogdian, upon which, at the south of the hour-glass continent, you will discern the city Atar. In one month's time go to Rubdan Ulshaziz at his agency and say: "I am guest to the Margrave."

XVI

With trepidation dampened by fatalism, Navarth boarded Gersen's Distis Pharaon. Standing in the saloon, looking right and left, he spoke in a tragic voice: "So at last it has happened! Poor old Navarth, pried away from his source of strength! See him now — a huddle, a sack of tired bones. Navarth! You failed to discriminate in your company! You befriended waiters and criminals and journalists; for your

tolerance you are to be wafted away into space."

"Compose yourself," said Gersen. "It's not all that bad."

As the Pharaon lifted from Earth Navarth gave a hollow groan, as if a spike were being driven into his foot.

"Look out the port," suggested Gersen. "See old Earth as you have never seen it before."

Navarth inspected the great blue and white globe and reluctantly agreed that the vista was of majestic dimension.

"Now Earth recedes," said Gersen. "We point ourselves toward Aquarius, we engage the intersplit. Suddenly we are insulated from the universe."

Navarth pulled at his long chin. "Strange," he admitted. "Strange that this shell can convey us so far so fast. Somewhere there is mystery. It impels one to theosophy: to the worship of a space-god, or a god of light."

"Theory dissolves the mystery, though it lays bare a cryptic new stratum. Quite likely there is an endless set of these layers, mystery below mystery. Space is foam, matter particles are nodes and condensations. The foam fluxes, at varying rates. The average activity of these minuscles fluxes is Time."

Navarth cautiously moved

across the ship. "It is all very interesting. Had I followed an early bent, I might have been a great scientist."

The voyage proceeded. Navarth was a rather trying companion, ebullient one moment, morose the next. At one time he simultaneously became afflicted with claustrophobia and agoraphobia and lay on a settee with his feet bare and a cloth pulled over his head. On other occasions he sat by the port watching the stars pass, crowing with amazement and glee. Another time he became interested in the working of the intersplit, and Gersen explained it as well as he could: "Space-foam is whorled into a spindle. The pointed ends crack and split the foam, which has no inertia. The ship, inside the whorl, is insulated from the effects of the universe; the slightest force propels it at an unthinkable rate. Light curls through the whorl, so we have the illusion of seeing the passing universe."

"Hmm," mused Navarth. "How small can the units be made?"

Gersen knew no definite answer. "Quite compact, I suppose."

"Think! If you carried one on your back you would become invisible!"

"To drift a million miles with each breath."

"Unless a person anchored himself. Why isn't this done?"

"The intersplit would break the connection; no anchor would hold."

Navarth argued the point at length and lamented his previous ignorance. "Had I known previously of this marvelous device, I might have contrived a useful new machine!"

"The intersplit has been known for a long time."

"But not to me!" And Navarth went off to brood.

Through the hither stars of Aquarius flew the Pharaon. The Pale, that invisible barrier theoretically separating order from chaos, fell behind. Ahead glowed Sirneste Cluster, two hundred stars like a swarm of bright bees, controlling planets of every size and description. Gersen located Miel with some difficulty, and presently the fifth planet Sogdian hung below, of Earth-size and atmospheric type, like most of the settled planets. The climate appeared temperate; the polar ice was of small extent; the equatorial zone showed expanses of desert and jungle. The hour-glass continent was evident at once, and the macroscope located the city of Atar.

Gersen sent down a request for landing clearance. It re-

ceived no acknowledgment, which Gersen took as a sign that landing formalities were unknown.

He settled towards the planet, and Atar spread below: a small pink and white city surrounding an inlet of the ocean. The space port was operated in the manner standard at all the outer worlds: as soon as Gersen had landed, two port officials approached, exacted a fee and departed. There were no de-weaselers, a sign that the world was not a haven for pirates, raiders and slavers.

No public conveyance was available, so Gersen and Navarth walked a half-mile to the town. The people of Atar, dark-skinned folk, with hair dyed orange, wearing white pantaloons and wide complicated white turbans, regarded them with great curiosity. They spoke an incomprehensible language, but Gersen by dint of repeating, "Rubdan Ulshaziz? Rubdan Ulshaziz?" presently learned the whereabouts of the man he sought.

Rubdan Ulshaziz operated an import and export agency near the ocean. He was a bland, dark-skinned man dressed like the others in loose pantaloons and turban. "Gentlemen, I welcome you. Will you drink punch?" He poured out tiny cup-

lets of thick cold fruit syrup.

"Thank you," said Gersen. "We are guests of the Margrave and were instructed to come to you."

"Of course, of course!" Rubdan Ulshaziz bowed. "You will now be conveyed to the planet where the Margrave has his little estate." Rubdan Ulshaziz favored them with a lewd wink. "Excuse me a little moment; I will instruct the person who is to conduct you." He disappeared behind a portiere, presently to return with a dour-seeming man with close-set eyes who puffed nervous clouds of smoke from an acrid cheroot. Rubdan Ulshaziz said, "This is Zog, who will escort you to Rosja."

Zog blinked, coughed, spat a shred of tobacco to the floor.

"He speaks only the language of Atar," continued Rubdan Ulshaziz. "He will not be able to offer a description of your destination. Are you ready?"

"I need equipment from my spaceboat," said Gersen. "And the spaceboat itself, is it safe?"

"As safe as if it were a tree. I will go bond on this. If you do not find all correct upon your return, seek out Rubdal Ulshaziz and demand an accounting. But what do you wish from your ship? The Margrave

furnishes everything, even to new garments."

"I need my recorder," said Gersen. "I plan to take photographs."

Rubdal Ulshaziz made a suave gesture. "The Margrave supplies all equipment of this sort, the most modern combinations. He wants his guests to arrive unburdened by possessions, though he is indifferent to their psychic baggage."

"In other words," said Gersen, "we are not to carry any personal belongings with us?"

"None whatever. The Margrave supplies everything. His hospitality is all-inclusive. You have locked, sealed and coded your spaceship? Good! Then from this moment forward you are a guest of the Margrave. If you will accompany Fendi Zog . . ." He signaled Zog with a peremptory twist of the hand; Zog inclined his head; Gersen and Navarth followed him to an open area behind the warehouse. Here was an air-car of a design unfamiliar to Gersen and, so it seemed, to Zog as well. Sitting at the controls, Zog tested first one operator then another, squinting at the rather haphazard arrangement of knobs, grips and voice sensors. Finally, as if tiring of the uncertainty, he pushed at a cluster of finger-flicks. The air-car

jerked aloft, darted across the tree-tops, with Zog crouched at the controls and Navarth calling out in wrath.

Zog finally took command of the air-car; they flew twenty miles south across the cultivated plots and stock-pens surrounding Atar, to a field on which rested a late-model Baumur Andromeda. Once again Zog betrayed signs of uncertainty. The air-car swooped, bucked, wallowed, finally sank to rest; Navarth and Gersen alighted with alacrity. Zog signaled them toward the Andromeda; they climbed aboard, and the port closed behind them. Through a transparent panel in the partition separating saloon from the forward compartment, they saw Zog settling himself at the controls. Navarth called out an instant protest; Zog squinted back through the panel, bared yellow teeth in what might have been meant as a smile of reassurance and drew a curtain. The magnetic lock clicked shut on the intervening door. Navarth sank back in dismay. "Life is never so sweet until it becomes a hazard. What a sour trick for Vogel to play on his old preceptor!"

Gersen indicated the pleated burlap screen which covered the ports. "He also wants to preserve his mystery."

Navarth shook his head in bewilderment. "What use is knowledge to minds benumbed by fright? Why do we wait? Does Zog consult the Operator's Manual?"

The Andromeda lurched and rose at an alarming rate, almost hurling Gersen and Navarth to the floor, and Gersen grinned to hear Navarth's roar of protest. The sun Miel, as it could be glimpsed through the burlap, swung right and left, then rolled down and out of sight below the hull. Off through the cluster flew the Andromeda, and it seemed as if Zog changed course several times, whether from inaccuracy, poor spaceman-ship or a desire to confuse his passengers.

Two hours passed. A yellow-white sun bulked large behind the screened ports. Below hung a planet the configuration of which could not be discerned by reason of the curtain. With an impatient ejaculation, Navarth went to pull the curtain aside. A crackle of blue sparks struck out at his fingertips; Navarth fell back with a startled cry. "This is an imposition!" he exclaimed. "Ill usage indeed!"

From an unseen diaphragm a recorded voice spoke: "As cherished guests, you will wish to please your host by adhering

to certain standards of courtesy and restraint. It is not necessary to define these standards; they will be clear to all persons of delicacy. The stimulus provides a jocular reminder to the insensitive or thoughtless."

Navarth made a surly sound in his throat. "There's a smug dog for you. What harm in peering forth from the port?"

"Evidently the Margrave hopes to conceal the location of his headquarters," said Gersen.

"Balderdash. What is to prevent a man searching the cluster until he finds the Palace of Love?"

"There are hundreds of planets," Gersen pointed out. "Very likely other discouragements as well."

"He need fear no intrusion from me," sniffed Navarth.

The Andromeda settled upon a field surrounded by blue-green gum trees, of distinctly terrestrial derivation. Zog immediately unsealed the port, a process which Gersen watched first with amazement, then quizzical amusement. Wary of unseen microphones, he communicated none of his ideas to Navarth.

XVIII

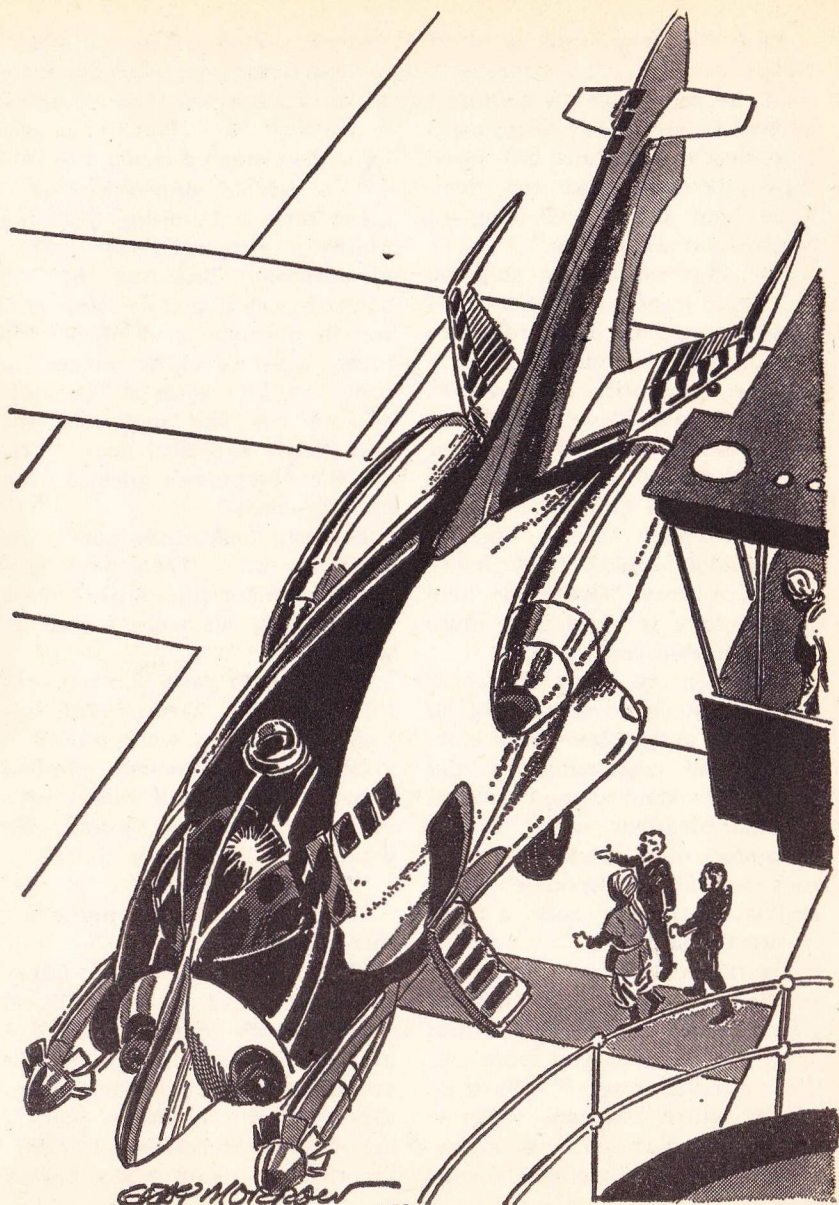
They alighted into the morning glare of a yellow-white sun, much like Miel in color

and radiance. The air was pungent with the odor of the gum trees and native vegetation; shrubs with lustrous black stalks, black and scarlet leaf-disks; blue spikes with fluttering dark blue vanes, puffs of cottony membrane enclosing tomato-red nodes. There were also clumps of terrestrial bamboo and grass and a thicket of blackberry bushes.

"Bizarre, bizarre," muttered Navarth, looking about. "There is fascination to be found on these far worlds!"

"This is almost like Earth," said Gersen. "But other areas may be dominated by local plants; then you will see the truly bizarre."

"No scope even for a sane poet," grumbled Navarth. "But I must put aside my individuality, my pitiful small cell of sentience. I have been snatched from Earth, and no doubt my bones will root in this strange soil." He picked up a clod, crushed it between his fingers, let the fragments fall to the ground. "It looks like soil, it feels like soil — but it is star-stuff. We are far from Earth. What? And we are to be marooned as well, with neither a crust nor a bottle of wine?" For Zog had returned within the Andromeda and was sealing the port. Gersen took Navarth's arm,



hustled him across the meadow. "Zog has a reckless temperament; he may take off on inter-split and carry away ship, meadow, shrubs, grass and two passengers, if we stand too near. Then you could well sing of bizarre circumstances."

But Zog raised the ship on its ionic pencils; Gersen and Navarth watched it dwindle into the bright, blue sky. "So here we are, somewhere in Sirneste Cluster," said Navarth. "Either the Palace of Love is nearby or Viole Falushe has performed another of his grotesque jokes."

Gersen went to the edge of the meadow, looked through the screen of trees. "Grotesque joke or not, here is a road. It must lead somewhere."

They set out along the road, between hedges of tall black rods with scarlet leaf disks clattering and chattering in the wind. The road wound around a knob of black schist, swung up a steep rise; gaining the crest they looked out upon a valley and a small city only a mile or two distant.

"Is this the Palace of Love?" wondered Navarth. "Hardly what I had expected: far too neat, too precise. And what are those circular towers?" The towers to which Navarth referred rose at regular intervals across the city. Gersen could only sug-

gest that they contained offices or apartments, or perhaps served to house civic functionaries.

As they started down the hill, a vehicle approached at a great rate: a bumping thudding platform supported by rolling air-cushions. Standing at the controls was a gaunt, stern person in a brown and black uniform, who on closer inspection proved to be a woman. She halted the car and inspected the two with a skeptical gaze. "You are the Margrave's guests? Step aboard, then."

Navarth took exception to the woman's tone. "Were you supposed to meet the ship? This is inefficiency; we were forced to walk!"

The woman gave him a scornful half-smile. "Get aboard, unless you care to walk more."

Gersen and Navarth climbed aboard, Navarth fuming with indignation. Gersen asked the woman, "What city is that?"

"It is City Ten."

"And what is your name for this planet?"

"I call it Fool's-World. Other folk may call it what they like."

Her mouth snapped shut like a trap. She swung the vehicle around and started back down the road, the bladders pounding, Gersen and Navarth clinging tight to avoid being hurled

into the ditch. Navarth bawled orders and instructions, but the woman drove even more furiously and did not slow until they entered the city by a curving, tree-shaded avenue; whereupon her pace became extremely sedate, and Gersen and Navarth were exposed to the curious stares of the city's inhabitants.

These were a people without distinctive peculiarity, other than the fact that the heads of the men were shaved clean as an egg, eyebrows, scalp, and beard; while the women affected an elaborate coiffure of long varnished spikes, occasionally tipped with flowers or other ornaments. Both men and women wore garments of extravagant cut and color and carried themselves with a peculiar mixture of swagger and furtiveness; speaking emphatically in low voices, laughing in loud brash bays, only to stop short, look in all directions, then continue with their mirth.

The vehicle passed one of the towers Navarth had noted: a structure of twenty stories, each apparently consisting of six wedge-shaped apartments.

Navarth spoke to the woman: "What is the purpose of the towers which rise so prominently?"

"It is where the taxes are collected," was the reply.

"Aha then, Henry Lucas, you are correct. The towers house civic functionaries."

The woman turned Navarth a gray glance. "They do, indeed. Indeed and indeed."

Navarth paid her no further heed. He pointed to one of the numerous cafes along the boulevard, patronized principally by men. "These rascals have much idle time," Navarth noted. "See how they loll and take their tittle! Viole Falushe is less than harsh with his subjects, if such they be!"

The vehicle swung into a turn around, halted before a long two-floored building. On the verandah sat a number of men and women in various costumes, obviously outworlders. "Off then, shag-heads!" said the woman driver tersely. "Here is the inn; I have done my stint."

"Incompetently, and in a surly manner," declared Navarth, rising and preparing to alight. "Your own head, incidentally, would never be the worse for a few changes. Perhaps a full beard, as a start."

The woman touched a button; the bed of the vehicle tilted; Navarth and Gersen were forced to jump to the ground. The vehicle departed, with Navarth making an insulting gesture at the woman's back.

A footman came forward to meet them. "You are guests of the Margrave?"

"This is correct," said Navarth. "We have been invited to the Palace."

"During the wait, you will be housed at the inn."

"Wait? Of what duration?" demanded Navarth. "I assumed that we would be taken directly to the Palace."

The footman bowed. "The Margrave's guests assemble here; all go forth together. I presume there are five or six others yet to come, this being the usual number. May I show you to your rooms?"

Gersen and Navarth were conducted to cubicles eight feet on a side, each containing a low narrow bunk, a wardrobe, a lavatory, ventilated only by the lattice in the door. Navarth was housed next to Gersen, and his complaints were clearly audible. Gersen smiled to himself. For reasons known best to himself, such was the style in which Viole Falushe wished his guests to wait.

Within the wardrobe were Earth-style garments of a light crisp fabric. Gersen washed, removed his beard with a depilatory, changed into fresh garments and went out upon the verandah. Navarth had preceded him and already was holding

forth to the eight people, four men and four women, who sat there.

Gersen took a seat to the side and considered the group. Beside him sat a portly gentleman wearing the black neck band and beige skin tone currently fashionable on the Mechanics Coast of Lyonesse, one of the Concourse planets. He was, so Gersen discovered, a manufacturer of bathroom fixtures named Hygen Grote. His companion, Doranie, almost certainly not his wife, was a cool, wide-eyed blonde woman with only an ultrafashionable hint of bronze skin luster.

A pair of serious young women sat quietly to the side: sociology students at Sea Providence University near Avente. Their names were Tralla Callob and Mornice Whill; they seemed awed, half alarmed and sat close to each other, feet flat on the floor, knees pressed tight together. Tralla Callob was not unattractive, though she seemed unaware of this and took no pains to make the most of herself. Mornice Whill was victimized by over-large features and a truculent conviction that every man in the group intended assault upon her chastity.

More relaxed was Margray Liever, a middle-aged woman

from Earth who had won first prize in a television contest: her 'heart's desire.' She had chosen a visit to Viole Falushe's 'Palace of Love'. Viole Falushe had been amused and obliging.

Torrace daNossa was a musician, a man of sophistication and elegance, perhaps a trifle soft, more than a trifle vain, with an effortless ease of manner which made meaningful conversation difficult. He was visiting the Palace of Love preparatory to composing an opera entitled *The Palace of Love*.

Lerand Wible was a marine architect of Earth, who recently had constructed a sailboat of ultimate design. The fin was osmium, the sails were tall air foils of metal-plated foam, self-supporting and unstayed. Sails and fin extended at opposite diameters of a metal slip-ring; the hull floated upright, in its most efficient hydro dynamic posture. Both hull and fin were coated with a water-repellent, reducing skin friction to a minimum, while ducts expelled air to minimize turbulence. Wible had met Viole Falushe in connection with his fanciful scheme for a sea-going palace, ring-shaped to enclose a central lagoon.

Skebou Diffiani was a taciturn man with a head of coarse black hair, a black, tightly curled

beard, an expression conveying disdain and suspicion of all the others. He was a native of Quantique, which went far to explain his aloof manner. His occupation was day-laborer. His inclusion in the group could be explained only as a caprice of Viole Falushe.

Margray Liever had been the first to arrive, five of the long local days before. Then Tralla and Mornice had come, then Skebou Diffiani. Lerand Wible and Torrace daNossa were next, followed by Hygen Grote and Doranie.

Navarth plied all with questions, pacing the verandah, darting side-glances right and left. But no one knew more than he did; none knew where lay the Palace of Love or the time of departure. The uncertainty troubled no one. In spite of the constricted chambers, the hotel was reasonably comfortable, and there was the city to be explored: a puzzling, mysterious city, with latencies and undercurrents some of the guests found fascinating, others disturbing.

A gong summoned the group to lunch, which was served on a back court under black, green and scarlet trees. The cuisine was uncomplicated: pastry wafers, poached fish, fruit, a cool pale green beverage, cakes of spiced currants. During the meal six

new guests arrived and were brought immediately to the court for lunch. They were Druids of Vale, or Virgo 912 VII, and apparently consisted of two families, though such relationships were shrouded in secrecy. There were two Druids, two Druidesses, two adolescents. All wore similar garments: black gowns, black cowls, long-toed black slippers. Druids Dakaw and Pruitt were tall and saturnine; Druidess Wust was thin, sinewy, with a hollow-cheeked face, Druidess Laidig was portly and imposing. The lad Hule was sixteen or seventeen, extremely handsome, with sallow clear skin and dark eyes. He spoke little and smiled never, surveying all with a troubled gaze. The girl Billika, about the same age, was likewise pale, with something of the same troubled gaze, as if she constantly strove to balance sets of irreconcilable relationships.

The Druids sat together, ate hurriedly with cowls drawn forward and only occasional mutters of conversation. After lunch, when the guests returned to the verandah, the Druids came purposefully forward, introduced themselves with brave cordiality and took seats among the others.

Navarth came to question them, but their evasiveness was a match for his curiosity, and he

learned nothing. The talk became general, reverting, as it always did, to the city, the name of which was either City Ten or Kouliha. The subject of the towers arose. What was their function? Did they contain business offices, as Doranie suggested, or were they residences? Navarth reported the explanation of the woman in the uniform — that the towers were tax-gathering agencies — but the rest of the group found the idea far fetched. Diffiani made the somewhat brutal assertion that the towers were brothels: "Notice! Early in the morning girls and young women arrive; later the men come!"

Torrace daNossa said, "The hypothesis is one which leaps to mind, but the women leave when they will. And they seem to include every stratum of society, which is hardly typical."

Hygen Grote gave a sly wink to Navarth. "There is a simple way to resolve the question. I suggest that we deputize one of our number to make direct inquiry."

Druidesses Laidig and Wust snorted and drew their cowls close around their faces; the girl Billika licked her lips nervously. Druids Dakaw and Pruitt looked off in different directions. Gersen wondered why the Druids, notoriously prim, had ventured on the journey to the Palace of

Love, when their sensibilities could not but fail to be outraged. Mysteries everywhere . . .

A few minutes later Gersen and Navarth went for a stroll through the city, examining stalls, stores, workshops and residences with the untroubled curiosity of tourists. The people watched them with indifference and perhaps a tinge of envy. They seemed prosperous, gentle, easy of disposition. Still Gersen sensed a pervading quality he could not define. Nothing so coarse as fear, or discord, or anxiety. . . . A wide tree-shaded cafe tempted Navarth; Gersen pointed out that they lacked money.

Navarth brushed the matter aside and insisted that Gersen join him for a glass of wine. Gersen shrugged, followed Navarth to a table. Navarth signaled the proprietor. "We are guests of the Margrave Viole Falushe; we have no coin of the city. We intend to patronize your cafe, and you may send the account to the hotel for collection."

The proprietor bowed punctiliously. "It shall be as you wish."

"Then we will drink a flask of whatever wine you consider suitable for this time of day."

"At once, sir."

The wine was served, a pleasant beverage which Navarth found somewhat too delicate. They sat watching folk walk past. Directly opposite rose one of the cryptic towers, which now, in the middle afternoon, showed no great activity.

Navarth summoned the proprietor to order another flask of wine and, indicating the tower, asked, "what goes on in yonder tower?"

The proprietor seemed puzzled by the question. "It is like all the rest. Where we pay our taxes."

"But why so many towers? Would not a single tower suffice?"

Now the proprietor was amazed. "What, sir? For so many people as live here? Hardly possible!"

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With this Navarth was forced to be satisfied.

Returning to the hotel they found that two more guests had arrived, both men of Earth: Harry Tanzel of London, Gian Mario of no fixed address. Both were well favored men, tall, keen-faced, dark-haired, of ages not immediately apparent. Tanzel was perhaps the handsomer of the two; Mario was more energetic and vital.

The local day was a long twenty-nine hours. When night finally arrived the guests retired without protest to their cubicles, only to be awakened at midnight by a gong and summoned to a midnight meal.

XIX

The following morning saw the arrival of Zuly, a tall langorous dancer from the world Valhalla, Tau Gemini VI. She comported herself with the most exquisite mannerisms, to the suspicion and perturbation of the Druids, especially young Hule who could not keep his eyes away from the woman.

Immediately after the morning meal Gersen, Navarth and Lerand Wible went walking beside the canal which ran behind the hotel. Today appeared to be a holiday. The people of the city wore garlands. Some were drunk;

others sang songs in praise of Arodin, evidently a folk-hero or ruler.

"Even on a holiday," said Navarth, "they go to pay their taxes."

"Nonsense," said Wible. "When do men go to pay taxes with so jaunty a step?" The three paused to watch men going and coming from the tall tower. "Definitely, it is a brothel. It can be nothing else."

"But so public. So industrious? We may be misled by appearances."

"Conceivably. Do you wish to enter the place?"

"No, indeed! If brothel it is, I am unfamiliar with their methods and might perform some unorthodox act, to the discredit of us all."

"You are unusually cautious."

"I am on a strange planet," sighed Navarth. "I lack the strength I derive from the soil of old Earth. But I am curious; we shall resolve the question once and for all. Come." He led the way to the pavilion, where they had been served the day before, and scanned the tables. A portly middle-aged gentleman in a wide-brimmed, green hat sat looking off along the boulevard, a small jug of wine at his elbow.

Navarth approached him. "Your pardon, sir. As you can see, we are strangers here. One

or two of your customs puzzle us, and we wish to learn how matters stand."

The middle-aged man heaved himself erect and after a moment's hesitation pointed to the other chairs. "I will explain as best I can, though there is small mystery here. We do as best we can and live according to our lights."

Navarth, Gersen and Wible seated themselves. "First of all," Navarth inquired, "what is the function of that tower yonder, where so many people go in and out?"

"Ah, there. Yes. That is our local agency of tax collection."

"Tax collection?" asked Navarth, with a triumphant glance at Wible. "And the folk who go in and out pay taxes?"

"Exactly. The city is under the wise sponsorship of Arodin. We are prosperous because taxes suck away none of our wealth."

At this Lerand Wible made a skeptical sound. "How is this possible?"

"Is it not the same elsewhere? The money collected is the money which otherwise would be spent on frivolity. The system is beneficent to all. Every girl of the region must serve five years, performing a stipulated number of services per day. Naturally the more attractive girls fulfill

their quota sooner than those who are plain, and there is consequently a considerable incentive to maintaining pulchritude."

"Aho!" said Wible. "A civic brothel!"

His informant shrugged. "Call it what you wish. There is no diminution of resource; the yield is devoted to civic expense; there is no outcry at the collection of tax, and the tax collectors find their work not irksome; or if they do, they can make in-lieu payments — which usually happens should the girl wed before her service is complete. Then, of course, we have our obligation to Arodin, which each of us discharges by the payment of a two-year-old child. Thereupon we pay no more taxes, except for an occasional special assessment."

"No one complains when their child is taken?"

"Usually not. The child is taken to a creche immediately after birth, so that no bonds of affection are formed. Folk breed children early to discharge their obligation as rapidly as possible."

Wible exchanged glances with Navarth and Gersen. "And what happens to the children?"

"They go to the account of Arodin. The unsuitables are sold to the Mahrab; the satisfactory serve at the great Palace. I gave a child ten years ago; I now owe tax to no one."

Navarth could contain himself no longer. Leaning forward in his chair he pointed a knobby finger. "So this is why you sit here blinking so smugly in the sun? Where is your guilt?"

"'Guilt?'" The man raised his hands to adjust his wire-brimmed hat in puzzlement. "There is no guilt. I have performed my duty. I gave my child; I patronize the civic brothel twice a week. I am a free man."

"While the child you gave is now a ten-year-old slave. Somewhere he, or she, toils that you may sit here with your belly on your lap!"

The man rose to his feet, face pink with fury. "This is incitement, a serious offense! What then do you do here, you plucked, foolish old fowl? Why do you come to this city if you don't fancy our ways?"

"I did not select your city as a destination," said Navarth with dignity. "I am a guest to Viole Falushe and remain here only pending his notification."

The man laughed: a harsh throbbing chortle. "This is the outworld name for Arodin. You come to the Palace, and you have not even paid!" He pounded the table once with his fist and marched out of the cafe. Other patrons who had been listening pointedly turned their backs.

Presently the three returned to the hotel.

Even as they arrived the thud of the bladder-buggy sounded at the end of the boulevard. It rumbled up to the hotel, halted. A man alighted, turned to help down a young woman who, ignoring the hand, jumped to the ground. Navarth gave a raucous cry of surprise. The young woman, attired in fashionable Alphanor-style garments, was Navarth's erstwhile ward, known as Zan Zu, Drusilla and otherwise.

Navarth took her aside, pelted her with questions: what had happened to her; where had she been pent?

Drusilla could tell him little. She had been shoved into an air-car by the white-eyed man, conveyed to a space-vessel, placed in the custody of three grim women. Each of them wore a heavy gold ring. After the poison sprayed from the rings was demonstrated upon a dog, no further threats or warnings were necessary.

Drusilla was taken to Avente on Alphanor, lodged at the splendid Hotel Tarquin. The women were watchful as hawks, speaking seldom, never more than two or three feet away, the gold rings a sinister glitter. They took her to concerts, restaurants,

fashion shows, cinematic displays, museums and galleries. They urged her to buy clothes, to tone her skin, to make herself chic — all of which Drusilla resisted, from sullen perversity. Whereupon the women bought the clothes, toned her skin, arranged her hair. Drusilla retaliated by sagging, drooping, contriving to look as uncouth as possible. Finally the women took her to the space port. They boarded a space ship which conveyed them to Sirneste Cluster and the planet Sogdian. They arrived at the agency of Rubdan Ulshaziz at Atar simultaneously with another guest for the Palace of Love, Milo Ethuen, who stayed in Drusilla's company for

the remainder of the journey. The three women came as far as the Kouliha space field, then returned to Atar with Zog. Navarth and Gersen looked around to inspect Ethuen, who sat on the verandah with the others: a man not unlike Tanzel and Mario, with a brooding face, dark hair, and long arms.

The manager of the hotel came forth upon the verandah. "Ladies and gentlemen, I am pleased to announce that your wait is at an end. The guests of the Margrave are assembled; you must now set forth on your journey to the Palace of Love. Please ney to the Palace of Love.

"Please follow me; I will conduct you to your conveyance."

TO BE CONCLUDED

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PRIMARY EDUCATION OF THE CAMIROI

by R. A. LAFFERTY

*Ever wonder why aliens were so
much smarter than us? Here's why!*

ABSTRACT FROM JOINT
REPORT TO THE GENERAL
DUBUQUE PTA CONCERN-
ING THE PRIMARY EDUCA-
TION OF THE CAMIROI, Sub-
titled Critical Observations of a
Parallel Culture on a Neighbor-
ing World, and Evaluations of
THE OTHER WAY OF EDU-
CATION.

Extract from the Day Book:

"Where," we asked the Infor-
mation Factor at Camiroi City
Terminal, "is the office of the
local PTA?"

"Isn't any," he said cheerfully.

"You mean that in Camiroi
City, the metropolis of the
planet, there is no PTA?" our

chairman Paul Piper asked with
disbelief.

"Isn't any office of it. But
you're poor strangers, so you de-
serve an answer even if you can't
frame your questions properly.
See that elderly man sitting on
the bench and enjoying the sun?
Go tell him you need a PTA.
He'll make you one."

"Perhaps the initials convey a
different meaning on Camiroi,"
said Miss Munch the first surro-
gate chairman. "By them we
mean —"

"Parent Teachers Apparatus,
of course. Colloquial English is
one of the six Earthian languages
required here, you know. Don't be

abashed. He's a fine person, and he enjoys doing things for strangers. He'll be glad to make you a PTA."

We were nonplussed, but we walked over to the man indicated.

"We are looking for the local PTA, sir," said Miss Smice, our second surrogate chairman. "We were told that you might help us."

"Oh, certainly," said the elderly Camiroi gentleman. "One of you arrest that man walking there, and we'll get started with it."

"Do what?" asked our Mr. Piper.

"Arrest him. I have noticed that your own words sometimes do not convey a meaning to you. I often wonder how you do communicate among yourselves. Arrest, take into custody, seize by any force physical or moral, and bring him here."

"Yes, sir," cried Miss Hanks our third surrogate chairman. She enjoyed things like this. She arrested the walking Camiroi man with force partly physical and partly moral and brought him to the group.

"It's a PTA they want, Meander," the elder Camiroi said to the one arrested. "Grab three more, and we'll get started. Let the lady help. She's good at it."

Our Miss Hanks and the

Camiroi man named Meander arrested three other Camiroi men and brought them to the group.

"Five. It's enough," said the elderly Camiroi. "We are hereby constituted a PTA and ordered into random action. Now, how can we accommodate you, good Earth people?"

"But are you legal? Are you five persons competent to be a PTA?" demanded our Mr. Piper.

"Any Camiroi citizen is competent to do any job on the planet of Camiroi," said one of the Camiroi men (we learned later that his name was Talarium), "otherwise Camiroi would be in a sad shape."

"It may be," said our Miss Smice sourly. "It all seems very informal. What if one of you had to be World President?"

"The odds are that it won't come to one man in ten," said the elderly Camiroi (his name was Philoxenus). "I'm the only one of this group ever to serve as president of this planet, and it was a pleasant week I spent in the Office. Now to the point. How can we accommodate you."

"We would like to see one of your schools in session," said our Mr. Piper. "We would like to talk to the teachers and the students. We are here to compare the two systems of education."

"There is no comparison,"

said old Philoxenus, "— meaning no offense. Or no more than a little. On Camiroi, we practice Education. On Earth, they play a game, but they call it by the same name. That makes the confusion. Come. We'll go to a school in session."

"And to a public school," said Miss Smice suspiciously. "Do not fob off any fancy private school on us as typical."

"That would be difficult," said Philoxenus. "There is no public school in Camiroi City and only two remaining on the Planet. Only a small fraction of one per cent of the students of Camiroi are in public schools. We maintain that there is no more reason for the majority of children to be educated in a public school than to be raised in a public orphanage. We realize, of course, that on Earth you have made a sacred buffalo of the public school."

"Sacred cow," said our Mr. Piper.

"Children and Earthlings should be corrected when they use words wrongly," said Philoxenus. "How else will they learn the correct forms? The animal held sacred in your own near orient was of the species *bos bubalus* rather than *bos bos*, a buffalo rather than a cow. Shall we go to a school?"

"If it cannot be a public school,

at least let it be a typical school," said Miss Smice.

"That again is impossible," said Philoxenus. "Every school on Camiroi is in some respect atypical."

We went to visit an atypical school.

INCIDENT: Our first contact with the Camiroi students was a violent one. One of them, a lively little boy about eight years old, ran into Miss Munch, knocked her down, and broke her glasses. Then he jabbered something in an unknown tongue.

"Is that Camiroi?" asked Mr. Piper with interest. "From what I have heard, I supposed the language to have a harsher and fuller sound."

"You mean you don't recognize it?" asked Philoxenus with amusement. "What a droll admission from an educator. The boy is very young and very ignorant. Seeing that you were Earthians, he spoke in Hindi, which is the tongue used by more Earthians than any other. No, no, Xypete, they are of the minority who speak English. You can tell it by their colorless texture and the narrow heads on them."

"I say you sure do have slow reaction, lady," the little boy Xypete explained. "Even sub-humans should react faster than

that. You just stand there and gape and let me bowl you over. You want me analyze you and see why you react so slow?"

"No! No!"

"You seem unhurt in structure from the fall," the little boy continued, "but if I hurt you I got to fix you. Just strip down to your shift, and I'll go over you and make sure you're all right."

"No! No! No!"

"It's all right," said Philoxenus. "All Camiroi children learn primary medicine in the first grade, setting bones and healing contusions and such."

"No! No! I'm all right. But he's broken my glasses."

"Come along Earthside lady, I'll make you some others," said the little boy. "With your slow reaction time you sure can't afford the added handicap of defective vision. Shall I fit you with contacts?"

"No. I want glasses just like those which were broken. Oh heavens, what will I do?"

"You come, I do," said the little boy. It was rather revealing to us that the little boy was able to test Miss Munch's eyes, grind lenses, make frames and have her fixed up within three minutes. "I have made some improvements over those you wore before," the boy said, "to help compensate for your slow reaction time."

"Are all the Camiroi students

so talented?" Mr. Piper asked. He was impressed.

"No. Xypete is unusual," Philoxenus said. "Most students would not be able to make a pair of glasses so quickly or competently till they were at least nine."

RANDOM INTERVIEWS:

"How rapidly do you read?" Miss Hanks asked a young girl.

"One hundred and twenty words a minute," the girl said.

"On Earth some of the girl students your age have learned to read at the rate of five hundred words a minutes," Miss Hanks said proudly.

"When I began disciplined reading, I was reading at the rate of four thousand words a minute," the girl said. "They had quite a time correcting me of it. I had to take remedial reading, and my parents were ashamed of me. Now I've learned to read almost slow enough."

"I don't understand," said Miss Hanks.

"Do you know anything about Earth History or Geography?" Miss Smice asked a middle-sized boy.

"We sure are sketchy on it, lady. There isn't very much over there, is there?"

"Then you have never heard of Dubuque?"

"Count Dubuque interests me. I can't say as much for the City named after him. I always thought that the Count handled the matters of the conflicting French and Spanish land grants and the basic claims of the Sauk and Fox Indians very well. References to the Town now carry a humorous connotation, and 'School-Teacher from Dubuque' has become a folk archetype."

"Thank you," said Miss Smice, "or do I thank you?"

"What are you taught of the relative humanity of the Earthians and the Camiroi and of their origins?" Miss Munch asked a Camiroi girl.

"The other four worlds, Earth (Gaea), Kentauron Mikron, Dahae and Astrobe were all settled from Camiroi. That is what we are taught. We are also given the humorous aside that if it isn't true we will still hold it true till something better comes along. It was we who rediscovered the Four Worlds in historic time, not they who discovered us. If we did not make the original settlements, at least we have filed the first claim that we made them. We did, in historical time, make an additional colonization of Earth. You call it the Incursion of the Dorian Greeks."

"Where are their play-

grounds?" Miss Hanks asked Talarium.

"Oh, the whole world. The children have the run of everything. To set up specific playgrounds would be like setting a table-sized aquarium down in the depths of the ocean. It would really be pointless."

CONFERENCE: The four of us from Earth, specifically from Dubuque, Iowa, were in discussion with the five members of the Camiroi PTA.

"How do you maintain discipline?" Mr. Piper asked.

"Indifferently," said Philoxenus, "Oh, you mean in detail. It varies. Sometimes we let it drift, sometimes we pull them up short. Once they have learned that they must comply to an extent, there is little trouble. Small children are often put down into a pit. They do not eat or come out till they know their assignment."

"But that is inhuman," said Miss Hanks.

"Of course. But small children are not yet entirely human. If a child has not learned to accept discipline by the third or fourth grade, he is hanged."

"Literally?" asked Miss Munch.

"How would you hang a child figuratively? And what effect would that have on the other children?"

"By the neck?" Miss Munch still was not satisfied.

"By the neck until they are dead. The other children always accept the example gracefully and do better. Hanging isn't employed often. Scarcely one child in a hundred is hanged."

"What is this business about slow reading?" Miss Hanks asked, "I don't understand it at all."

"Only the other day there was a child in the third grade who persisted in rapid reading," Philoxenus said. "He was given an object lesson. He was given a book of medium difficulty, and he read it rapidly. Then he had to put the book away and repeat what he had read. Do you know that in the first thirty pages he missed four words? Midway in the book there was a whole statement which he had understood wrongly, and there were hundreds of pages that he got word-perfect only with difficulty. If he was so unsure on material that he had just read, think how imperfectly he would have recalled it forty years later."

"You mean that the Camiroi children learn to recall everything that they read?"

"The Camiroi children and adults will recall for life every detail they have ever seen, read or heard. We on Camiroi are only a little more intelligent than you on Earth. We cannot afford

to waste time in forgetting or reviewing, or in pursuing anything of a shallowness that lends itself to scanning."

"Ah, would you call your schools liberal?" Mr. Piper asked.

"I would. You wouldn't," said Philoxenus. "We do not on Camiroi, as you do on Earth, use words to mean their opposites. There is nothing in our education or on our world that corresponds to the quaint servility which you call liberal on Earth."

"Well, would you call your education progressive?"

"No. In your argot, progressive, of course, means infantile."

"How are the schools financed?" asked Mr. Piper.

"Oh, the voluntary tithe on Camiroi takes care of everything, government, religion, education, public works. We don't believe in taxes, of course, and we never maintain a high overhead in anything."

"Just how voluntary is the tithing?" asked Miss Hanks. "Do you sometimes hang those who do not tithe voluntarily?"

"I believe there have been a few cases of that sort," said Philoxenus.

"And is your government really as slipshod as your education?" Mr. Piper asked. "Are your high officials really chosen by lot and for short periods?"

"Oh yes. Can you imagine a person so sick that he would actually *desire* to hold high office for any great period of time? Are there any further questions?"

"There must be hundreds," said Mr. Piper, "But we find difficulty putting them into words."

"If you cannot find words for them, we cannot find answers. PTA disbanded."

CONCLUSIONS: A. The Camiroi system of education is inferior to our own in organization, in buildings, in facilities, in playgrounds, in teacher conferences, in funding, in parental involvement, in supervision, in in-group out-group accommodation adjustment motifs. Some of the school buildings are grotesque. We asked about one particular building which seemed to us to be flamboyant and in bad taste. "What do you expect from second-grade children?" they said, "It is well built even if of peculiar appearance. Second-grade children are not yet complete artists of design."

"You mean that the children designed it themselves?" we asked.

"Of course," they said. "Designed and built it. It isn't a bad job for children."

Such a thing wouldn't be permitted on Earth.

CONCLUSION B. The Cami-

roi system of education somehow produces much better results than does the education system of Earth. We have been forced to admit this by the evidence at hand.

CONCLUSION C. There is an anomaly as yet unresolved between **CONCLUSION A** and **CONCLUSION B**.

APPENDIX TO JOINT REPORT

We give here, as perhaps of some interest, the curriculum of the Camiroi Primary Education.

FIRST YEAR COURSE:

Playing one wind instrument
Simple drawing of objects and numbers.

Singing. (This is important. Many Earth people sing who cannot sing. This early instruction of the Camiroi prevents that occurrence.)

Simple arithmetic, hand and machine.

First Acrobatics.

First riddles and logic.

Mnemonic religion.

First dancing.

Walking the low wire.

Simple electric circuits.

Raising ants. (Exempts, not earth ants).

SECOND YEAR COURSE:

Playing one keyboard instrument.

Drawing, faces, letters, motions.
 Singing comedies.
 Complex arithmetic, hand and machine.
 Second acrobatics.
 First jokes and logic.
 Quadratic religion.
 Second Dancing.
 Simple defamation (Spirited attacks on the character of one fellow student, with elementary falsification and simple hatchet-job programming.)
 Performing on the medium wire.
 Project electric wiring.
 Raising bees. (Galelea, not earth bees.)

THIRD YEAR COURSE:

Playing one stringed instrument.
 Reading and voice. (It is here that the student who may have fallen into bad habits of rapid reading is compelled to read at voice speed only.)
 Soft stone sculpture.
 Situation comedy.
 Simple algebra, hand and machine.
 First gymnastics.
 Second jokes and logic.
 Transcendent religion.
 Complex acrobatic dancing.
 Complex defamation.
 Performing on the high wire and the sky pole.
 Simple radio construction.
 Raising, breeding and dissecting frogs.
 (Karakoli, not earth frogs.)

FOURTH YEAR COURSE:

History reading, Camiroi and galactic, basic and geological.
 Decadent comedy.
 Simple geometry and trigonometry, hand and machine.
 Track and field.
 Shaggy people jokes and hirstute logic.
 Simple obscenity.
 Simple mysticism.
 Patterns of falsification.
 Trapeze work.
 Intermediate electronics.
 Human dissection.

FIFTH YEAR COURSE:

History reading, Camiroi and galactic, technological.
 Introverted drama.
 Complex geometries and analytics, hand and machine.
 Track and field for fifth form record.
 First wit and logic.
 First alcoholic appreciation.
 Complex mysticism.
 Setting intellectual climates, defamation in three dimensions.
 Simple oratory.
 Complex trapeze work.
 Inorganic chemistry.
 Advanced electronics.
 Advanced human dissection.
 Fifth Form Thesis.
 The child is now ten years old and is half through his primary schooling. He is an unfinished animal, but he has learned to learn.

SIXTH FORM COURSE:

Reemphasis on slow reading.

Simple prodigious memory.

History reading, Camiroi and galactic, economic.

Horsemanship (of the Patrushkoe, not the earth horse.)

Advance lathe and machine work for art and utility.

Literature, passive.

Calculi, hand and machine pankration.

Advanced wit and logic.

Second alcoholic appreciation.

Differential religion.

First business ventures.

Complex oratory.

Building-scaling. (The buildings are higher and the gravity stronger than on Earth; this climbing of buildings like human flies calls out the ingenuity and daring of the Camiroi children.)

Nuclear physics and post-organic chemistry.

Simple pseudo-human assembly.

SEVENTH YEAR COURSE:

History reading, Camiroi and galactic, cultural.

Advanced prodigious memory.

Vehicle operation and manufacture of simple vehicle.

Literature, active.

Astrognosy, prediction and programming.

Advanced pankration.

Spherical logic, hand and machine.

Advanced alcoholic appreciation. Integral religion.

Bankruptcy and recovery in business.

Conmanship and trend creation.

Post-nuclear physics and universals.

Transcendental athletics endeavor.

Complex robotics and programming.

EIGHTH YEAR COURSE:

History reading, Camiroi and galactic, seminal theory.

Consummate prodigious memory.

Manufacture of complex land and water vehicles.

Literature, compenduous and terminative. (Creative book-burning following the Camiroi thesis that nothing ordinary be allowed to survive.)

Cosmic theory, seminal.

Philosophy construction.

Complex hedonism.

Laser religion.

Conmanship, seminal.

Consolidation of simple genius status.

Post-robotic integration.

NINTH YEAR COURSE:

History reading, Camiroi and galactic, future and contingent.

Category invention.

Manufacture of complex light-barrier vehicles.

Construction of simple asteroids and planets.

Matrix religion and logic.
Simple human immortality disciplines.

Consolidation of complex genius status.

First problems of post-consciousness humanity.

First essays in marriage and reproduction.

TENTH YEAR COURSE:

History construction, active.

Manufacture of ultra-light-barrier vehicles.

Panphilosophical clarifications.

Construction of viable planets.

Consolidation of simple sanctity status.

Charismatic humor and pentacosmic logic.

Hypogyroscopic economy.

Penentaglossia. (the perfection of the fifty languages that every educated Camiroi must know including six Earthian languages. Of course the child will already have colloquial mastery of most of these, but he will not yet have them in their full depth.)

Construction of complex societies.

World government. (A course of the same name is sometimes given in Earthian schools, but the course is not of the same content. In this course the Camiroi student will govern a world, though not one of the first aspect worlds, for a period

of three or four months.)
Tenth form thesis.

COMMENT ON CORRICULUM:

The child will now be fifteen years old and will have completed his primary education. In many ways he will be advanced beyond his Earth counterpart. Physically more sophisticated, the Camiroi child could kill with his hands an Earth-type tiger or a cape buffalo. An Earth child would perhaps be reluctant even to attempt such feats. The Camiroi boy (or girl) could replace any professional Earth athlete at any position of any game, and could surpass all existing Earth records. It is simply a question of finer poise, strength and speed, the result of adequate schooling.

As to the arts (on which Earthlings sometimes place emphasis) the Camiroi child could produce easy and unequaled masterpieces in any medium. More important, he will have learned the relative unimportance of such pastimes.

The Camiroi child will have failed in business once, at age ten, and have learned patience and perfection of objective by his failure. He will have acquired the techniques of falsification and conmanship. Thereafter he will not be easily deceived by any of

the citizens of any of the worlds. The Camiroi child will have become a complex genius and a simple saint; the latter reduces the index of Camiroi crime to near zero. He will be married and settled in those early years of greatest enjoyment.

The child will have built, from materials found around any Camiroi house, a faster-than-light vehicle. He will have piloted it on a significant journey of his own plotting and programming. He will have built quasi-human robots of great intricacy. He will be of perfect memory and judgment and will be well prepared to accept solid learning.

He will have learned to use his whole mind, for the vast reservoirs which are the unconscious to us are not unconscious to him. Everything in him is ordered for use. And there seems to be no great secret about the accomplishments, only to do everything slowly enough and in the right order: Thus they avoid repetition and drill which are the shriveling things which dull the quick apperception.

The Camiroi schedule is challenging to the children, but it is nowhere impossible or discouraging. Everything builds to what follows. For instance, the child is eleven years old before he is given post-nuclear physics and universals. Such subjects might

be too difficult for him at an earlier age. He is thirteen years old before he undertakes category invention, that intricate course with the simple name. He is fourteen years old when he enters the dangerous field of panphilosophical clarification. But he will have been constructing comprehensive philosophies for two years, and he will have the background for the final clarification.

We should look more closely at this other way of education. In some respects it is better than our own. Few Earth children would be able to construct an organic and sentient robot within fifteen minutes if given the test suddenly; most of them could not manufacture a living dog in that time. Not one Earth child in five could build a faster-than-light vehicle and travel it beyond our galaxy between now and midnight. Not one Earth child in a hundred could build a planet and have it a going concern within a week. Not one in a thousand would be able to comprehend pentacosmic logic.

RECOMMENDATIONS: a. Kidnapping five Camiroi at random and constituting them a pilot Earth PTA. b. A little constructive book-burning, particularly in the education field. c. Judicious hanging of certain malingering students. —R. A. LAFFERTY

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