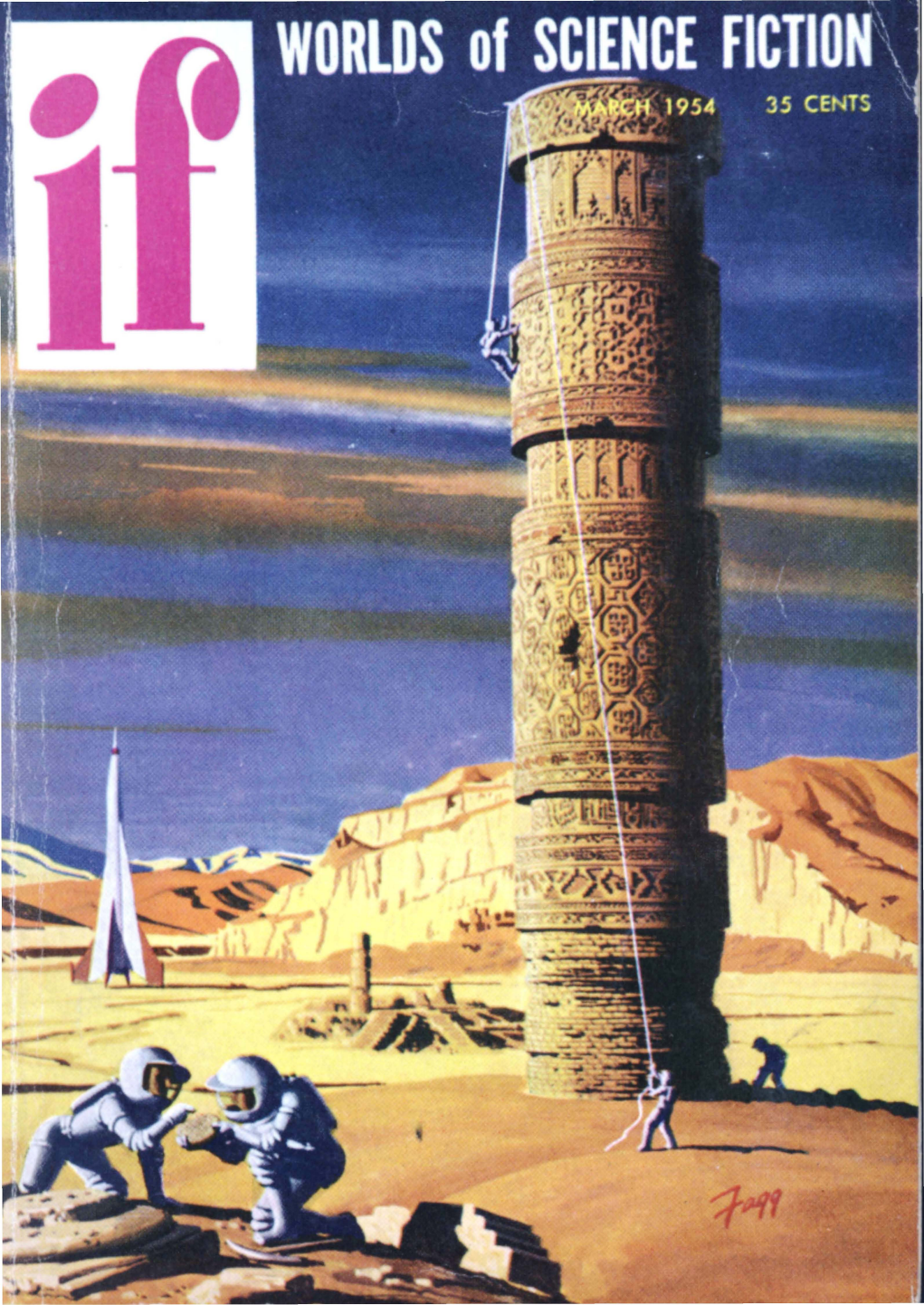
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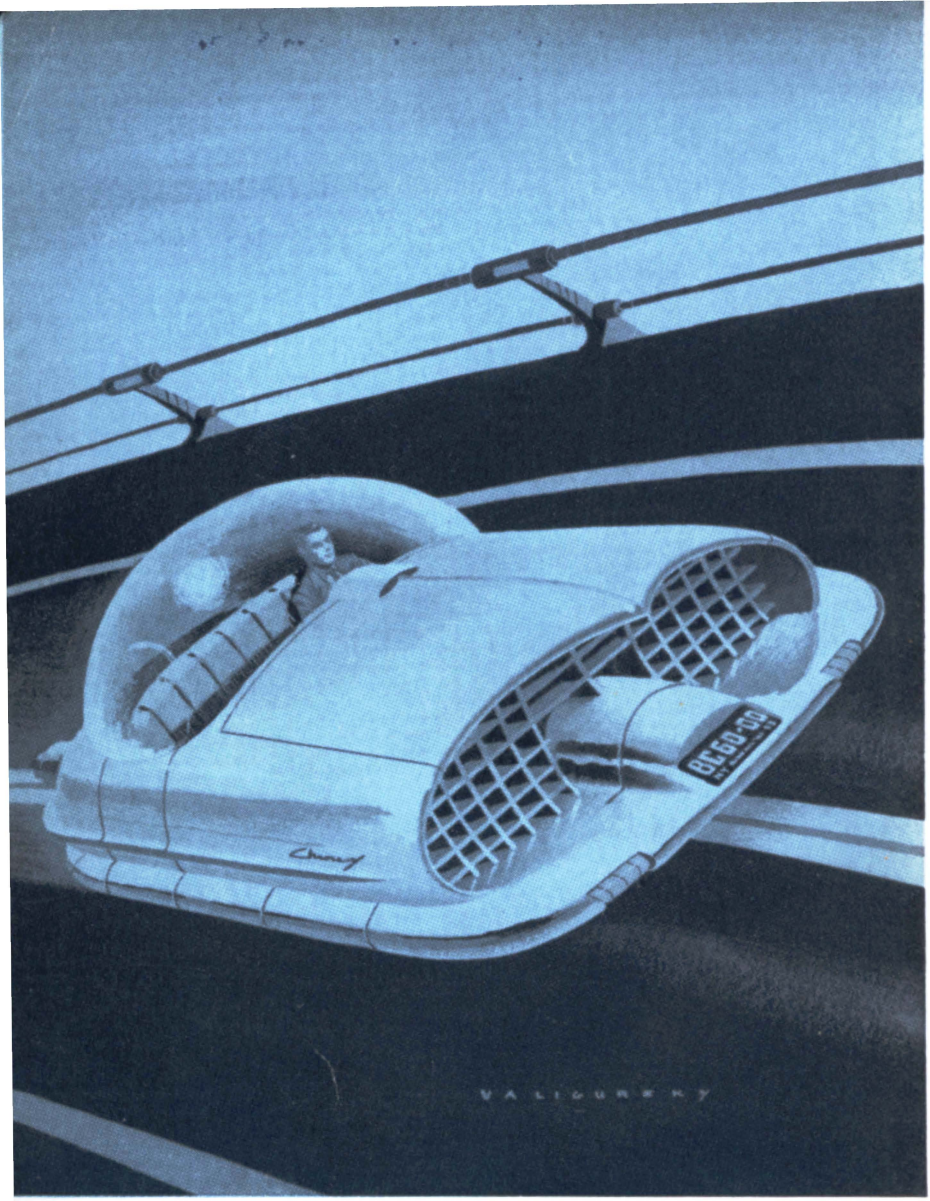
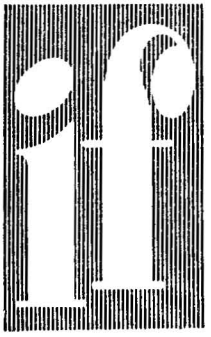


SURFACE TRAVEL AT JET SPEED—Rubber surfaced highways of the future will enable cars to travel at rocket speeds. An electronic beam, traveling between the wheels of the car, transmits signals picked up by car's receiver. These signals control speed, steering, and stopping. Driver has merely to drive car onto beam and relax. Here is safe driving at jet speeds, electronically controlled. Now turn to inside back cover.



WORLDS of SCIENCE FICTION

MARCH 1954

All Stories New and Complete

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By Ed Valigursky

IF is published monthly by Quinn Publishing Company, Inc. Volume 3, No. 1. Office of publication, 8 Lord Street, Buffalo, New York. Entered as Second Class Matter at Post Office, Buffalo, New York. Subscription $3.50 for 12 issues in U.S. and Possessions; Canada $4 for 12 issues; elsewhere $4.50. Allow four weeks for change of address. 35c a copy. Printed in U.S.A.

EDITORIAL AND BUSINESS OFFICES, KINGSTON, NEW YORK

Next issue on sale February 9th

A CHAT WITH THE EDITOR

ALGAE, as you probably know, are the lowest form of plant life. Often single-celled, they sometimes have leaflike and stemlike parts, but no true leaves and stems. Seaweed, kelp and similar aquatic gunk are actually the cities, towns and county fairs of algae.

The time may come, and in the fairly near future at that, when you'll walk into a restaurant and ask the waiter for an order of roast algae, with a side of French fried yeast.

The reasons for this are many. People don't multiply as fast as rabbits, but they're beginning to get the idea. The population of the United States hit 160,000,000 around the middle of last year, and you can expect to be rubbing elbows with 190,000,000 in a couple of decades. Arable land, on the other hand, is definitely going down the drain. Much of it has been ruined by sheer carelessness in the past and won't be useful again for a long time. Other sections are being encroached upon by industry, housing, damsites, bombsites, race tracks, and plain old erosion.

It's improbable that man, stubborn beast that he is, will just give up and fade away. And we can't look to colonization of or imports from other planets just yet, although the possibility of a lend-lease arrangement with the rest of the solar system remains an eventual possibility to anyone with scientific imagination. We'll have to turn to other sources of food right here at home if we're going to survive.

HYDROPONIC farming is one possibility that has been described fairly frequently and will undoubtedly be helpful. Wider use of fish and other denizens of the deep, which remains relatively unspoiled by human hands and gratifyingly large, is also on the list. Both of these, of course, are modifications or extensions of familiar processes; the blue-plate specials we get from them will be easily recognizable. Large economy-sized fruits, vegetables and fish may become the rule, so that one brussels sprout, a piece hacked off a huge tomato, and a steak from a giant octopus will comprise a full meal—but the taste and appearance won't be otherwise alien.

Algae are something else again, and exactly what form they'll take by the time they reach your dinner table is unpredictable. But they're definitely on the way there.

In the vanguard of this important work is the Department of Plant Biology (located in Califor-

nia) of the Carnegie Institute of Washington. This group has studied the mechanism of photosynthesis, by which plants use sunlight for growth, with single-celled algae as guinea pigs. They've been considering the mass culture of algae as a potential food source since before Word War II.

Now the program has advanced to the level of actual engineering studies. Under Carnegie's direction, Arthur D. Little, Inc., a firm famous in many branches of research, engineering and technical economics, has built and is operating a pilot plant on a larger scale than was previously possible. Little's researchers have concentrated on *Chlorella pyrenoidosa,* a well-known and easily available green algae, and the results have been very hopeful indeed.

In this pilot plant operation, *Chlorella* and water were pumped through a transparent plastice tube, which exposed 600 square feet of the stuff to sunlight at one time. Inorganic salts were fed in as nutrients, and air enriched with carbon dioxide was also passed continuously through the tube. After this had gone on for three months, the scientists found themselves with a pile of 80 pounds of fresh, dry *Chlorella* on their hands and a good deal of new and useful information in their notebooks.

One of the most important discoveries was the nutritional value of dry *Chlorella:* it contains about 50 per cent protein, up to 20 per cent fats, and most of the natural vitamins necessary to human health! All of which makes it just about equal to yeast as a food.

This is highly significant, casting as it does a ray of hope that humanity won't have to tighten its collective belt quite so far after all. As usual, of course, there's a joker in the deck—the high cost of algae. Original investment in the equipment necessary to grow *Chlorella* runs to over $30,000 per acre. And even though one acre of culture should produce 25 to 35 tons of dry product annually—which ought to provide for a fair-sized family even assuming that the in-laws drop in for Sunday dinner—the production cost would be about two and one-half times that of comparable vegetable products today. If we reach the stage where there just aren't any comparable vegetable products to be had any more, this isn't likely to deter us much, but that's taking the dim view all around. Actually, there is good reason to hope that a substantial reduction in both original cost and upkeep can be brought about by use of a simpler system.

RIGHT NOW, an interesting project is going on in Japan, at the Tokugawa Institute for Biological Research in Tokyo. Several food products fortified with Chlorella have been made, cooked, salted and peppered, and—yes!—eaten there on a small scale. The Institute's news releases haven't mentioned how *Chlorella* sandwiches taste (and they add the reservation that the average Japanese diet contains similar materials to begin with), but they do take a generally optimistic attitude. At the very least, *Chlorella* may be used within the

(Continued on page 100)

All Earth needed was a good stiff dose of common sense, but its rulers preferred to depend on the highly fallible computers instead. As a consequence, interplanetary diplomatic relations were somewhat strained—until a nimble-witted young man from Mars came up with the answer to the "sixty-four dollar" question.

THE AMBASSADOR

By Sam Merwin, Jr.

Illustrated by Kelly Freas

ZALEN LINDSAY stood on the rostrum in the huge new United Worlds auditorium on the shore of Lake Pontchartrain and looked out at an ocean of eyeglasses. Individually they ranged in hue from the rose-tinted spectacles of the Americans to the dark brown of the Soviet bloc. Their shapes and adornments were legion: round, harlequin, diamond, rhomboid, octagonal, square, oval; rimless, gem-studded, horn-rimmed, floral-rimmed, rimmed in the cases of some of the lady representatives with immense artificial eyelashes.

The total effect, to Lindsay, was of looking at an immense page of printed matter composed entirely of punctuation marks. Unspectacled, he felt like a man from Mars. He *was* a man from Mars—first Martian Ambassador Plenipotentiary to the Second United Worlds Congress.

He wished he could see some of the eyes behind the protective goggles, for he knew he was making them blink.

He glanced down at the teleprompter in front of him—purely to add effect to a pause, for he had memorized his speech and was delivering it without notes. On it was printed: HEY, BOSS—DON'T FORGET YOU GOT A DINNER DATE WITH THE SEC-GEN TONIGHT.


KELLY FREAS

Lindsay suppressed a smile and said, "In conclusion, I am qualified by the governors of Mars to promise that if we receive another shipment of British hunting boots we shall destroy them immediately upon unloading—and refuse categorically to ship further beryllium to Earth.

"On Mars we raise animals for food, not for sport—we consider human beings as the only fit athletic competition for other humans—and we see small purpose in expending our resources mining beryllium or other metals for payment that is worse than worthless. In short, we will not be a dumping ground for Earth's surplus goods. I thank you."

The faint echo of his words came back to him as he stepped down from the rostrum and walked slowly to his solitary seat in the otherwise empty section allotted to representatives of alien planets. Otherwise there was no sound in the huge assemblage.

He felt a tremendous lift of tension, the joyousness of a man who has satisfied a lifelong yearning to toss a brick through a plate-glass window and knows he will be arrested for it and doesn't care.

There was going to be hell to pay—and Lindsay was honestly looking forward to it. While Secretary General Carlo Bergozza, his dark-green spectacles resembling parenthesis marks on either side of his thin eagle beak, went through the motions of adjourning the Congress for forty-eight hours, Lindsay considered his mission and its purpose.

Earth—a planet whose age-old feuds had been largely vitiated by the increasing rule of computer-judgment—and Mars, the one settled alien planet on which no computer had ever been built, were drifting dangerously apart.

It was, Lindsay thought with a trace of grimness, the same ancient story of the mother country and her overseas colonies, the same basic and seemingly inevitable trend, social and economic, that had led to the revolt of North America against England, three hundred years earlier.

On a far vaster and costlier scale, of course.

Lindsay had been sent to Earth, as his planet's first representative at the new United Worlds Congress, to see that this trend was halted before it led to irrevocable division. And not by allowing Mars to become a mere feeder and dumping ground for the parent planet.

Well, he had tossed a monkey wrench into the machinery of interplanetary sweetness and light, he thought. Making his way slowly out with the rest of the Congress, he felt like the proverbial bull in the china shop. The others, eyeing him inscrutably through their eyeglasses and over their harness humps, drew aside to let him walk through.

But all around him, in countless national tongues, he heard the whispers, the mutterings—"sending a gladiator" . . . "looks like a vidar star" . . . "too young for such grave responsibility" . . . "no understanding of the basic sensitivities" . . .

Obviously, he had *not* won a crushing vote of confidence.

TO HELL with them, all of them, he thought as someone tapped him on a shoulder. He turned to find du Fresne, the North American Minister of Computation, peering up at him through spectacles that resembled twin scoops of strawberry ice-cream mounted in heavy white-metal rims.

"I'd like a word with you," he said, speaking English rather than Esperanto. Lindsay nodded politely, thinking that du Fresne looked rather like a Daumier judge with his fashionable humped back and long official robe of office.

Over a table in the twilight bar du Fresne leaned toward him, nearly upsetting his colafizz with a sleeve of his robe.

"M-mind you," he said, "this is strictly unofficial, Lindsay, but I have your interests at heart. You're following trend X."

"Got me all nicely plotted out on your machine?" said Lindsay.

Du Fresne's sallow face went white at this pleasantry. As Minister of Computation his entire being was wrapped up in the immensely intricate calculators that forecast all decisions for the huge North American republic. Obviously battling anger, he said, "Don't laugh at Elsac, Lindsay. It has never been wrong—it can't be wrong."

"I'm not laughing," said Lindsay quietly. "But no one has ever fed me to a computer. So how can you know . . . ?"

"We have fed it every possible combination of circumstances based upon all the facts of Terro-Martian interhistory," the Minister of Computation stated firmly. His nose wrinkled and seemed to turn visibly pink at the nostril-edges. He said, "Damn! I'm allergic to computer-ridicule." He reached for an evapochief, blew his nose.

"Sorry," said Lindsay, feeling the mild amazement that seemed to accompany all his dealings with Earthfolk. "I wasn't—"

"I doe you weren'd," du Fresne said thickly. "Bud de vurry zuggedgeshun of ridicule dudz id." He removed his strawberry spectacles, produced an eye-cup, removed and dried the contact lenses beneath. After he had replaced them his condition seemed improved.

Lindsay offered him a cigarette, which was refused, and selected one for himself. He said, "What happens if I pursue trend X?"

"You'll be assassinated," du Fresne told him nervously. "And the results of such assassination will be disastrous for both planets. Earth will have to go to war."

"Then why not ship us goods we can use?" Lindsay asked quietly.

Du Fresne looked at him as despairingly as his glasses would permit. He said, "You just don't understand. Why didn't your people send someone better attuned to our problems?"

"Perhaps because they felt Mars would be better represented by someone attuned to its own problems," Lindsay told him. "Don't tell me your precious computers recommend murder and war."

"They don't recommend anything," said du Fresne. "They merely advise what will happen under given sets of conditions."

"Perhaps if you used sensible

judgment instead of machines to make your decisions you could prevent my assassination," said Lindsay, finishing his scotch on the rocks. "Who knows?" he added. "You might even be able to prevent an interplanetary war!"

When he left, du Fresne's nose was again growing red and the Minister of Computation was fumbling for another evapochief.

RIDING the escaramp to his office on the one-twentieth floor of the UW building, Lindsay pondered the strange people of the mother planet among whom his assignment was causing him to live. One inch over six feet, he was not outstandingly tall—but he felt tall among them, with their slump harnesses and disfiguring spectacles and the women so hidden beneath their shapeless coveralls and harmopan makeup.

He was not unprepared for the appearance of Earthfolk, of course, but he had not yet adjusted to seeing them constantly around him in such large numbers. To him their deliberate distortion was as shocking as, he supposed wryly, his own unaltered naturalness was to them.

There was still something illogical about the cult of everyday ugliness that had overtaken the mother planet in the last two generations, under the guise of social harmony. It dated back, of course, to the great Dr. Ludmilla Hartwig, psychiatric synthesizer of the final decades of the twentieth century.

It was she who had correctly interpreted the growing distrust of the handsome and the beautiful among the great bulk of the less favored, the intense feelings of inferiority such comely persons aroused. It was from her computer-psychiatry that the answer employed had come: since everyone cannot be beautiful, let all be ugly.

This slogan had sparked the mass use of unneeded spectacles, the distortion harnesses, the harmopan makeup. Now, outside of emergencies, it was as socially unacceptable for a man or woman to reveal a face uncovered in public as it had been, centuries earlier, for a Moslem odalisque to appear unveiled in the bazaar.

There were exceptions, of course —aside from those who were naturally ugly to begin with. Vidarscreen actors and actresses were permitted to reveal beauty when their parts demanded it—which was usually only in villains' roles. And among men, professional athletes were expected to show their faces and bodies *au naturel* as a mark of their profession. Among women the professional courtesans —the "models", not the two-credit whores—displayed their charms on all occasions. Beauty was bad business for lower-caste prostitutes—it made such clients they could promote feel too inferior.

These specialists, the models and gladiators, were something of a race apart, computer-picked in infancy and raised for their professions like Japanese *sumo* wrestlers. They were scarcely expected to enter the more sensitive realms of the arts, business affairs or government.

It was, Lindsay decided, a hell of a state of affairs.

NINA BECKWITH, Lindsay's Earth-assigned personal secretary, was leaning far back in her tilt-chair with her feet on the desk. Her eyes were squinted behind chartreuse-tinted flat-oval lenses to avoid fumes from a cigarette stuck in a corner of her wide mouth. She had shut off the air-conditioner, opened the picture window and pulled the pants of her coverall far up above her knees to let the warm New Orleans September air wash over her skin.

Lindsay looked at her legs with surprise—it had not occurred to him that Nina owned such a long and shapely pair. He whistled softly through his teeth.

Nina removed her smoke, sighed and made a move to stand up and let her coverall fall back over the exposed limbs. Lindsay said, "Not on my account—*please!* Those are the first good looking legs I've seen since leaving Mars."

"Watch yourself, boss," said Nina and indulged in a slow half-smile. Then, putting her feet back on the floor, "You certainly lost a lot of friends and disinfluenced a lot of people down there today. If you'd prepared your speech on the machine I'd have fixed it up for you."

"Which is exactly why I prepared it in my hot little head," Lindsay told her. "I wanted to knock some sense into them."

Nina got out of her chair and snuffed out her cigarette in the disposal tray, then sat on the edge of the desk and poked at the untidy dark-blonde hair she wore in a knot on top of her head. She said, "Night soil! You'll never knock any sense into that mob."

Lindsay, who had been thinking wistfully that if Nina would only do something about that hair, the thickness of her middle, and her bilious complexion, she might be fairly good looking, blinked. He said, "Why in hell do you work for them then?"

She shrugged disinterested shoulders, told him, "It's a job." She yawned, unabashed, added irrelevantly, "You know, boss, the trouble with you is you look like a gladiator. They won't take you seriously unless you wear specs and a harness."

"Over my dead body," he told her. "What's wrong with athletes anyway? I play damned good tennis when I get time to practice."

"Athletes are lousy lovers," she said. "Your correspondence is on your desk." She nodded toward it. "Get it signed, will you? I've got a dinner date."

Lindsay restrained an impulse to ask her with what and signed the letters dutifully.

Nina was a spy, of course, or she wouldn't have the job. In view of his own assignment and the delicacy of Terro-Martian relations at the moment, she must be a good one.

He handed her the letters, noted the slight sway of her thick body as she walked toward the dispatch-chute. A pity, he thought, that the rest of her failed to match the long perfect legs she had so unexpectedly put on display.

"Oh, Miss Beckwith," he called after her. "You don't have to list my appointments on the teleprompter when I'm making a speech after this."

She stopped, cast him an oblique glance over one shoulder and said without much interest, "I didn't know whether you'd get back here or not—and it wouldn't do to forget the Secretary General."

"All right," he said in resignation. When she had gone he wondered if he should have told her what du Fresne had said about his possible assassination, decided it was just as well he had kept mum. He went up on the roof for a copter.

THE DINNER was informal. Lindsay and Fernando Anderson, the flamboyant junior senator from New Mexico, were the only guests. They were four at the charming *ante bellum* mahogany table of the Secretary General's Natchez mansion. Carlo Bergozza, the Secretary General himself—courteous, with natural as well as harness-stooped shoulders, a trifle vague—and his daughter and official hostess, Maria—vividly brunette and dynamic despite the twist given her body by her harness and the mask of huge triangular spectacles—made up the rest of the party.

The meal was simple, automatically served, well prepared. It consisted of plankton soup with chives in chilled bowls, noisettes of lamb with yeast-truffles and bamboo-grass and, in deference to Lindsay, a dessert of Martian lichenberries. Conversation consisted of routine gambits and responses until the dessert.

Then Senator Anderson removed his diamond-shaped raspberry glasses and said, "You'll pardon me, but I want to see what our distinguished visitor really looks like. After all, he can see us as we are."

Secretary General Bergozza looked briefly shocked. Then his overpowering courtesy came to his rescue and he laid aside his own dark green spectacles. He said, "You know, Lindsay, you remind me a little of an American ambassador to the Court of Saint James a hundred and fifty years ago—I believe his name was Harvey. He refused to wear knee-britches to his own reception. Other times, other customs."

"I'm sorry if my appearance is bothering people," said Lindsay, noting that Maria, without her glasses, came close to being a truly pretty young woman. "I'm not trying to disturb them—I merely want them to see me as a true representative of my own world."

Maria said impulsively, "It isn't that you bother us—not really. It's just that you're a little too good looking. Almost like a gladiator. People aren't used to it in a statesman."

"Too good looking—with this busted beak of mine?" Lindsay pressed a finger against his nose, which had been broken in youth by a wild pitch.

Senator Anderson said, "The slight irregularity of your nose is just enough to keep you from being too pretty, Lindsay." He smiled and added, "You certainly stirred up a cyclotron with your speech this afternoon. The British are planning a white paper."

"I merely stated facts as I know them," said Lindsay.

"They aren't used to facts—not

unless they have been computer-processed," said the senator. He seemed pleased for some reason, added, "You may have broken some real ice, Lindsay. I've been trying for years to work out a way to tell people computers are robbing them of all powers of decision."

"All they have to do is confine them to mathematical problems and let people decide human ones," said Lindsay.

The Secretary General cleared his throat. He said, "Without the computers there would be no United Worlds. There would be no world at all, probably."

It was a rebuke. Carlo Bergozza redonned his spectacles and rose from the table. He said, "If you'll excuse me I have some business to attend to. I'm sure my daughter will see that you are properly entertained." He left the room with slow, old-man steps.

Maria said fondly, "Poor darling, he gets so upset. He'll take a pill and go to sleep. Let's go to the bathroom, shall we?"

THOUGH outwardly the Secretary General's mansion was hyper-gingerbread steamboat Gothic, inwardly it was entirely modern in plan. There was a living room, of course, for formal receptions, but as in all normal Earth-dwellings of the period the bathroom was the lived-in chamber.

There and there only did people of the 2070's permit themselves to relax. This was a logical development of latter-day plumbing and air conditioning and the crowding of apartment and small-house life. Actual lavatory plumbing was concealed, in this instance, by an etched glass screen. Otherwise the room featured comfortable plastic lounge chairs and sofas around a fifteen-foot sunken tub and a small semicircular bar, fully equipped.

On entering Maria unfastened her harness and coverall and stood before them, a sweet-bodied dark-eyed girl in her early twenties, clad in shorts and halter. "Lord!" she exclaimed, pushing dark hair back from her broad low forehead, "It feels good to relax. Zalen, I want to talk to you."

"Delighted," said Lindsay, mildly surprised at the use of his Martian first name.

"I've got something to tell him first," said Anderson, unhitching his own harness and emerging as a lean medium-sized man in good condition for his forty years. "I got word just before I flew up here tonight that your life may be in danger, Zalen."

LINDSAY accepted the arrack-fizz Maria handed him, said "That makes warning number two, Senator. Du Fresne talked to me about it this afternoon."

Maria paled visibly. She said, "It sounds impossible!"

"It backs up the judgment of my own group," said Senator Anderson. "Du Fresne is just about the smartest computerman we have." He eyed Lindsay speculatively, added, "You don't seem much impressed by your danger, Zalen."

"How can I be?" Lindsay coun-

tered. "After all, Earth is supposed to be much further advanced than Mars in civilization. And we have had no political murder on Mars in more than fifty years."

Maria made a despairing gesture. "Oh, dear!" she exclaimed. "You *don't* understand, Zalen. On Mars you have both room and time to settle your political conflicts. And you don't have computers."

"We have some pretty sharp rows," Lindsay told her. "But we don't have anyone assassinated." He paused, looked at them both, added, "Do you have many of them here?"

"Not many," said Anderson. "But there is a growing tendency to go along with computer verdicts, no matter how extreme."

"And you believe the British computers are giving accurate answers when they recommend the dumping of millions of pairs of utterly useless hunting boots on Mars? Or those rubber shower curtains they unloaded on us two years ago?"

The Senator said, "There is, unfortunately, no question as to the accuracy of computer answers. The trouble seems to lie in some special condition, local to Britain, that effects computers."

"But if the British computers are wrong, why doesn't somebody do something about it?" Lindsay asked.

Anderson said, "If it were that simple, Zalen . . ." His smile was rueful. "Unfortunately our English friends—or their rulers at any rate —are determined that socialism is the only government suitable to their country. Actually it is nothing of the sort—they can thrive only with a mercantile capitalism under a nominal constitutional monarchy."

"In that case I still don't see—" Lindsay began.

"Contrary to what you're thinking, their leaders are not villains," Anderson told him. "They are men and women obsessed with an ideal that has hampered them for almost two centuries. And they are incapable of accepting any conclusion counter to their ideals."

"Even to impoverishing an entire planet?" Lindsay asked.

Anderson shrugged. "A penalty of their insularity," he replied. "The reason for this little meeting, Zalen, is to explain that not all of us are in favor of supporting Britain and its absurd production bungling at the expense of Mars. A few of us are becoming singularly fed up with the computer neurosis that seems to have this planet in its grip."

Maria leaned forward, her dark eyes brilliant in their intensity. She said, "Can't you see, Zalen, *that* is why we are so concerned with your possible assassination? We fear the whole of Earth is on the lip of a nervous breakdown. Unless the grip of the computers is broken anything might happen. And we're counting on you, with your fresh viewpoint and prestige, to help us."

"I was hoping you might be concerned about *me*," said Lindsay softly. "After all, I'm the one who is supposed to be killed." He watched a sudden flush of embarrassment add charming brilliance to the vividness of the Secretary General's daughter.

"Of course we're concerned," she said defensively. "We're not really monsters, Zalen."

"What Maria means," said Anderson swiftly, "is that if the worst *should* happen it will go a long way toward making Earth entirely computer-dependent, if du Fresne's prophecy is fulfilled a lot of people who might go on fighting will simply give up."

"Just what is your stake in this, Senator?" Lindsay asked.

ANDERSON said, "I could give give you a score of 'good' reasons, Zalen. But my real reason is this—I'm damned if I want to see professional politicians become rubber-stamps to a computer. When Sylac was first used officially three decades ago, it looked as if it might be a help. All we had to do was palm off all unpopular decisions on the machine.

"Elsac, however, has proved to be something else," he went on. "It is making too damned many of our decisions for us—and thanks to our having set Sylac up as a master-brain god we can't controvert its judgment. When President Giovannini gets his new Giac computer working we might as well shut up shop. And the announcement that Giac is in operation may come at any time now."

Lindsay studied him, then said, "Your real complaint then, Fernando, is that the computers deprive you of patronage and power."

"That's about it," said the senator from New Mexico. We'll be reduced to the level of the political commissars of the Soviet nations. The scientists and symbolic logicians who feed and tend the computers will actually be running the country. *And* the world."

"And just where do I come into this?" Lindsay asked.

"You, Zalen, are the last representative of the last sizeable and important human organism that is not dependent upon computer judgment," said Anderson. "That's our side of it. From your own side —if you already distrust computer decisions, as in the case of the British hunting boots—you surely don't want to see them in full control."

"Hardly," said Lindsay. "But at the same time I have no desire to be assassinated or to be the cause of an Earth-Mars war."

"Think it over, Zalen," said Anderson. "I need hardly tell you that I am not speaking for myself alone." He got up, put down his glass, bade Maria farewell and left the Martian alone with her.

When he had gone Lindsay looked at the girl, who returned his gaze quite openly for a long moment before her eyes fell away. He said, "Somehow the senator and you seem an odd combination."

She made no pretense of misunderstanding but said candidly, "Perhaps I am neurotic in my distrust of computers but I cannot help that. Those of us who have any true sensitivity unblunted by the psycho-mechanistics of the era all share this distrust. It is natural, since we are few and weak, that we should seek what allies we can find among the strong."

"I've always heard that politics makes strange bedfellows," said Lindsay casually.

It was obvious that he had committed a *faux pas.* Maria's blush returned and her expression froze. Lindsay cursed himself for a fool. With the development of all sorts of pneumatic resting devices the word *bed* had become not only obsolete but definitely distasteful in well-bred Tellurian circles. Its use was as decried as was that of the word *bloody* in Victorian England.

She said angrily, "I assure you, Mr. Lindsay, that Senator Anderson and I have never. . ." Voice and anger faded alike as she apparently realized that Lindsay had not intended insult.

He let her mix a second drink for both of them. Then, standing close to her and noting the smooth perfection of her creamy white skin, "I wonder if your father knows that he is nourishing a subversive in his family."

She said with a trace of impatience, "Oh, poor papa never sees the trees for the forest."

"You're a damned unhappy girl, aren't you?" he asked her. He didn't need an answer, but realized she wanted to talk about it.

She said, her eyes shining suspiciously, "You're right, of course, I'm very unhappy—constricted in behavior by my father's position, unable to say aloud what I really think, how I really feel. Somtimes I think I must be living in some Gothic poet's dream of loneliness."

"Contrary to the beliefs of most psychiatrists," said Lindsay, half-touched, half-appalled by Maria's intensity, "we are all of us alone."

"Somehow I *knew* you'd understand!" she exclaimed, without taking her dark eyes from his. "I'm not allowed to date gladiators, of course. You're the only man I've ever been with who was not afraid to look as he is."

"You'd better come to Mars," he suggested, shying away a little from the high voltage the Secretary General's daughter seemed to be generating. "I can assure you you'd have a chance to reveal the charms nature gave you without shame."

She laughed with a sudden change of spirits. "It's at least a half hour since dinner. Let's take a dip." She tossed back her lustrous dark hair with a shake of her head and her hands went to the clasp of her halter, a moment later to that of her shorts. "Come on," she called, extending her arms to expose her exciting young body before him. "The water will cool us off."

It didn't work out that way, of course. Lindsay was barely in the tub-pool before Maria's arms were about his neck, her body close against his, her lips thrusting upward toward his own. For a moment he felt panic, said, "Hey! What if somebody comes? Your father—"

"Silly! Nobody will," she replied, laughing softly.

His last rational thought for quite awhile was, *Oh well—I'm hardly in a position to get the Secretary General's daughter angry.*

FALSE DAWN was spreading its dim fanlight over the eastern horizon as he coptered back to his official quarters in the city. Trying to restore some order to thoughts and emotions thoroughly

disrupted by the unexpected events of the evening, he wondered a little just what he had got himself into.

Mars, of course, was scarcely a Puritan planet, populated as it was by the hardiest and most adventurous members of the human race, of all races. But there had been something almost psychopathic about Maria's passion. It had been far too intense to have been generated solely through regard for him.

The girl had made love to him simply to relieve her own inner tensions, he thought wryly. Lacking a man she could love, walled in by the high officialdom of her father's lofty position, she had turned to him in the same way she turned to the anti-computer movement—as a way of feeling less lonely for a while. Still, it had been sweet—if a little frightening in retrospect.

And it had been a little decadent too.

With the copter on autopilot he lit a cigarette and forced his thoughts away from the girl. He wondered if the Governors of Mars were sufficiently in key with the current feelings of Earthfolk to understand fully how deep the repercussions from his speech might go. He wondered if they had considered fully the possibility of interplanetary war.

True, Mars was undoubtedly better equipped to defend itself against such attack than was Earth. Like the mother planet it had its share of robot rockets capable of launching a counterattack. And thanks to the comparative sparseness and decentralization of its population it was far less vulnerable to attack.

But war between the planets would be destructive of far more than cities and the people that lived in them. It would mean inevitably a breakdown of the entire fabric of civilized humanity—a tenuous fabric, true, but all that existed to maintain man.

And an isolated Mars, even if self-sufficient, would be a sorry substitute for a red planet that was part of the United Worlds. It would mean a setback of generations, perhaps centuries.

He began to feel a new understanding of the importance of his mission. With understanding came something akin to fear lest he should not be able to accomplish it without disaster. It was going to be his job to inaugurate some sort of therapy for Earth's illness. It was, in effect, one man against a planet.

Considering the men and women with whom he had talked that day he was unable to take the assassination threat too seriously. Somehow these neurotics and warped zealots, with their allergies and distortion kits, seemed unlikely to undertake or carry through any such drastic action. Their very inhibitions would forbid it.

Not that Maria had been exactly inhibited. Damn! The girl refused to stay out of his thoughts. He recalled what she had told him of her conspiracy against the computers, of its aims and methods. And again he smiled wryly to himself.

They were like spoiled children, he thought. A little group of overintense young men and women, neurotic, excitable, unstable, meet-

ing in one another's houses or in expensive cafes, plotting little coups that never quite came off.

From certain unguarded phrases Maria had dropped during the less frenetic periods of their evening together, he gathered that their current aim was actual physical sabotage of Giac, the mightiest of all computers about to be unveiled, before it went into work.

They didn't even realize, he thought, that sabotage would avail them nothing in the long run—or the short either. Destruction of the computers would not cure Earth. It might easily increase the reliance of Earthfolk upon their cybernetic monsters. What was needed to effect a cure was destruction of human confidence in and reliance upon these machines.

And how in hell, he wondered, was he going to manage that?

TO A MAN from level, water-starved Mars the sight of New Orleans still ablaze with lights at five o'clock in the morning was something of a miracle. Mars had its share of atomic power-plants, of course, but such sources had proved almost prohibitively costly as providers of cheap power.

That was true on Earth too, of course, but Earth had its rivers, its waterfalls, its ocean tides to help out. More important, it averaged some fifty million miles closer to the Sun, thus giving it immense storage supplies of solar heat for power. Without these resources the thousand-square-mile expanse of intricately criss-crossed artificial lighting that was the United Worlds capital would have been impossible.

Lindsay wondered how any people possessed of a planet so rich could be afflicted with such poverty of soul. Or was this very opulence the cause? His own planet was comparatively poor—yet nervous breakdowns were few and far between. There the ugly strove for beauty, instead of the reverse.

He parked the copter on the garage-plat, pressed the button, and watched it sink slowly out of sight to its concealed hangar. Like all Martian natives to leave for Earth, he had been warned about the intense heat and humidity that assailed most of the mother planet, especially in the UW capital. Yet the night breeze felt pleasantly cool against his face and its thickness was like the brush of invisible velvet against his skin. Perhaps, he thought, he was more of an Earthling than three generations of Martian heredity made likely.

He did miss the incredible brilliance of the Martian night skies. Here on Earth the stars shone as puny things through the heavy atmosphere.

But, he thought guiltily, he did not have as severe a pang of homesickness as he ought.

In a state of self-bemusement he rode the elevator down to his suite on the ninety-first story. And was utterly unprepared for the assault which all but bore him to the floor as he stepped out into his own foyer.

Since the attack came from behind and his assailant's first move was to toss a bag over his head, Lindsay had no idea of what the

would-be assassin looked like. For a moment he could only struggle blindly to retain his balance, expecting every instant to feel the quick searing heat of a blaster burn through his back.

But no heat came, nor did the chill of a dagger. Instead he felt his attacker's strong hands encircle his neck in a *judo* grip.

This was something Lindsay understood. He thrust both his own hands up and backward, getting inside the assassin's grip and breaking it. His thumbnails dug into nerve centers and he bent an arm sharply. There was a gasp of agony and he felt a large body crumple under the pressure.

LINDSAY'S first impulse was to summon the constabulary. His second, after examining the face of his would-be slayer, was to drag the man into the shelter of his apartment, revive him and seek to learn what he could about the attempt.

To his astonishment he discovered that he knew the man. His assigned murderer was long, red-headed Pat O'Ryan rated as a top gladiator, a tennis and squash champion whose reputation was almost as widespread among sporting fans on Mars as on Earth. Lindsay had remodeled his own backhand, just the year before, upon that of the man sent to kill him.

He got some whiskey from the serving bar beside the vidar screen, poured a little of it between the unconscious killer's lips. O'Ryan sputtered and sat up slowly, blinking. He said, "Get me some gin, will you?"

Lindsay returned the whiskey to its place, got the requested liquor, offered some neat to the tennis player in a glass. O'Ryan downed it, shuddered, looked at Lindsay curiously. He said, "What went wrong? You're supposed to be dead."

Lindsay shrugged and said, "I know some *judo* too. You weren't quite fast enough, Pat."

O'Ryan moaned again, reached for the bottle. Then he said, "I remember now. Thank God you got my right arm—I'm left-handed."

"I know," Lindsay told him laconically.

The would-be assassin looked frightened. He said, "How do you know?"

"I play a little tennis myself," Lindsay told him. "How come they sent a man like you on such a mission?"

"Top gladiator—top assignment," said the athlete. "We're supposed to do something besides play games for our keep."

"That's a wrinkle in the social setup I didn't know about," said Lindsay. "Mind telling me who sent you?"

"Not at all. It was my sponsors, the New Hibernian A.C." He frowned. "According to the computers I was in. There's going to be hell to pay over my muffing it."

"How do you feel about that?" the Martian asked him.

O'Ryan shrugged. "It's okay by me," he said. "They can hardly degrade me for fouling up this kind of a job. I'll simply tell them their information was incomplete. No one

knew you knew *judo.*" He eyed the gin, added, "A good thing you didn't feed me whiskey. I'm allergic to all grain products—even in alcohol. Comes from being fed too much McCann's Irish oatmeal when I was a kid."

"Interesting," said Lindsay, wondering how the conversation had taken this turn. "What does whiskey do to you?"

The gladiator shuddered. "It usually hits me about twenty-four hours afterward. Makes my eyes water so I can't see much. I've got a match at the Colosseum tomorrow night. I hope you'll be there."

"So do I," said Lindsay dryly. "You wouldn't know *who* gave you this little chore on me, would you?"

"Not likely," said the gladiator. "When we report at the club every evening we find our assignments stuck in our boxes. Usually we get orders to meet a dame. This was something different."

"I see what you mean," Lindsay told him.

O'Ryan got up, said, "Well, I might as well be running along. I'll give them hell for fouling up the computer-prophecy. Look me up after the match tomorrow. And thanks for not having me pinched. I might have had to spend the night in a cell. That's bad for conditioning."

"You're quite welcome," said Lindsay, feeling like a character in a semi-nightmare. "Will I be seeing you again—this way?"

"Unlikely," the gladiator told him. "They'll have to run a lot of checks on you after this before they try again. See you tomorrow."

Lindsay looked after his visitor with amazement. Then it occurred to him that computers were substituting not only for human judgment but for human conscience as well. And this, he felt certain, was important.

Turning in on his contour couch, Lindsay recalled that he had given whiskey to the allergic athlete. He decided then and there that he would be in attendance at the match in the Colosseum that evening.

HE GOT to his office about eleven o'clock. His desk was stacked high with messages, written and taped, and all sorts of folk wished to talk with him on the vidarphone. Nina, looking more slovenly than ever, had arranged them neatly, according to their nature and importance in separate little piles.

"Next time you tear up the peapatch," she informed him resentfully, "I'm going to get in some help." She eyed him with somber speculation, added, "I hear the SecGen turned in early last night."

"You've got big ears," said Lindsay.

"I get around," she said. "I'm supposed to keep tabs on you, boss."

"Then you must know someone tried to kill me early this morning when I came back from Natchez."

Nina's eyes narrowed alarmingly under the glasses that covered them. She said, "Why didn't you report it?" She sounded like a commander-in-chief questioning a junior aide for faulty judgment.

"I won," Lindsay said simply. "There was no danger."

"Who was it?" she asked. And, when he hesitated, "I'm not going to shout it from the housetops, boss."

"It was Pat O'Ryan."

"You handled *Pat?"* she asked, apparently astonished. Something in her tone told him Nina knew his would-be assassin.

"Why not?" he countered. "It wasn't much of a brawl."

"But Pat . . ." she began, and hesitated. Then, all business again, "We'd better get at some of this. You have a date to be psyched by Dr. Craven at two o'clock."

"What for?" he asked, startled.

"Routine," she told him. "Everyone connected with UW has to go through it. But cheer up, boss, it doesn't hurt—much."

"Okay," he said resignedly. "Let's get to work."

While he dictated Lindsay found himself wondering just who was paying Nina's real salary. If she were a spy for the same group that had sent O'Ryan to kill him, his position was delicate, to put it mildly. But for some reason he doubted it. There were too many groups working at once to make any such simple solution probable.

When she departed briefly to superintend a minor matter out of the office, he found himself staring at the wastebasket by his tilt-chair. A heart-shaped jewel-box of transparent crystoplastic lay within it. Curious, Lindsay plucked it out. It had evidently held some sort of necklace and bore the mark of Zoffany's, the Capital's costliest jeweler. Within it was a note that read: *For Nina, who lost last night —as ever* . . . The signature was an indecipherable scrawl.

Lindsay stuck the card in his wallet, returned the box to the wastebasket. Who in hell, he wondered, would be sending this sort of gift to his slatternly thick-bodied secretary. The answer seemed obvious. The sender was her real boss, paying her off in a personal way that would obviate suspicion. Lindsay wondered exactly what Nina had lost.

He was not surprised when she said she would come along to the psychiatrist's with him after an office lunch of veal pralines, soya buns and coffee. He suggested she might be tired, might want the day off.

She said, "Night soil, boss! Between the Sec-Gen's daughter and things like Pat O'Ryan I'm going to keep an eye on you."

As if on signal the vidar-screen lit up and Maria's face appeared on it. She had not donned harmopan or glasses and looked quite as lovely as she had the night before. She said, "Zalen, I've got to see you tonight. Something has come up."

Lindsay nodded. He figured out his schedule, suggested, "I'm going to the match in the Colosseum. Why not take it in with me?"

She shook her head, told him, "I'm tangled up at a banquet for the Egypto-Ethiopian delegation. I can meet you afterward though. How about the Pelican?"

"That's not very private," he protested.

"All the more reason," she announced. "This is *important!"*

"And seeing me in private isn't?" Despite himself a trace of wounded male entered his tone.

Maria laughed softly, her dark eyes dancing. "Perhaps later," she said softly. "You'll understand when I talk to you." She clicked off and the screen was empty.

"Damned cat!" said Nina through a haze of cigarette-smoke. "Watch out for her, boss—she's a cannibal."

"And I'm a bit tough and stringy," he told her.

Nina said, "Night soil!" again under her breath and led the way out of the office. Lindsay wondered if she were jealous.

DR. CRAVEN received them in a comfortable chamber, the north wall of which was all glass brick, the south wall a solid bank of screens and dials. He was a soft-faced man who wore lozenge-shaped light blue spectacles and seemed afflicted with a slight chin rash. He caught Lindsay's regard, rubbed his chin in mild embarrassment, said, "I've a mild allergy to paranoids."

Lindsay looked at Nina distrustfully but she nodded and said, "Go ahead—he won't break your arm. I'll wait outside."

The psychiatrist closed his office door. After settling him in a comfortable contour couch, Dr. Craven opened up with, "I don't want you to have any worries about this test, Ambassador. If anybody's crazy here it's me. According to very sound current theory all psychiatrists are insane. If we weren't we wouldn't be so concerned with sanity in others."

Lindsay asked, "Why in hell am I being tested anyway?"

Craven replied, "President Giovannini himself came in for a voluntary checkup just last week." As if that were an answer.

Lindsay suppressed a desire to ask if the North American president had all his marbles. He had an idea any levity he displayed would register against him. Dr. Craven asked him a number of apparently routine questions which Lindsay answered via a recorder. How old he was, whether he liked flowers, how often he had fought with his schoolmates as a boy, what sort of food he preferred.

"Good," the doctor said, pushing aside the microphone on his desk and motioning Lindsay to do likewise. He rose, wheeled a device like an old-fashioned beautician's hair-drier close to the couch, adjusted the helmet to Lindsay's head. "Now," he added, "I want you to think as clearly as you can of your mother. Keep your eyes on the screen and give me as clear a picture as you can."

He pressed a button and the whir or a camera, also focussed on the screen, sounded from the wall behind Lindsay. When Dr. Craven nodded, he concentrated and, to his amazement, watched a fuzzy likeness of his maternal parent take form on the screen.

This was something new, he decided, and said so. Dr. Craven replied, "Yes—the psychopic is brand new. But concentrate on the picture, please. You're losing it."

It had faded to almost nothing. Lindsay concentrated again, this time brought his maternal parent into clear focus. He felt a little like a man who has never wielded a

brush in his life and has suddenly discovered he could paint a perfect portrait.

Dr. Craven said nothing for a moment. Then, "Will you try to visualize your mother without the blemish at her temple?"

Lindsay tried, and all but lost the picture entirely. He brought it back again, blemish and all, felt a sudden tug of nostalgia for the firm kindly features of the woman who had brought him into the world. A minute or so later Dr. Craven pressed another button and the screen went blank. "That will do very nicely," he said. "You may wait for the psycho-computer verdict outside if you wish."

He found Nina sprawled in an anteroom chair with her long legs stuck out before her, contemplating a flashing diamond-and-emerald necklace. He said, before she looked up and saw him, "Business good, Miss Beckwith?"

To his amazement Nina began to snivel. And when he asked her what he had done to cause it she snapped angrily, "You big pig, you haven't the sensitivity to understand. Don't ever speak of it as business again. Now I'll have to bathe my eyes when I get home or they will be all swollen and horrible."

She removed her glasses and they *were* swollen. Lindsay had seen too much of allergic reactions since reaching Earth not to know he was looking at another. He was relieved when she put her glasses back on.

"Sorry," he said. "I didn't mean to disturb you."

"I know it," she replied, "but you did."

"Perhaps, if you told me—" he began. Dr. Craven chose that moment to emerge from his office.

"If you'll come back inside," he said. "There are just a few more questions I'd like to ask, Ambassador."

"Ask them here," said Lindsay. He had no desire to go back under the drier.

Dr. Craven hesitated and rubbed his chin, which was bright red again. He said finally, "Mr. Lindsay, you didn't kill your mother before you were seventeen, did you?"

"My mother died last year," said Lindsay, unbelieving.

"Incredible!" muttered the psychiatrist, shaking his head. "According to the computer you must have . . ." He paused again, then said, "I hope this won't embarrass you but you evidently are a man who prefers men to women. The stigmata is definite and shows—"

"Night soil!" Nina exploded her favorite expression before Lindsay could collect his wits for an answer. "I'm sorry to disappoint you, Dr. Craven, but this man's a veritable satyr. I caught him looking at my legs yesterday. Ask Maria Bergozza if you want any further proof."

"But this is impossible!" the psychiatrist exploded. "According to the computer—"

"Your computer's out of whack," Nina said calmly, and led a stunned Lindsay out of the place. She added, "You didn't deserve that, boss. Not after puffing my eyes up."

"Why not just keep your glasss on then?" he countered. They returned to their office in unfriendly silence. Lindsay sent Nina home early and took a copter across the Lake to his own place, there to nap

until time for the match at the Colosseum.

HE FELT more at home in the UW box at the vast arena than at any time since reaching Earth. Since it was a sporting event, the eye-glasses were serried, at least in the lower, higher-priced tiers, by good looking faces, male and female, unadorned.

Someone slid into the comfortable contour chair beside him and said, "Evening, Zalen. Enjoying yourself?"

Lindsay looked into Senator Fernando Anderson's diamond-shaped raspberry glasses. He said, "So far —how about you?"

Anderson made a face. "I had a date with a gorgeous item but she put me off until later. So I thought I'd look in. Maria arranged a seat in the UW box. Otherwise I'd be watching it on vidar."

Lindsay looked up and around and discovered that the vast stadium was packed to the rafters, judging by the glowing cigarette tips that resembled an uncountable horde of frozen fireflies.

The court itself was pitch-dark, save for the lines and the net. He had trouble recognizing O'Ryan as his would-be assassin and opponent walked out. Neither player was clearly visible of feature, though shoes, shorts and racquets were luminous, as were the balls they began to hit back and forth across the net.

The only other luminous objects, save for the dim exit lights, were the betting boards. Lindsay, who had never seen one save on a vidar-screen before, asked Anderson how they worked. The senator from New Mexico was glad to explain.

"Naturally," he said, "since the results of all athletic contests are predicted on the computers, there is no betting on who will win."

"No upsets?" Lindsay asked."

Anderson laughed, said, "The last time there was an upset—in the British Australian test cricket matches three years ago—a computer investigation proved bribery and there was a hell of a stink."

"Then how do you manage to bet?" Lindsay asked.

"Simple," said the Senator. "Naturally, in case of accidental injury, all bets are void. But otherwise the betting is on the percentage of variation between the computer prediction and the actual play of the contest. There—you can see the computer line on the big board over there. The line of actual play will be red when it comes on. That way there is plenty of chance for betting on points, games, sets or match."

The man from Mars studied the predictor line for the match. It revealed that Pat O'Ryan, after a fast start, was due to slump in the second set, recover in the third and polish off his opponent, Yamato-Rau from Indonesia, in the fourth set with the loss of but one game.

"Looks like a shoo-in for O'Ryan," he said. "Right?"

"It ought to be," the Senator replied. "He's taken Yamato-Rau in six of their seven previous matches. "The second time they played he had a sprained wrist that affected his volleying."

"Care to make a bet?" Lindsay asked his companion.

"Sure—why not?" Anderson countered. "Percentage of variation for game, set or match?"

"I'd like to bet on the Indonesian to win," said Lindsay quietly.

IV

SENATOR ANDERSON looked at Lindsay sharply. He said, "You know something."

"Against the computer-prophecy?" Lindsay countered.

Anderson backed down and gave him a hundred to one on a fifty-credit bet. "You can't win, of course," he murmured, "but if you do it will be worth it."

The match began and the hum of the great crowd's conversation slowly quieted. At first it went according to the computer prophecy. Serving brilliantly, hitting crisply from either hand and smashing and volleying with deadly accuracy from all parts of the court, Pat O'Ryan held complete command of the match.

There was something hypnotic about the play—the clean *ping* of racquet strings on luminous ball, the swift flight of the ball, a streak of light in the darkness, the flash of another racquet, the long and intricate tactics of each exchange, broken only occasionally by the flash of a light that betokened an error or an ace and the resulting alteration of the scoreboard.

The red line crept in zigzag fashion along the computer board as the match progressed, veering above or below the white line of the prophecy but always returning to cross or even to cover it briefly. Big O'Ryan took the first set six games to three on a single service break against the Indonesian champion.

"Money in the bank," said Anderson in Lindsay's ear as the players changed courts following the first game of the second set, which Yamato-Rau had taken at fifteen. "Candy from a baby."

"It's barely begun," said Lindsay with a confidence he was far from feeling. He glanced at the clock above the scoreboard, saw that it was scarcely ten o'clock. Sickly he recalled that O'Ryan had told him it took twenty-four hours for his grain allergy to take effect. Lindsay had given him the drink barely seventeen hours before. He began to wish he had not bet so thoughtlessly.

The second set went to deuce twice before Yamato-Rau broke O'Ryan's service to run it out at eight-six. This was two games more than the computer had calculated and caused considerable uproar in the crowd.

"I hear you had some trouble last night," Anderson told him.

"Nothing serious," said Lindsay, wondering how much the senator knew. Dammit, he thought, he wished he didn't like the power-hungry politician.

He wondered if Anderson were behind the attempt of the morning—and if he were behind it, why? There could, he decided, be all sorts of Machiavellian motives hidden beneath that smiling face. Then the match got under way once more, and Lindsay concentrated on the play.

Once again O'Ryan seemed to be in command—just as the computer had foretold. Games went to five-

two in his favor. Then, as the players changed courts once more, the tall Irishman paused to towel off—and paid special attention to rubbing his eyes.

At that his string ran out. Four straight times his swiftest drives hit the top of the net and bounced back into his own court. He blew his service thanks to a pair of double-faults and three minutes later Yamato-Rau had taken the set while the crowd sat in stunned silence.

The fourth set was pitiful. O'Ryan played like a blind man and the Indonesian ran it out with the loss of exactly one point per game. The red line on the computer-board yawed wildly toward the bottom instead of following the white line as it should have.

"Keep your credits," Lindsay told Senator Anderson. "You were right. As it turned out I did know something after all."

"It's impossible!" cried the senator. "But it's cheap at the price—here!" He withdrew his wallet and began pulling out crisp hundred-credit notes.

"Look out!" cried Lindsay. Around them the stands had erupted into violence. While the players were shaking hands at the net, angry—and, Lindsay suspected, frightened—bettors and spectators leaped the low barriers and swarmed out onto the dark court. They hemmed the players in, driving them toward the wall directly under the UW box in which Lindsay and Anderson were sitting.

Someone threw something and Yamato-Rau stumbled and fell to his hands and knees. Swinging his racquet like one of his ancestors' shillalehs, O'Ryan charged to his rescue, pulled him to his feet, covered his retreat to the wall. There Lindsay was able to pull first the Indonesian, then the Irishman, up into the box.

"Damned fool!" said Anderson. "Getting us into a riot." But a moment later Lindsay saw the senator swinging hard at an angry customer with a fist in which his wallet was still clenched. The man made a grab for it as someone else hit Anderson over the head with a plastic bottle. He dropped across a contour-chair, letting his wallet fall from unconscious fingers.

UW police formed a protective wall around them and Pat O'Ryan, recognizing Lindsay, said, "Thanks, Ambassador. I guess I owe you a couple. If my eyes hadn't gone bad on me . . ."

Lindsay was tempted to admit his guilt in that matter but decided against it. He had no desire to be caught in another riot. He picked up Anderson's wallet, put it back in the still unconscious senator's breast pocket. A white-clad interne was brought through the police cordon, knelt beside Anderson and began to make repairs.

"You'd better leave now, Ambassador," said one of the boss policeman respectfully to Lindsay when the senator had been carted away on a stretcher. Lindsay nodded. Then he noticed a slip of paper lying beneath the chair across which Anderson had fallen. It read: *rec. 10,000 cdt. 1 em. & di. neck.* It was from Zoffany, the jeweler.

"What the hell!" Lindsay dis-

covered he was speaking aloud. He stuffed the paper in his pocket and followed the officer through a maze of underground passages out of the Colosseum. He still thought, *What the hell!* What could Nina have reported about him that was worth that sort of money to the senator?

SPY, SLATTERN or not, Nina was efficient, as he realised when a bowing motley-clad waiter captain smilingly ushered him to a secluded table for two in a banquet niche of the Pelican. It was Lindsay's first visit to an Earthly after-dark cafe and he instinctively compared it with certain of its imitations in the comparatively small cities of his native planet.

It was sleeker, better run, far more beautiful. Its general color scheme was darkly opalescent, subtly glowing, flattering to its clients. And, of course, most of them needed flattering, at least to Lindsay's alien eyes. He noted here a pair of scimitar-shaped spectacles whose turquoise-studded rims caught the light like a pair of small lemon pies, there a harmopan-covered female face that glowed pale green in the darkness.

But even more numerous and decorative than at the stadium, the gladiators and courtesans were present, reinforced by a larding of vidar stars visiting or entertaining in the capital. And these, Lindsay admitted to himself with awed reluctance, outshone in sheer beauty and handsomeness any group of Martian humans.

They ought to, he thought. Direct descendants, figuratively if not actually, of the advertising-Hollywood beauty fetish of the previous century, they were selected almost from birth for their callings and trained rigorously from childhood on, the males to become athletes or actors, the females courtesans or actresses.

There was no race among them, for their only standards were beauty and physical fitness, no creed but achievement in their lines of individual entertainment. He caught sight of a lissome Euro-African, the classic exoticism of her flower-petal face illumined by joyous laughter beneath a glossy neo-Watusi hairdo, as she glided gracefully over the dance-floor in the arms of a hunch-harnessed and bespectacled partner.

The gladiators and courtesans alone seemed to find joy in living. Lindsay, who had seldom been unhappy in his active existence, felt his sympathies and heart go out to them. He followed the progress of a tiny Oriental model whose face was alive with good-humor as she swept past his table, her exquisite figure stressed by a glittering jeweled sheathe.

"You really should wear glasses —or else learn not to stare," said Maria, appearing from nowhere and sitting down at the table. She made amends by extending a warm soft hand to grip one of his. Though she wore her glasses and her hair was severely pulled back, he had no difficulty in recalling the fact that, unclothed, she was lovely.

"Why don't you get in on the act?" he suggested, nodding toward a pair of models emerging from the harmopan room. "All you'd have

to do would be to remove your specs and harness and let your hair down."

"You're sweet, Zale," she said, pleased. Then, with a sigh, "But there's a lot more to it than that."

"You do all right that way too," he told her boldly.

She slapped the back of his hand and then, growing quickly serious, said, "Zale, I didn't ask you to meet me for that. I've got so much to ask you—so much to tell. Did you really find an assassin waiting for you when you got home last night? And did you kill him?"

"Yes and no," said Lindsay. "I did find one and I didn't kill him. In fact we parted good friends."

"You Martians . . ." She sighed, then said, "And I understand you have already broken two computers —this afternoon at the psychiatrist's and this evening at the Colosseum. It's the most marvelous news, darling. I've got to know how you did it."

"I'm damned if I know how I fouled up Dr. Craven's computer," he told her. "I'm still trying to figure it out."

Her face fell. She said, "I was hoping you had something . . . But never mind." Then, brightening, "But you're driving them crazy. They ran Dr. Craven's results through Elsac late this afternoon and got the same answer. The records checked that you didn't kill your mother and *I* know you're not an invert." She laughed softly.

Spurred by the erotic atmosphere, plus the dizzying speed of recent events and Maria's nearness, he said, "Let's get out of here and go to my place."

Her hand covered his again atop the table. "I wish we could," she said wistfully. "I like you *very* much, Zale darling. But this is too important. We haven't time. But what about the tennis tonight? There's going to be an investigation, of course. Won't you tell me how you did it?"

"Not until I've figured out both," he said. "I may be on the track of something or it may be sheer chance. Until I understand what happened at Dr. Craven's I'm simply not sure of my facts."

"But there simply isn't time, darling," Maria told him. "This is really what I must talk to you about. We got word today that President Giovannini is going to unveil Giac any day now."

"Decided against your sabotage plan?" he asked her.

She wrinkled her pert little nose. "What's the use? They'd simply repair it. Besides, it's much too well guarded. Zale, you're our only hope now."

He said "If I'm right, and I'm beginning to hope I am, it won't matter whether Giac is unveiled or not. In fact, it might be more effective if it were."

Maria drummed on the table with nervous knuckles. "But you *don't* understand, Zale. You don't think for a minute that the Ministry of Computation is taking this lying down. I got word less than half an hour ago that they are preparing to force your recall as an unsuitable plenipotentiary."

"They can try." Lindsay spoke grimly. This was a move he had failed to forsee, though he supposed he should have. Inadvertently he

was becoming a major threat to the crockery in the china shop that was Earth.

"They can do it," Maria said simply. "Zale, these people have become absolutely dependent upon their computers. They aren't going to let their entire creed be wrecked by one Martian."

"What do you want me to do?" he asked simply.

"Come with me—now," she said, once more gripping his hand. "A group of us want to talk to you, to find out *how* you have done it."

He looked at her, found her adorable in her earnestness. He said, "And if I play guinea pig with your friends, then you and I . . . ?"

"Of course—as soon as there's time," she told him.

"You *are* a little bundle of fana-

ticism, as well as of sex," he told her. "I should think at least, since you seem to have such an inside track, you could manage to get my recall deferred."

"That's just *it!*" she exclaimed bitterly. "I see everything, I hear everything—yet I can *do* nothing. Papa thinks I'm merely a foolish female creature and his attitude blocks me at every turn." Lindsay realized again how fundamentally frustrated she was, wondered if she would ever find a completely satisfactory release.

Lindsay decided to play along. "All right," he said. "Shall we go?"

"Thanks, darling," she promised. "We'd better go separately. There will be a blue copter-cab waiting outside when you leave." She leaned across the table to brush his lips briefly with hers, squeezed his hand and glided off.

HE WONDERED, while he waited for the check, just how foolhardly he was being, allowing himself to be summoned to a meeting of palace conspirators. It could very easily be a trap, whether Maria knew it or not. It could be a ruse to add fuel to the fire being lit under him for his recall as a *legate persona non grata* on Earth.

"You *haven't* forgotten our date, have you darling?" The voice was throatily reproachful above him and he looked up in surprise at a glittering female figure, who seemed to be clad entirely in blazing brilliants.

She was tall and blonde, her hair an ocean helmet of gold, sprinkled with gems. Her face was beautifully boned, with broad cheeks and forehead pierced by a decided widow's peak. Light green eyes slanted upward beneath brows like the wings of some tiny graceful bird. Nose, lips and chin gained fascination from the perfection they skirted but just escaped. Face, arms, upper bosom and shoulders wore the even tawny golden tan that only some blondes can achieve.

Her figure, ashimmer with gems, was lithe of waist, firmly full of breast and pelvis, moved with the enticing grace of an Indonesian temple dancer as she slipped into the seat Maria had so recently vacated.

"Sorry, your highness," he said with a look of honest admiration. "I didn't know we *had* a date."

"We have now," she stated. She laid a handbag solidly encrusted with diamonds, emeralds and rubies on the table, said to the dwarf waiter, "Bring me the usual, Joe—and give Ambassador Lindsay another of whatever he's drinking."

At any other time, Lindsay thought. He said, "I regret this more than you'll ever know, my dear, but I've got a copter-cab waiting for me outside."

"It will keep." The girl pouted prettily, then leaned toward him and said huskily, "We'll have just one here. Then we can go to my place. It's just outside of Biloxi, almost on the Gulf. We can watch the dawn come up over the water. We can—"

"Stop twisting my arm," said Lindsay, trying to keep his thoughts in focus. Who had sent *this* girl and why? And what, he wondered, awaited him in Biloxi.

He got up, tossed a twenty-credit note on the table. "This will pay the check," he informed her.

"Not so fast," said the houri, rising with him. Trying to ignore her, he headed toward the door as fast as he could.

She kept after him and his ears burned as he plunged out into the night, saw the blue copter-cab waiting with its door open at the curb. But when he tried to plunge toward it he was halted by an arm whose sharp-faceted jeweled adornments cut his adam's apple. He gasped but the girl got in front of him, waving her bag.

There was a faint popping noise as the door closed and the copter-cab swiftly and silently darted away. Stunned by the swiftness of events, Lindsay was utterly incapable of resistance when his decorative tormentor thrust him into another vehicle. As they took off he said, "I suppose this is the prelude to another assassination try."

"Night soil!" said a familiar voice. "What the hell do you think I just saved you from, boss?"

LINDSAY uttered one word—a word which, he thought later, was singularly revealing as to his native flair for diplomacy. He said, briefly and succinctly, *"Huh?"*

"Listen, my fine unfeathered Martian friend." She sounded like a primary school teacher addressing an overgrown and somewhat backward pupil. "Somebody fired a glass bullet at you from that cab."

"How do you . . .?" he began helplessly.

For answer she turned on the copter-cab light, revealing the back of a uniformed chauffeur, and showed him her handbag. There was a slight tear in one side of its begemmed surface and, when she shook it, bits of glass fell to the floor. "Careful," she warned when he reached for the bag. "It was probably packed with poison." Then, "Can you think of a better shield than diamonds?"

He said, *"Ulp!"* Unquestionably, now that she had revealed herself, this glittering creature was his slovenly office Nina. Seeking desperately to recover what had at best been a shaky boss-secretary relationship, he said, "Where are you taking me?"

"Out of the city, boss," she informed him. "We really are going to my place in Biloxi. You're much too hot a property to be allowed to wander around loose. Two tries in less than twenty-four hours."

"Then Maria . . ." he said, wonderingly.

Nina picked his thought up crisply. "We don't know whether your little playmate put the finger on you consciously or not. But she did it. Some of that sweet little crew she pals around with are desperate. They don't believe they can lick the computers and their only hope is to foment incidents that will lead to an interplanetary war. Nice kids!"

"But why pick on me?" he asked. "From what Maria said tonight I'm their one hope of beating the machines."

Nina shook her head at him sadly. "And you're the best brain our Martian cousins could send us. Here it is in words of one syllable. Maria's mob wants war. They be-

lieve they can light the powder train by arranging the assassination of a Martian Plenipotentiary.

"Meanwhile your speech yesterday and your fouling up Doc Craven's computer this afternoon, and whatever you did at the tennis tonight, have the Computer crowd screaming for your recall before you upset their little red wagon." She paused, added, "Naturally Maria's crowd wants to have you killed before you become a mere private citizen of Mars. Once you're removed from office you aren't important enough to cause a war."

"Good God!" said Lindsay as the double pattern became apparent. Then, curiously, "And just whom do you represent, Nina?"

She eyed him steadily, mockingly for a moment. Then she said, "Let's just say for now that I represent the Model's Union. We don't want any wartime austerity wrecking our pitch. Will that do?"

"I guess it will have to," he said. Then, plucking a diamond-and-emerald necklace from among the half-dozen about her throat, "You certainly didn't give poor Anderson much for his money."

"Stop it!" she snapped. "Do you want my eyes to swell up again? In a way what happened tonight was all your fault. Fernando and I were going to keep close tabs on you but you fouled me up with your beastly remark about my business at Doc Craven's and then put poor Fernando out of commission by getting mixed up in that riot at the Colosseum. I barely made the Pelican in time."

He thought of giving Nina the receipt from Zoffany's in his pocket, decided not to take the chance. So he said, "Is Fernando working for the Model's Union too?"

"Stop trying to be funny," she told him. "Night soil! You make me so damned mad. Letting that little tramp Maria nail you."

"At the time there wasn't much alternative," he said. Then, eyeing her closely, "How come you're mixed up in UW politics? I thought models were strictly for fun and games."

Nina said matter-of-factly, "I won top model rating when I was seventeen. I still hold it and I'm twenty-six now. A girl can get tired of being and doing the same thing—even in my profession. Besides, I've got brains. So I try to use them."

"How come you decided to be my secretary?"

"We drew lots and I lost," she informed him.

THE COPTER dropped by searchlight to a flagged terrace in front of a dark cottage just off the beach. "Thanks, Bob," said Nina. "Tell the boys to stand by with their guard beams up." Then, to Lindsay, "Come on, boss, let's get out of this heap."

She walked swiftly toward the cottage, pressed something. Soft lights came on, revealing a charming simulated wood dwelling in the fine antique Frank Lloyd Wright tradition. She ushered him into a delightfully gay bathroom looking out on the water, said, "Wait here while I get this armor off."

Lindsay felt a slight qualm as he considered what being a top model

at seventeen must mean. And then he thought, Why not? Certainly he had no claim on Nina's morals. He doubted if anyone had a claim of any kind on her.

She emerged, looking unexpectedly like a young girl in simple clout and cup-bra, which exposed most of her gorgeously tanned body. Her hair, innocent of jewels like the rest of her, was clubbed back simply with some sort of clip. She lit a cigarette and said, "Now—how the hell are you fouling up the computers?"

"I'm not," he told her promptly. "At least not in the case of the tennis match. I just happened to know something about Pat O'Ryan the people who fed facts to the computer didn't."

"That goon Pat!" she said. "He's so damned dumb."

"You know him well?" he asked with a trace of jealousy.

"I know him." She dismissed it with a flick of her cigarette. "It's a good thing you knew *judo* too, boss. But what did you do to him that fouled up the match?"

"While he was out cold I gave him a shot of whiskey to bring him 'round," Lindsay told her. "He didn't know about it and I didn't tell him when he informed me about his grain-alcohol allergy. So for once the computer didn't get full facts. And I had them."

For the first time Lindsay basked in a smile of approval from Nina. She said, "And then you had to mess me up at Doc Craven's so I couldn't sit in on the match."

"I'm sorry about that," he said sincerely. "You might brief me so I don't do it again."

"Well . . ." She hesitated. "I don't want to set myself off. It's not uncommon among us—models. You see, we're proud of our careers, not like the two-credit whores who wear glasses and harnesses. And it hurts us when someone refers to our work as business. You see, there's nothing really commercial about it. So when you—"

"But how the devil was I to know you were a model?" he asked her.

"I know," she said illogically. "But it still made me mad." Then, frowning, "But if the computer was wrong because of incomplete knowledge at the Colosseum, what was wrong at Doc Craven's?"

Lindsay said, "I'm damned if I know."

"We've *got* to know, with the president ready to put Giac to work."

"I meant to tell you about that," said Lindsay.

"Don't worry," Nina informed him. "Your table at the Pelican was wired."

"Why are you against computers?" Lindsay asked her.

She dropped her smoke in a disposal-tray, said, "Never mind why—let's just accept the fact that I am. And not for Fernando Anderson's reason either. He just wants power."

"And what do you want?"

"Me?" Her eyebrows rose in surprise. "Why, I just want to have *fun!*" She extended her arms and flapped her hands like birds. Then, again reverting to seriousness, "I wish you'd tell me everything that went on at Doc Craven's yesterday. Dammit, *his* office wasn't wired."

Lindsay went through it, as nearly word for word as he could, then

did it again when no answer was quickly forthcoming. Nina listened, her perfect forehead marred by a frown. Finally she said, "Let's take a dip. It's almost dawn."

She removed what clothing she wore and Lindsay did likewise. They felt the refreshing caress of the cool Gulf water on their skins —but that was all the caressing there was. Nina, unlike Maria, was all business despite the near-blatant perfection of her charms. Back in the bathroom she said, "The only thing I can think of is that stigmata business. Why should you imagine a mark on your mother's forehead?"

"Because she had one," he told her bluntly. "It was not unattractive—my father used to call it her beauty mark."

Nina ran long slim fingers through her water-dark hair and said incredulously, "You mean blemishes are not removed automatically at birth on Mars?"

"Why, no," said Lindsay, surprised. "It's entirely up to the individual—or the parents."

"And Doc Craven asked no questions that would lead to the truth?" the girl asked, blinking. When Lindsay shook his head she suddenly grabbed him and kissed him and did a little dance of sheer joy. "It's simply too good to be true! Two computers fouled in one day through missing information!"

"You're right, of course," he admitted. "But I'm damned if I see how it does us any good."

"You idiot!" she shook him. "It clears the whole situation. It means that the computers cannot give accurate answers according to the symbolic logic tables unless they get full information. And you have proved two breakdowns in the inescapable human element—the information feeding—just like *that!*" She snapped her fingers. "It means we've got the whole computer-cult on the hip. I could kiss you again, you big goon." She did so.

"Cut it out," he said. "I'm not made of brass."

She said, "Night soil," amiably. What he might have done he was never to know, for a buzzer sounded and Nina moved quickly to a wall-talkie. She said, "All right, Bob, you say he's clean?" Then, a moment later, "Better let him in and say his piece." And, to Lindsay, "We've got company. Dmitri Alenkov—met him?"

Lindsay frowned. "You mean the Soviet *chargé d'affaires?* I met him at the reception last week. Dreadful little lizard."

"Dmitri might surprise you," she said enigmatically.

Lindsay almost said *night soil* himself in exasperation. Instead and peevishly he asked, "Is there anybody you don't know—intimately?"

She laughed. "Of course," she said, "I don't know many women."

THE SOVIET diplomat entered the bathroom. He was a languid mincing creature whose decadence glowed around him like phosphorescence around a piece of rotted swampwood. He said, "I hope I am not intruding."

"That depends," Nina told him. "*I'd* like to know how you traced us here so quickly."

"My sweet," said the Russian in

intensely Oxford Esperanto, "you and your friend's"—with another bow toward Lindsay—"little affair at the Pelican was witnessed this evening. When the two of you departed together, heading eastward, and Ambassador Lindsay could not be reached in his apartment . . ." He paused delicately.

So this, thought Lindsay, was a descendant of one of the Red Commissars whose fanatic and chill austerity had terrorized the free world of a century ago. Lindsay knew something of modern Soviet history, of course. There had been no real counter-revolution. Instead the gradual emergence of the scientists over their Marxist political rulers had been a slow process of erosion.

Once computer rule was inaugurated in the North American Republic and swept the Western World, the scientists had simply taken over real power. The once-powerful Politburo and its sub-committees became obsolete.

Alenkov was stressing this very point. He said, "So you see, we, the best blood of Russia, are forced by these machines to live the lives of outcast children. Naturally we resent it. And when, after so many long years of waiting, we learn that one man has succeeded in foiling the computers where no man has succeeded before, we want to know his secret. We must have it."

Nina spoke first. She said, "Dmitri, the secret, as you call it, has been right there all along for any of us to see. It just happens that Ambassador Lindsay fell into it head first."

"Thanks for the 'Ambassador' anyway," Lindsay said drily.

Nina quelled him with a frown. "The computer weakness," she said, "lies in the human element. Now figure that out for yourself."

Alenkov's brows all but met in the middle of his forehead and his mouth became a little round O under the twin commas of his mustache. He said, "I see."

He left shortly afterward on a note of sadness, rousing himself only to say to Lindsay, "Ambassador, you are a very lucky man." His eyes caressed Nina's near-nude figure.

"That," Lindsay told him, "is what you think."

When he had departed Lindsay suddenly realized he was exhausted. He sank back in a contour chair and let fatigue sweep over him. But Nina paced the bathroom floor like a caged cat. Finally she went to the wall-talkie, gave a number in a low voice.

She pushed some sort of signal button several times, then swore and said, "Better not sleep now, boss. We're cut off."

It brought him to with a start. "What do you mean?" he asked.

"Somebody or something is jamming our communicator."

She opened a concealed cabinet, apparently part of the bathroom wall, drew from it a couple of light but deadly looking blasters, and tossed one onto the contour chain in front of him. "You know how to work one of these things?" she asked.

"Better drop the weapons," a quiet voice said from the doorway behind them. "You haven't got a chance."

The speaker wore the light blue

tunicall that was the summer uniform of the Army of the Republic of North America. His cap and shoulder-boards were bright with silver lace and he held a singularly ugly little automatic weapon cradled across one forearm.

Nina and Lindsay dropped their weapons. But the girl's back was up. Her slanting eyes crackled green fire as she said, "What right have you bastards got to come busting in here without a warrant?"

"Sorry," said the officer with chilling courtesy. "As it happens we do have a warrant. Remember, Miss Beckwith, this cottage is not United World's soil." He tossed an official looking document which Nina caught, motioned a couple of his men to pick up her weapons.

"All right," she said after scanning the warrant. "What do you want?"

"Ambassador Lindsay," was the reply. "We have been ordered to ensure that no harm comes to him while he is on American soil."

"I can read!" snapped the girl. "There's going to be hell to pay over this." Then, to Lindsay, "We can't stop them now but they can't hold you. *I* can see to that. Just try to keep your big dumb blundering self out of any extra trouble till we can take steps—will you promise me that, boss?"

"I'll try," said Lindsay.

THEY TOOK HIM to Washington—or rather to Sherwood Forest, in Annapolis, where the summer White House sprawled over and beneath its landscaped acres. To a man from Mars it was very green, very lush, very beautiful.

Lindsay's first impression of famed President Giovannini was that the famous elected leader of the North American Republic was composed mostly of secretaries. But at last one of them—the seventh or eighth—said gravely, "If you'll just step this way, please," to Lindsay and motioned for the Army officer to remain where he was. He was admitted to the bathroom of the man who had sent for him so summarily.

The president proved to be unexpectedly like some of the governors of Lindsay's home planet—incisive, unaffected, easily articulate. Physically he was stocky, of middle height, with a round, firmly fleshed sensitive face. He wore huaraches and bright blue shorts, no glasses or distortion harness.

He waved Lindsay to a contour chair beside his own, said, "Sorry I had to have you hauled here this way. I was afraid you'd get killed if I didn't. Do you have any idea of the uproar you've caused in the past two days, young man?"

Lindsay, somewhat taken aback by the president's abruptness, said, "Well, I knew some small groups were upset but . . ."

"Take a look," the president told him, waving toward a quartet of vidar screens on the wall. Over one of them was the legend, New Orleans, over another, New York, over a third, Los Angeles, over the fourth, Chicago. "Those are live shots," Giovannini added.

Lindsay was appalled. Each of them showed rioting crowds and defensive police action; the commentaries cried their confusion.

However, the Martian got the drift quickly enough. Apparently his recent activities had driven the neurotic Earthlings to violence.

There appeared to be two chief factions. One of them, smashing and swarming and screaming its outrage, was demanding the abolishment of computer government. The other, equally violent and even more numerous, was after a villain named Zalen Lindsay.

Seeing that Lindsay was beginning to understand what was happening, the president pressed a button that turned off all the vidar screens and voices. He said, "I could switch to any of our other cities—to cities in South America, India, Western Europe, England. They're especially bitter toward you in England."

"I'm beginning to accept the fact—if not to understand," said Lindsay.

The president said, "Lindsay, from the point of view of your planet you have done nothing improper. But from the point of view of this planet . . ." He let silence and a shrug of thick shoulders finish the sentence.

"I had no idea," Lindsay began, "that conditions on Earth . . ." He let his own voice trail off.

Giovannini finished it for him. "You had no idea people on Earth were so damned neurotic," he said, and sighed. Then, "Lindsay—call me Johnny, will you? All my friends do—Lindsay, for generations now people by and large have been forfeiting confidence in themselves to confidence in computers.

"They have had good reason. Computer judgment has been responsible for the first true age of world peace in history. It may not be healthy but it's a damn sight healthier than war. And it has transformed this republic from an unwieldy group of states into a controlled anarchy that can be run by pushbuttons under ordinary conditions."

He paused while the Martian lit a cigarette, then went on with, "Thanks first to Sylac, then to Elsac, we learned that Vermont was happiest under its Town Meeting method, North Carolina needed its oligarchy, while my native state, California, is much better off divided in two. Texas became happy with its triple legislature—they never are happy unless they have a little more of everything down there. It was the same in other countries—Canada, South America, Spain. . ."

"And England?" Lindsay said softly.

The president sighed again. "England," he admitted, "is a bit of a problem—out of all proportion to its size and current importance. But the British are stubborn about their institutions. They've hung onto a Royal Family a hundred years longer than anyone else. We can hardly expect them to give up their beloved socialism so soon."

"Just as long as Mars is not expected to pay for this indulgence, it's quite all right with my people," Lindsay told him.

"What's *your* first name—Zalen?" the president asked. "Well, Zalen, I know it's a problem but we all have to give a little or crowd somebody out. Zalen, people are getting killed on account of you

right now."

"I've nearly been killed a couple of times myself."

"I know. Regrettable," said Giovannini. "The UW crowd never has understood security. That's why I had to kidnap you, Zalen. Couldn't have you killed, you know. Not now anyway."

"Glad you feel that way, Johnny," Lindsay told him drily. "But hasn't it occurred to you that if people here are so easily set off it might be a good idea to knock out this computer business once and for all?"

The president puffed on his cigarette. Then he said, "Zale, twenty years ago, maybe even ten, it could have been done. Now it's too late. Which is why the ninety-billion-dollar investment in Giac. We've got to give them an absolute computer, one that will remove forever the basic distrust of computer judgment that underlies the neuroses you just mentioned."

"Quite possibly," said Lindsay. "But I haven't actually done a damned thing myself to undermine computer judgment. The mistakes have been made by the so-called experts who have fed their machines inadequate information. Those mistakes were infantile. They suggest some sort of neurosis on the part of the feeders. They could be mistake-prone, you know."

President Giovannini chuckled again. "Of course they're mistake-prone, Zalen," he said. "Some of them, anyway. And it's getting worse. That's the real reason for Giac. Wait'll you see it!"

"You think I'm going to be around that long, Johnny?" Lindsay asked. "I understand I'm to be sent back to Mars—if I live that long."

"No, Lindsay, we need you—I'll explain in a moment. And we aren't going to let you die and become a martyr for generations of anti-computerites. We can't have that now, can we?"

"I'll go along with you on it," said Lindsay, wondering what the president was leading up to.

"Good!" The president beamed at him. "Zalen—I want *you* to be the first person to put Giac through a public test. That's how much I trust that machine. I want you, the man who has fouled up two computers, including Elsac, to try her out."

AND LINDSAY could only nod. The governors of Mars might not approve but after the uproar he had caused on this mission they could hardly object. President Giovannini's scheme was fully up to that renowned statesman's reputation for political astuteness. The more Lindsay thought it over the more beautiful was its simplicity.

Mere word that he was to conduct the first public test would quell the rioting. And unless Lindsay could show this mightiest of all symbolic logic computers to be fallible, computer rule would be entrenched on Earth as never before.

But what if, in some way, he succeeded in confounding the computer? Lindsay shuddered as he thought of the rioting he had so recently witnessed on the vidar-screens.

His face must have revealed his

distress for the president said, "You're worn out, Zalen. Can't have that, you know. Not with the big test coming tomorrow."

Lindsay barely remembered leaving the president and being led to a sleeping chamber somewhere in the vast mansion. When he woke up it was dark and Nina was perched on the edge of his contour couch, looking unexpectedly demure in a grey bolo with white collar and cuffs.

He said, as articulate as usual when she surprised him, "Hi."

"About time you woke up," she said. "Do you know you snore?"

"I can't help it," he told her. Then, coming fully awake, "How the devil did you get *here?*"

"I walked," she informed him succinctly. She stood up, her magnificent figure silhouetted against the light. "Better get dressed—your duds are over there." She nodded toward a walldrobe. "I'll wait in the bathroom." She breezed out.

When he looked at the clothing he was to wear he sensed that Nina had selected it for him. It was a little brighter in color, a little more daring in cut, than what he would have picked for himself.

Nina was placing jewels carefully in her hair, which she had released to form a sleek halo around her magnificent head, when he entered the bathroom. A small palisade of glittering jeweled hairpins protruded from her mouth. She had shed her demure bolo and stood revealed in glittering black bodice-bra and evening skirt-clout.

After placing the last jewel in her hair she swung about and said, "There—how do I look?"

"Gorgeous," he told her.

"You look a bit dull," she said. She dug a box out of a travel-bag placed in a corner of the room. "Here," she said. "Put this on—left side."

"This" proved to be a magnificent sunburst decoration, a glittering diamond-encrusted star. He said, "What is it?"

"Grand Order of the United Worlds—a fine diplomat you are! I picked it up for you this afternoon before flying here. Just stick it on. . ." She came over, took it from him, pressed it firmly against his bolo till the suction grips caught hold.

He put his arms around her. She let him hold her a moment, then pushed clear in the immemorial gesture of women dressed for a party who do not want to have their grooming mussed. "Not now," she said. "We'll have plenty of time."

"Not for what's worrying *me,*" he said. "Nina, I've got to put Giac through its paces in front of the whole world tomorrow. And I don't know what to ask it. I've got a blind spot where symbolic logic is concerned."

"Don't fret yourself," said the girl calmly. "I'm not worried about *you.* Not after what you've managed to do to all the other computers you've faced. Come on—we're having dinner with the president."

"Who the hell *are* you anyway?" he asked her bluntly. "You don't even look the same."

She laughed. "I should *hope* not," she told him. "After all, I could hardly grace the president's

table as a mere UW secretary—*or* as a New Orleans top model. Come on!"

He went—and got his second shock when President Giovannini greeted Nina with a manner as close to obsequiousness as that professionally free-and-easy politician could muster. He said, "My dear Miss Norstadt-Ramirez. I do hope you'll forgive me for ordering such summary action this morning. If I'd had the slightest idea. . ."

"I was boiling," Nina told him. "I was just about ready to order Aetnapolitan to pull the props out from under you when the riots started. Then I blessed your shiny little head and came up here."

"I am honored," said the president.

LINDSAY, walking through the proceedings in a fog, was even more laconic than a clipped British envoy who, along with a recovered Senator Anderson, was a member of the party.

"Don't take it so hard," Anderson whispered. "Nina is just about the best-kept secret in this hemisphere. If I weren't one of the few who's been in on it all along. . ." He shrugged eloquently.

Lindsay said nothing. He couldn't. So Nina—his fresh slatternly secretary, the courtesan of the world capital—was also Coranina Norstadt-Ramirez, the heiress who owned almost half of Earth!

He felt like a quadruply-plated idiot. He knew about Norstadt-Ramirez—who didn't, whether on Earth or Mars or the space-stations circling Venus while that planet's atmosphere was being artificially altered to make it fit for human habitation?

She was a fantastic glamorous lady of mystery, the ultimate heiress, the young woman to whom inexorably, thanks to North America's matriarchal era during the twentieth century, the control of most of its mightiest corporations and trust funds had descended.

And she was Lindsay's secretary. No wonder, he thought miserably, she had never sounded quite sincere about calling him boss. Why, she virtually owned his home planet as well. He watched her covertly across the table, poised, amused, alert, occasionally witty—and so damnably attractive. He wished he were dead.

She caught his regard, scowled and stuck her tongue out at him. He thought, *Why, you little. . .!*

Somehow she got them out of the chatter after dinner, got him back to his suite. There, regarding him sternly, she said, "Zale, you aren't going to be stuffy about this, are you?"

"I can't help it," he replied. "If you'd only told me. . ."

He read sympathy in her green eyes. But she merely shrugged and said, "Result of a lifetime of keeping myself under wraps." She sat on a contour chair, patted a place for him alongside.

She said, "I'm the richest single person there has ever been—you know that. It isn't my fault. It just happened. I didn't deserve or want or need it. But it is a hell of a responsibility. Since I'm responsible for so much it seemed important to

me to know how people felt. After all we act because we feel. And thanks to a few good friends like Fernando Anderson I've been able to get away with it."

"Why me?" he asked her. "Why pick on me?"

Her expression softened. One of her hands crept into his. "One of the nicest things about you, Zale, is the fact that you don't realise just how special you are."

"I'm not so special on Mars," he told her.

"No?" Her eyebrows rose delightfully. "A quarter of a billion Martians select you as their first Plenipotentiary to the UW and you're not special? Zale, you're an absolute woolly lamb.

"There's more to it than that. I've never been to Mars. I should have, but I simply haven't had the time. So I decided the best way to find out about Mars at second hand was to work with you in some capacity that would let you be yourself."

"A filthy, underhanded, thoroughly feminine trick," he said gently and kissed her. Then, frowning into her green eyes, "But why are you so dead set against computer judgment?"

"Isn't it obvious?" she asked. "I've got a tremendous stake in this world. Kicking around it as I have I've been able to see what is happening. I'm damned if I'm going to have my property managed and run by a bunch of people who make mistakes because they're too neurotic to make decisions. Look at them!" Her voice became edged with disgust.

Lindsay said, "I see. Listen, honey, I'd like to sleep with you tonight."

She looked surprised but not displeased by his bluntness. "Of course, darling," she told him.

"How much will it cost me?" he asked her.

She froze—then her eyes began to fill and she sniffled. He said, "You know I didn't mean that. Dammit, I just wanted to show you you're a neurotic yourself."

She slapped him hard enough to tilt him off the contour chair. She rose haughtily, still sniffing. Lindsay stretched out a hand and caught one of her ankles and tripped her up. She tottered, gave vent to a startled, *"Awk!"*, fell backward into the pool-tub.

He dived in after her, caught her when she came up, spluttering, gripped her shoulders hard. Her eyes blazed green fire at him. She said, "How *dare* you do that to me, you moron!"

He said, "If I hadn't I'd probably never have seen you again."

She collapsed into his arms.

Later—much later—as Nina was about to leave him for her own suite, he asked, "Honeycomb, what did you lose that caused Fernando to give you that necklace?"

"I nearly lost you," she replied from the doorway. "I bet him Maria wouldn't get you that night. And lost. So Fernando sent the necklace as compensation."

"Quite a large compensation," said Lindsay drily.

Nina shrugged. "Not for Fernando," she told him. "After all, I pay him enough. He's my number one political boy. 'Night, darling."

LINDSAY was on the verge of a breakdown himself by noon the next day, after Computation Minister du Fresne, looking uglier than ever, had finished conducting President Giovannini's official party through the rooms and passages of Giac. If Nina hadn't been by his side during and after the swift rocket trip to Death Valley, he might have collapsed.

It was she who had removed the glittering star from his breast before breakfast in the Sherwood Forest mansion that morning. "You needed something to wear for show last night," she had told him.

"Then it's not mine?" he had countered absently.

"Of course it is," she had assured him. "But Secretary General Bergozza is going to make the official investiture after the test."

Lindsay had meekly surrendered the bauble, barely noticing. His brain was straining to recall what he could of symbolic logic—a subject that had never particularly interested him. For some reason it kept working back to Lewis Carroll, who, under his real name of Charles Lutwidge Dodgson, had been the founder of symbolic logic back in the nineteenth century, along with the renowned Dr. Poole.

About all he could remember was the following problem:

(1) Every one who is sane can do Logic;
(2) No lunatics are fit to serve on a jury;
(3) None of *your* sons can do Logic.

The Universal was "persons". The symbols were: a—able to do Logic; b—fit to serve on a jury; c—sane; d—your sons.

And the answer, of course, was: None of *your* sons is fit to serve on a jury.

For some reason this, in turn, made him think of the ancient conundrum that employed confusion to trip its victims: What's the difference between an iron dog in the side yard of a man who wants to give his little daughter music lessons but is afraid he can't afford them next year, and a man who has a whale in a tank and wants to send him for a wedding present and is trying to pin a tag on him, saying how long he is, how much he weighs and where he comes from, but can't because the whale keeps sloshing around in the tank and knocking the tag off?

This time, the answer was: One can't wag his tail, the other can't tag his whale.

"None of *your* sons is fit to tag a whale—or wag a tail," he said absently.

"What was that?" Nina asked.

"Nothing, nothing at all," he replied. "Merely a man going out of his mind."

"It will never miss you," she replied brightly. But her brightness became a bit strained as the day wore on. The trip, for Lindsay, was sheer nightmare. *No sane man can wag his tail,* he kept thinking.

Even such fugitive grasping at Logical straws vanished when he saw the immense squat mass of Giac, rising like a steel-and-concrete toad from the wastes of the California desert. It seemed absurd even to think that such an imposing and complex structure should have been reared on the mathe-

matics of the immortal author of *Alice in Wonderland, Through the Looking Glass* and *The Hunting of the Snark.*

For Giac *was* imposing, even to a man biased against computers from birth. Nor did du Fresne's smugness help Lindsay's assurance a bit. He explained how each of the block-large preliminary feeders worked—one for mathematical symbols, one for oral recording, a third for written exposition. Each worked simultaneously and in three different ways—via drum-memory banks, via punched tapes, via the new "ear-tubes" that responded to sound.

Then there were the preliminary synthesizers, each of which unified in vapor-plutonium tubes the findings of its three separate feeders. Next, a towering black-metal giant filling three walls of a cubical room twenty metres in each dimension, came the final synthesizer, which coordinated the findings of the preliminary synthesizers and fed them into Giac itself.

The master machine was the least imposing of all. It stood like an alabaster stele in the center of an immense chamber arranged like a theater-in-the-round. But du Fresne, peering through his strawberry spectacles, said gloatingly, "Don't be deceived by the size, ladies and gentlemen. All but what you see of Giac is underground. It is contained in an all-metal cell one million cubic metres in volume. And it is infallible."

Fortunately Lindsay was given a half hour of final preparation in one of the small offices with which the above-ground building was honeycombed. Nina came with him—by request.

"I can't do it," he told her abruptly.

"Don't worry, darling, you'll think of something," she said. She tried to embrace him but he was too worried to respond. After awhile she said, "Why not put a direct question. Ask it if it's infallible."

"It could hardly tell a lie on itself," he replied.

"What if such a question involved destruction of part of itself in the answer?" she asked.

"It might—though I presume du Fresne and his boys have prepared it for such jokers. And anyway, what sort of question would do that? Got any ideas?"

"That's your department," she said helpfully. "You're the computer smasher of this team."

"But that was pure luck," he said half-angrily. "One can't wag his tail. . . The other can't serve on a jury."

She looked alarmed. "Darling," she said, "you aren't—"

"Not yet, Honeycomb," he said, "but give me time.

"It's got to be something about this Mars-Earth problem," he went on after a long silence. "Listen: how can Mars develop if it's in the spot of the Red Queen—has to run like hell just to stay where it is thanks to Earth's dumping policies?"

THE DOOR opened and closed and Maria Bergozza was with them. She said, "Apparently this is necessary." She was holding a glass-

pellet gun in her hand, pointing it at Lindsay.

He said, "Why, you—!" and moved toward her. Promptly the Secretary General's daughter pointed the gun at Nina's tanned midriff. He stopped.

Maria said evenly, "It's *you* that have done this to me, Nina. You've had all the fun while I've had to pour tea for papa at his damned functions. You've fouled up our plans with your meddling down in New Orleans. And now you've taken Zale, as you take everything else you take a fancy to."

"But you tried to kill him," said Nina. "Why should you care?"

"He would have been a martyr —and *you* wouldn't have had him," said Maria, her gun hand steady. "I know it's going to ruin me to kill you—but my whole life is ruined anyway. And this way at least I can sacrifice it for the cause."

"The cause of interplanetary war?" said Lindsay, in his turn incredulous. Hot rage rose within him, "You third-rate tramp!" He stepped squarely into the line of fire, thrust his left breast in front of the muzzle of her gun. Behind him Nina screamed.

But Maria didn't fire. Instead she sneezed—sneezed and sneezed again. Her gun hand gyrated wildly as she doubled in a paroxysm and Nina moved past Lindsay to pluck the weapon from her.

"Don't call me—krrrra*shew!*—third-rate," she managed to gasp before the blonde sent her sprawling with a very efficient right cross to the chin.

Nina turned on Lindsay angrily. "You damned fool!" she almost shouted. "You might have been killed."

He looked down, felt his knees turn to water. He said, "Omigod—I thought I was still wearing the star. I remembered how you saved my life in New Orleans with your diamond evening bag!"

He sat down—hard. From the floor Maria whimpered, "What are you going to do to me?"

Nina said, "I ought to kill you, you know, but it would cause too much of a stink. So beat it and let us think. You'll be hearing from me later. What you hear will depend on how you handle yourself from now on. Understand?"

When she had slunk out Lindsay said, "What broke her up?"

Nina dropped the gun into her bag casually, said, "Now I know you're lucky, you thin slob. You happened to stumble right onto her allergy. She can't stand being thought of as a third-rate lover. That's why she's always been jealous of me—because I have top-model rating and she could never make it. She's too damned concerned with pleasing herself to please anyone else. She flunked out at fourteen."

"Then why didn't *you* pull it?" Lindsay asked her, astonished.

"Because," Nina said thoughtfully, "I'm not conditioned to think that way. It's horribly rude here on Earth to stir up other people's allergies. As you reminded me last night, you rat, we're all people in glass houses."

"But I didn't even know. . ." muttered Lindsay.

"You hit it though," she reminded him. "And you're going to hit it again out there in exactly five minutes."

LINDSAY was extremely conscious of the eyes of the vidar cameras upon him as President Giovannini, having finished his introductory speech, led him to the alabaster stele in the center of Giac's great central chamber and turned him over to du Fresne, whose official robe hung unevenly from the hump of his harness.

Lindsay handed the Minister of Computation the question he had prepared on paper, was brusquely told, "Read it please, Ambassador."

He cleared his throat and began.

"I am asking a question highly pertinent to the welfare and future amity of the United Worlds," he said slowly. More specifically to the future amity of Earth and Mars. It is a simple question without involved mathematical qualifications —but one that no computer and no man has thus far been able to answer correctly.

"It is this continued failure of computers to come up with a logical answer in the full frame of interplanetary conditions that has done much to make the people of my planet feel that no computer is trustworthy to make decisions involving human beings."

He paused, looked covertly at du Fresne, repressed a smile. The Minister of Computation was already showing signs of distress. He was shaking his head, making little pawing motions toward his glasses.

"Here it is," Lindsay said quickly. "Should the governors of Mars, whose responsibilities lie at least as much in the economic improvement of their own world as in interworld harmony, permit their planet to receive goods which retard that economic development so that it becomes a race to maintain current unsatisfactory standards, merely because certain computers on Earth are fed false facts to permit continuation of some illogical form of government or social system—or should the governors of Mars permit their planet to suffer because of computer illogic in the name of a highly doubtful status quo on the parent planet?"

He walked slowly back to his place and sat down, almost feeling the silence around him. Nina whispered, "What in hell does it mean?"

Lindsay whispered back, "It's a bit of the iron dog and the whale, a bit of the Red Queen, a bit of the suicide idea—and something else. Let's see if it works."

Lindsay watched du Fresne, whose moment of triumph was marred by his obvious discomfort. The twisted little man was very busy running the question into its various forms for submission to the feeder units, whose mouths gaped like hungry nestlings along part of one side wall.

If du Fresne failed him. . .

It was a long nervous wait. Lights flickered in meaningless succession on subsidiary instrument boards and du Fresne darted about like a bespectacled buzzard, studying first this set of symbols, then that one.

Lindsay glanced at Maria, who

sat huddled beside her father beyond the president. To break the suspense he whispered to Nina, "What about *her?*"

Nina whispered back, "I've got it taped. I'm going to give her a nice empty job on the moon—one with a big title attached. It will get her out of the way—she can't do any harm there—and make her feel she's *doing* something. Besides"—a faint malicious pause—"there are still four men to every woman on Luna. And they aren't choosy."

"You're a witch," said Lindsay. He snickered and someone shushed him. Looking up he saw that things were happening.

"In exactly"—du Fresne glanced up at a wall chronometer—"six seconds Giac will give its answer."

They seemed more like six years to Lindsay. Then the alabaster stele in the center of the floor came abruptly to life. A slow spiral of red, composed of a seemingly endless stream of high mathematical symbols, started up from its base, worked rapidly around and around it like an old-fashioned barber-pole's markings, moving ever upward toward its top.

"Effective—very effective," murmured President Giovannini.

Suddenly a voice sounded, a pleasant voice specially geared to resemble the voice of the greatest of twentieth-century troubadors, Bing Crosby. It said, "Interplanetary unity depends upon computer illogic."

There was a gasp—a gasp that seemed to emerge not only from the company present but, in reverse, through the vidarcasters from the entire listening world. President Giovannini, suddenly white, said inelegantly, "Son of a bitch!"

Nina laughed out loud and gripped Lindsay's arm tightly. "You've done it, darling—you've *done* it!" she cried.

"On the contrary," he said quietly, "*I* haven't done it; du Fresne did it." And as he looked toward the Minister of Computation that little man fainted.

BUT GIAC kept right on. It blanked out briefly, then once more the spiral of red figures began to work its way around and up the stele. And once again the pleasant voice announced, "Interplanetary unity depends upon computer illogic."

It blanked out, began again. And this time, from somewhere in the building, came the thud of a muffled explosion. A spiral of green symbols began to circle the stele, then a spiral of yellow. The red reached the top first and the Bing Crosby voice began again, "Interplanetary unity de—"

The green and yellow spirals reached the top. A few seconds of sheer Jabberwocky emerged from the loudspeaker, ending in a chorus of, "Illogic, illogic, illogic. . ." with the words overlapping.

Panic began to show itself. The president gasped and Maria suddenly shrieked. Frightened onlookers crowded toward the door. The president looked from the machine to Lindsay, bewildered.

Lindsay got up and strode toward the microphone by the stele. He shouted into it, "Turn off the

computer—turn it *off.*"

And, moments later, while the angry hot glow of the stele faded slowly, he said, "People of Earth, this is Lindsay of Mars. Please be calm while I explain. There is nothing wrong with Giac or any of your computers." He paused, added ruefully, "At least nothing that cannot be repaired in short order where Giac is concerned.

"I am going to ask to look once more at the question I submitted to this machine—*and* to the language tape fed into it by the Honorable Mr. du Fresne." He waited while they were brought to him, scanned them, smiled, said, "No the fault was not with Giac. Nor was it consciously with Mr. du Fresne. The question was loaded.

"You see, I happen to know that your Minister's belief in computers is such that he suffers an involuntary reaction when he hears them defamed. I defamed computers both in my preliminary address and in my question. And when he had to transfer to tape the phrase '—or, should the Governors of Mars permit their planet to suffer because of computer illogic in the name of a highly doubtful status quo on the parent planet?'—when he transferred that sentence to tape he was physically unable to write the phrase 'computer illogic'.

"Involuntarily he changed it to 'computer logic' with the result that the question was utterly meaningless and caused Giac's tubes to short circuit. None of the recent computer failures was the fault of the machines—it was the fault of the men who fed them material to digest.

"So I believe it is safe to say that you may rely upon your computers —as long as they do not deal with problems affecting yourselves and ourselves. For those you need human speculation, human debate, above all human judgment!"

President Giovannini, able politician that he was, had joined Lindsay at the microphone, put an arm across his shoulders, said, "I feel humble—yes, humble—in the great lesson this great envoy from our sister planet had taught us. What they can do on Mars we can do on Earth."

When at last they were clear of the vidar cameras Lindsay grinned and said, "Nice going, Johnny—you'll have more voters than ever come next election."

Giovannini simply stared at him. His eyes began to water, his nose to run and he turned away, groping for an evapochief.

Lindsay looked after him and shook his head. He said to Nina, who had rejoined him, "How about that? Johnny's in tears."

"Of course he is," snapped Nina. "He's allergic to the word 'voters'. Night soil, but you're simple!"

Lindsay felt his own eyes water. He sneezed, violently, for the first time since coming to Earth. Concerned, Nina said, "What's wrong, darling? Have I done something?"

"If you ever say 'night soil' again . . ." he began. Then, "Krra-*chooooo!*" He felt as if the top of his head were missing.

Nina hugged him, grinning like a gamine. "I'll save it for *very* special occasions," she promised.

• • • THE END

Dark was the Ryzga mountain and forbidding; steep were its cliffs and sheer its crevasses. But its outward perils could not compare with the Ryzgas themselves, who slept within, ready to wake and conquer . . .

WHEN THE MOUNTAIN SHOOK

By Robert Abernathy

Illustrated by Kelly Freas

AT SUNSET they were in sight of the Ryzga mountain. Strangely it towered among the cliffs and snow-slopes of the surrounding ranges: an immense and repellently geometric cone, black, its sides blood-tinted by the dying sun.

Neena shivered, even though the surrounding cold could not reach her. The ice-wind blew from the glacier, but Var's love was round her as a warming cloak, a cloak that glowed softly golden in the deepening twilight, even as her love was about him.

Var said, "The Watcher's cave should be three miles beyond this pass." He stood rigid, trying to catch an echo of the Watcher's thoughts, but there was nothing. Perhaps the old man was resting. From the other direction, the long way that they two had come, it was not difficult to sense the thought of Groz. That thought was powerful, and heavy with vengeance.

"Hurry," said Neena. "They're closer than they were an hour ago."

She was beautiful and defiant, facing the red sunset and the black mountain. Var sensed her fear, and the love that had conquered it. He felt a wave of tenderness and

bitterness. For him she had come to this. For the flame that had sprung between them at the Truce of New Grass, she had challenged the feud of their peoples and had left her home, to follow him. Now, if her father and his kinsmen overtook them, it would be death for Var, and for Neena living shame. Which of the two was worse was no longer a simple problem to Var, who had grown much older in the last days.

"Wait," he commanded. While she waited he spun a dream, attaching it to the crags that loomed over the pass, and to the frozen ground underfoot. It was black night, as it would really be when Groz and his henchmen reached this place; lurid fire spewed from the Ryzga mountain, and strange lights dipped above it; and for good measure there was an avalanche in the dream, and hideous beasts rushed snapping and ravening from the crevices of the rock.

"Oh!" cried Neena in involuntary alarm.

Var sighed, shaking his head. "It won't hold them for long, but it's the best I can do now. Come on."

There was no path. Now they were descending the steeper face of the sierra, and the way led over bottomless crevasses, sheer drops and sheer ascents, sheets of traitorous glare ice. Place after place had to be crossed on the air, and both grew weary with the effort such crossings cost. They hoarded their strength, helping one another; one alone might never have won through.

It was starry night already when they saw the light from the Watcher's cave. The light shone watery and dim from beneath the hoary back of the glacier, and as they came nearer they saw why: the cave entrance was sealed by a sheet of ice, a frozen waterfall that fell motionless from the rocks above. They heard no sound.

The two young people stared for a long minute, intrigued and fearful. Both had heard of this place, and the ancient who lived there to keep watch on the Ryzga mountain, as a part of the oldest legends of their childhood; but neither had been here before.

But this was no time for shyness. Var eyed the ice-curtain closely to make sure that it was real, not dream-stuff; then he struck it boldly with his fist. It shattered and fell in a rain of splinters, sparkling in the light that poured from within.

THEY FELT the Watcher rouse, heard his footsteps, and finally saw him—a shrunken old man, white-haired, with a lined beardless face. The sight of him, more marred by age than anyone they had ever seen before, was disappointing. They had expected something more—an ancient giant, a tower of wisdom and strength. The Watcher was four hundred years old; beside him even Groz, who had always seemed so ancient, was like a boy.

The Watcher peered at them in turn. "Welcome," he said in a cracked voice. He did not speak again; the rest of his conversation was in thought only. "Welcome indeed. I am too much alone here."

"You were asleep!" said Var. Shock made his thought accusing, though he had not meant to be.

The old man grinned toothlessly. "Never fear. Asleep or awake, I watch. Come in! You're letting in the wind."

Inside the cave it was warm as summer. Var saw with some surprise that all the walls were sheathed in ice—warm to the touch, bound fast against melting by the Watcher's will. Light blazed in reflections from the ice walls, till there was no shadow in the place. Behind them began a tinkling of falling water, thawed from the glacial ridges above to descend sheetwise over the cave mouth, freezing as it fell into lengthening icicles. The old man gazed at his work for a moment, then turned questioningly to the young pair.

"We need a little rest out of the cold," said Var. "And food, if you can spare it. We're pursued."

"Yes, yes. You shall have what I can give you. Make yourselves comfortable, and in one minute . . . Pursued, eh? A pity. I see the world is as bad as it was when I was last in it."

Hot food and drink were before them almost at once. The Watcher regarded them with compassion as their eyes brightened and some of the shadow of weariness lifted from them. "You have stolen your enemy's daughter, no doubt, young man? Such things happened when I was young."

Warming to the old man now, Var sketched his and Neena's history briefly. "We should have been safe among my people by now. And before very long, I'm sure, I would have performed some deed which Groz would recognize as a worthy exploit, and would thus have healed the feud between our families. But our flight was found out too soon. They cut us off and forced us into the mountains, and now they are only a few hours behind us."

"A pity, indeed. I would like to help you—but, you understand, I am the Mountain Watcher. I must be above feuds and families."

Var nodded somberly, thinking that an old recluse would in any case be able to do little for them against Groz and his violent kinsfolk.

"And what will you do now?"

Var grinned mirthlessly. "We haven't much choice, since they're overtaking us. I have only one idea left: we can go where Groz may fear to follow us."

"To the mountain, you mean."

"And into it, if need be."

The Watcher was broodingly silent; his eyes shifted to Neena, where she nestled by Var's side. He asked, "And you—are you willing to follow your lover in this?"

Neena returned his gaze without flinching; then she looked sidelong at Var, and her lips curled with a proud and tender mockery. "Follow? Why , I will lead, if his courage should fail him."

THE OLD MAN said, "It is no part of my duty to dissuade you from this thing. You are free persons. But I must be sure that you know what you are doing. That is the second part of the law the First Watcher made: to guard lest the unwary and the ignorant should bring harm on themselves and on all men."

"We know the stories," Var said

brusquely. "In the hollow heart of their mountain the Ryzgas sleep, as they chose to do when their world crumbled. But if they are wakened, the mountain will tremble, and the Ryzgas will come forth."

"Do you believe that?"

"As one believes stories."

"It is true," said the Watcher heavily. "In my youth I penetrated farther into the mountain than anyone before, farther even than did the First Watcher. I did not see the sleepers, nor will any man until they come again, but I met their sentries, the sentinel machines that guard them now as they have for two thousand years. When I had gone that far, the mountain began to shake, the force that is in the Earth rumbled below, and I returned in time." Now for the first time Var sensed the power in the old man's look, the power of four hundred years' wisdom. Var stared down at his hands.

"The Ryzgas also were men," said the Watcher. "But they were such a race as the world has not seen before or since. There were tyrannies before the Ryzgas, there was lust for power, and atrocious cruelty; but such tyranny, power, and cruelty as theirs, had never been known. They ruled the Earth for four generations, and the Earth was too little for them. They laid the world waste, stripped it of metals and feuls and bored to its heart for energy, poisoned its seas and its air with the fume of their works, wrung its peoples dry for their labor . . . and in each of those four generations they launched a ship of space. They were great and evil as no other people has been, because they wanted the stars.

"Because of them we must build with dreams instead of iron, and our only fire is that of the Sun, and even now, two thousand years later, the Earth is still slowly recovering from the pangs and poison of that age. If you turn up the sod in the plain where the wild herds graze, you will find numberless fragments of rusted or corroded metal, bits of glass and strange plastic substances, debris of artifacts still showing the marks of their shaping—the scattered wreckage of the things they made. And we—we too are a remnant, the descendants of the few out of all humanity that survived when the Ryzgas' world went down in flame and thunder.

"In the last generation of their power the Ryzgas knew by their science that the race of man would endure them no longer. They made ready their weapons, they mined the cities and the factories for destruction, making sure that their works and their knowledge would perish with them. Meanwhile they redoubled the yoke and the punishments, hastening the completion of the last of the starships.

"From the memories that the old Watchers have left here, and from the memories of dead men that still echo in the air, I have gathered a picture of that world's end. I will show it to you . . ."

VAR AND NEENA stared, unstirring, with wide vacant eyes, while the old man wove a dream around them, and the bright ice-cave faded from their vision, and they saw—

Black starless night, a sky of rolling smoke above the greatest city that was ever built. Only the angry light of fires relieved the city's darkness—that, and the blue-white lightning flashes that silhouetted the naked skeletons of buildings and were followed by thunder and a shaking of the earth.

Along lightless streets, half choked with rubble and with the dead, poured a mad, hating horde. The recurrent flashes lit scarred faces, naked bodies blackened and maimed fom the hell of the workshops where the Ryzgas' might had been forged, eyes that stared white and half sightless from the glare of the furnaces, gnarled hands that now at long last clutched the weapons of the last rebellion—a rebellion without hope of new life on a world gutted and smoldering from the fulfilment of the Ryzgas' dream, without slogans other than a cry for blood.

Before them death waited around the citadel where the masters still fought. All round, from the lowest and most poisonous levels of the shattered city, the slaves swarmed up in their millions. And the lightning blazed, and the city howled and screamed and burned.

Then, unbelievably, the thunder fell silent, and the silence swept outward like a wave, from ruined street to street. The mouths that had shouted their wrath were speechless, and the rage-blinded eyes were lifted in sudden awe. From the center, over the citadel, an immense white globe soared upward, rising swiftly without sound.

They had never seen its like, but they knew. It was the last starship, and it was leaving.

It poised motionless. For an instant the burning city lay mute; then the millions found voice. Some roared ferocious threats and curses; others cried desolately—*wait!*

Then the whole city, the dark tumuli of its buildings and its leaping fires and tormented faces, and the black sky over it, seemed to twist and swim, like a scene under water when a great fish sweeps past, and the ship was gone.

The stunned paralysis fell apart in fury. Flame towered over the citadel. The hordes ran and shrieked again toward the central inferno, and the city burned and burned . . .

VAR BLINKED dazedly in the shadowless glow of the ice-cave. His arm tightened about Neena till she gasped. He was momentarily uncertain that he and she were real and here, such had been the force of the dream, a vision of such scope and reality as Var had never seen—no, lived through—before. With deep respect now he gazed upon the bent old man who was the Mountain Watcher.

"Some of the Ryzgas took flight to the stars, and some perished on Earth. But there was a group of them who believed that their time to rule would come again. These raised a black mountain from the Earth's heart, and in hollows within it cast themselves into deathless sleep, their deathless and lifeless sentinels round them, to wait till someone dare arouse them, or until their chosen time—no one knows surely.

"I have told you the story you know, and have shown you a glimpse of the old time, because I must make sure that you do not approach the mountain in ignorance. Our world is unwise and sometimes evil, full of arrogance, folly, and passion that are in the nature of man. Yet it is a happy world, compared to that the Ryzgas made and will make again."

The Watcher eyed them speculatively. "Before all," he said finally, "this is a world where you are free to risk wakening the old tyrants, if in your own judgment your great need renders the chance worth taking."

Neena pressed her face against Var's shoulder, hiding her eyes. In her mind as it groped for his there was a confusion of horror and pity. Var looked grimly at the Watcher, and would have spoken; but the Watcher seemed suddenly a very long way off, and Var could no longer feel his own limbs, his face was a numb mask. Dully he heard the old man say, "You are tired. Best sleep until morning."

Var strove to cry out that there was no time, that Groz was near and that sleep was for infants and the aged, but his intention sank and drowned under wave upon wave of unconquerable languor. The bright cave swam and dissolved; his eyelids closed.

VAR WOKE. Daylight glimmered through the ice of the cave mouth. He had been unconscious, helpless, for hours! At the thought of that, panic gripped him. He had not slept since childhood, and he had forgotten how it was.

He came to his feet in one quick movement, realizing in that action that sleep had refreshed his mind and body—realizing also that a footstep had wakened him. Across the cave he faced a young man who watched him coolly with dark piercing eyes that were familiar though he did not know the face.

Neena sat up and stifled a cry of fright. Var growled, "Who are you? Where's the Watcher?"

The other flashed white teeth in a smile. "I'm the Watcher," he answered. "Often I become a youth at morning, and relax into age as the day passes. A foolish amusement, no doubt, but amusements are few here."

"You made us fall asleep. Groz will be on us—"

"Groz and his people could not detect your thoughts as you slept. They were all night chasing elusive dreams on the high ridges, miles away."

Var passed a hand across bewildered eyes. Neena said softly, "Thank you, Watcher."

"Don't thank me. I take no sides in your valley feuds. But now you are rested, your minds are clear. Do you still mean to go on to the Ryzga mountain?"

Not looking at the Watcher, Var muttered unsteadily, "We have no alternative."

There was a liquid tinkling as the ice-curtain collapsed; the fresh breeze of morning swept into the cave. The youth beckoned to them, and they followed him outside.

The glacial slope on which the cavern opened faced toward the mountain. It rose black and forbid-

ding in the dawn as it had by sunset. To right and left of it, the grand cliffs, ocher and red, were lit splendidly by the morning sun, but the mountain of the Ryzgas drank in the light and gave nothing back.

Below their feet the slope fell away into an opaque sea of fog, filling a mile-wide gorge. There was a sound of turbulent water, of a river dashed from rock to rock in its struggle toward the plain, but the curling fog hid everything.

"You have an alternative," said the Watcher crisply. The two took their eyes from the black mountain and gazed at him in sudden hope, but his face was unsmiling. "It is this. You, Var, can flee up the canyon to the north, by a way I will show you, disguising your thoughts and masking your presence as well as you are able, while the girl goes in the other direction, southward, without seeking to conceal herself. Your pursuers will be deceived and follow her, and by the time they catch her it will be too late for them to overtake Var."

That possibility had not occurred to them at all. Var and Neena looked at one another. Then by common consent they blended their minds into one.

They thought, in the warm intimacy of unreserved understanding: *"It would work: I-you would make the sacrifice of shame and mockery—yet these can be borne—that I-you might be saved from death—which is alone irreparable . . . But to become* I *and* you *again —that cannot be borne."*

They said in unison, "No. Not that."

The Watcher's face did not change. He said gravely, "Very well. I will give you what knowledge I have that may help you when you enter the Ryzga mountain."

Quickly, he impressed on them what he had learned of the structure of the mountain and of its guardian machines. Var closed his eyes, a little dizzied by the rapid flood of detail.

"You are ready to go," said the Watcher. He spoke aloud, and his voice was cracked and harsh. Var opened his eyes in surprise, and saw that the Watcher had become again the hoary ancient of last night.

Var felt a twinge of unfamiliar emotion; only by its echo in Neena's mind did he recognize it as a sense of guilt. He said stiffly, "You don't blame us?"

"You have taken life in your own hands," rasped the Watcher. "Who does that needs no blessing and feels no curse. Go!"

THEY GROPED through the fog above blank abysses that hid the snarling river, crept hand in hand, sharing their strength, across unstable dream bridges from crag to crag. Groz and his pack, in their numbers, would cross the gorge more surely and swiftly. When Var and Neena set foot at last on the cindery slope of the great volcanic cone, they sensed that the pursuit already halved their lead.

They stood high on the side of the Ryzga mountain, and gazed at the doorway. It was an opaque yet penetrable well of darkness, opening into the face of a lava cliff,

closed only by an intangible curtain —so little had the Ryzgas feared those who might assail them in their sleep.

Var sent his thoughts probing beyond the curtain, listened intently, head thrown back, to their echoes that returned. The tunnel beyond slanted steeply downward. Var's hands moved, molding a radiant globe from the feeble sunshine that straggled through the fog-bank. With an abrupt motion he hurled it. The sun-globe vanished, as if the darkness had drunk it up, but though sight did not serve they both sensed that it had passed through to light up the depths beyond. For within the mountain something snapped suddenly alert—something alive yet not living, seeing yet blind. They felt light-sensitive cells tingle in response, felt electric currents sting along buried, long-idle circuits . . .

The two stood shivering together.

The morning wind stirred, freshening, the fog lifted a little, and they heard a great voice crying, "There they are!"

Var and Neena turned. Far out in the sea of fog, on a dream bridge that they could not see, stood Groz. He shook the staff he carried. It was too far to discern the rage that must contort his features, but the thought he hurled at them was a soundless bellow: "Young fools! I've caught you now!"

Behind Groz the figures of his followers loomed up as striding shadows. Neena's hand tightened on Var's. Var sent a thought of defiance: "Go back! Or you'll drive us to enter the mountain!"

Groz seemed to hesitate. Then he swung his staff up like a weapon, and for the two on the mountainside the world turned upside down, the mountain's black shoulder hung inverted above them and the dizzy gulf of sky was beneath. Var fought for footing with his balance gone, feeling Neena reel against him until, summoning all his strength, he broke the grip of the illusion and the world seemed to right itself. The mist billowed again and Groz was out of sight, but they could hear him exhorting his men to haste.

Neena's face was deadly pale and her lips trembled, but her urgent whisper said, "Come on!"

Together they plunged into the curtain of darkness.

AT VAR'S thought command Neena froze instantly. "Feel that!" he muttered, and she, listening, sensed it too: the infinitesimal trickle of currents behind what appeared to be a blank tunnel wall, a rising potential that seemed to whisper *Ready . . . ready . . .*

The sun-globe floated behind them, casting light before them down the featureless tunnel that sloped always toward the mountain's heart. Var summoned it, and it drifted ahead, a dozen feet, a little more—

Between wall and wall a blinding spindle of flame sprang into being, pulsed briefly with radiant energy that pained the eyes, and went out. The immaterial globe of light danced on before them.

"Forward, before the charge builds up again!" said Var. A few feet further on, they stumbled over

a pile of charred bones. Someone else had made it only this far. It was farther than the Watcher had gone into these uncharted regions, and only the utmost alertness of mind and sense had saved them from death in traps like this. But as yet the way was not blocked . . .

Then they felt the mountain begin to tremble. A very faint and remote vibration at first, then an increasingly potent shuddering of the floor under their feet and the walls around them. Somewhere far below immense energies were stirring for the first time in centuries. The power that was in the Earth was rising; great wheels commenced to turn, the mechanical servitors of the Ryzgas woke one by one and began to make ready, while their masters yet slept, for the moment of rebirth that might be near at hand.

From behind, up the tunnel, came a clear involuntary thought of dismay, then a directed thought, echoing and ghostly in the confinement of the dark burrow:

"*Stop!*—before you go too far!"

Var faced that way and thought coldly: "Only if you return and let us go free."

In the black reaches of the shaft his will groped for and locked with that of Groz, like the grip of two strong wrestlers. In that grip each knew with finality that the other's stubbornness matched his own—that neither would yield, though the mountain above them and the world outside should crumble to ruin around them.

"Follow us, then!"

They plunged deeper into the mountain. And the shaking of the mountain increased with every step, its vibrations became sound, and its sound was like that of the terrible city which they had seen in the dream. Through the slow-rolling thunder of the hidden machines seemed to echo the death-cries of a billion slaves, the despair of all flesh and blood before their monstrous and inhuman power.

Without warning, lights went on. Blinking in their glare, Var and Neena saw that fifty paces before them the way opened out into a great rounded room that was likewise ablaze with light. Cautiously they crept forward to the threshold of that chamber at the mountain's heart.

Its roof was vaulted; its circular walls were lined with panels studded with gleaming control buttons, levers, colored lights. As they watched light flicked on and off in changing patterns, registering the progressive changes in the vast complex of mechanisms for which this must be the central control station. Behind those boards circuits opened and closed in bewildering confusion; the two invaders felt the rapid shifting of magnetic fields, the fury of electrons boiling in vacuum . . .

For long moments they forgot the pursuit, forgot everything in wonder at this place whose remotest like they had never seen in the simplicity of their machineless culture. In all the brilliant space there was no life. They looked at one another, the same thought coming to both at once: perhaps, after two thousand years, the masters were dead after all, and only the machines remained? As if irresistibly drawn, they stepped over the threshold.

There was a clang of metal like a signal. Halfway up the wall opposite, above a narrow ramp that descended between the instrument panels, a massive doorway swung wide, and in its opening a figure stood.

Var and Neena huddled frozenly, half expecting each instant to be their last. And the Ryzga too stood motionless, looking down at them.

HE WAS a man of middle height and stocky build, clad in a garment of changing colors, of fabric delicate as dream-stuff. In his right hand, with the care one uses with a weapon, he grasped a gleaming metal tube; his other hand rested as for support against the frame of the doorway. That, and his movements when he came slowly down the ramp toward them, conveyed a queer suggestion of weariness or weakness, as if he were yet not wholly roused from his two millenia of slumber. But the Ryzga's manner and his mind radiated a consciousness of power, a pride and assurance of self that smote them like a numbing blow.

With a new shock, Var realized that the Ryzga's thoughts were quite open. They had a terse, disconnected quality that was strange and unsettling, and in part they were couched in alien and unintelligible symbols. But there was no block. Apparently the Ryzga felt no need to close his mind in the presence of inferior creatures . . .

He paused with his back to the central control panel, and studied the interlopers with the dispassionate gaze of a scientist examining a new, but not novel, species of insect. His thoughts seemed to click, like metal parts of a mechanism falling into places prepared for them. The image occurred oddly to Var, to whom such a comparison would ordinarily have been totally strange.

"Culture: late barbarism. Handwork of high quality—good. Physically excellent stock . . ." There was a complicated and incomprehensible schemata of numbers and abstract forms. "The time: two thousand years—more progress might have been expected, if any survivors at all initially postulated; but this will do. The pessimists were mistaken. We can begin again." Then, startlingly super-imposed on the cool progression of logical thought, came a wave of raw emotion, devastating in its force. It was a lustful image of a world once more obedient, crawling, laboring to do the Ryzgas' will—*toward the stars, the stars!* The icy calculation resumed: "Immobilize these and the ones indicated in the passage above. Then wake the rest . . ."

Var was staring in fascination at the Ryzga's face. It was a face formed by the custom of unquestioned command; yet it was lined by a deeply ingrained weariness, the signs of premature age—denied, overridden by the driving will they had sensed a moment earlier. It was a sick man's face.

The Ryzga's final thought clicked into place: *Decision!* He turned toward the switchboard behind him, reaching with practised certainty for one spot upon it.

Neena screamed.

Between the Ryzga and the control panel a nightmare shape reared up seven feet tall, flapping black amorphous limbs and flashing red eyes and white fangs. The Ryzga recoiled, and the weapon in his hand came up. There was an instantaneous glare like heat lightning, and the monster crumpled in on itself, twitched briefly and vanished.

But in that moment a light of inspiration had flashed upon Var, and it remained. As the Ryzga stretched out his hand again, Var acted. The Ryzga froze, teetering off balance and almost falling, as a numbing grip closed down on all his motor nerves.

Holding that grip, Var strode across the floor and looked straight into the Ryzga's frantic eyes. They glared back at him with such hatred and such evil that for an instant he almost faltered. But the Ryzga's efforts, as he strove to free himself from the neural hold, were as misdirected and unavailing as those of a child who has not learned to wrestle with the mind.

Var had guessed right. When Neena in her terror had flung a dream monster into the Ryzga's way—a mere child's bogey out of a fairy tale—the Ryzga had not recognized it as such, but had taken it for a real being. Var laughed aloud, and with great care, as one communicates with an infant, he projected his thoughts into the other's mind. "There will be no new beginning for you in *our* world, Ryzga! In two thousand years, we've learned some new things. Now at last I understand why you built so many machines, such complicated arrangements of matter and energy to do simple tasks—it was because you knew no other way."

Behind the hate-filled eyes the cold brain tried to reason still. "Barbarians . . . ? Our party was wrong after all. After us the machine civilization could never rise again, because it was a fire that consumed its fuel. After us *man* could not survive on the Earth, because the conditions that made him great were gone. The survivors must be something else—capacities undeveloped by our science—after us the end of man, the beginning . . . But those of us who chose to die were right."

The tide of hate and sick desire rose up to drown all coherence. The Ryzga made a savage, wholly futile effort to lift the weapon in his paralyzed hand. Then his eyes rolled upward, and abruptly he went limp and fell in a heap, like a mechanical doll whose motive power has failed.

Var felt Neena beside him, and drew her close. As she sobbed her relief, he continued to look down absently at the dead man. When at last he raised his head, he saw that the drama's end had had a further audience. In the outer doorway, backed by his clansmen, stood Groz, gazing first in stupefaction at the fallen Ryzga, then with something like awe at Var.

Var eyed him for a long moment; then he smiled, and asked, "Well, Groz? Is our feud finished, or does your ambition for a worthy son-in-law go beyond the conqueror of the Ryzgas?"

• • • THE END


TELLER

The social engineer was only doing his duty when he tried to force Lansing out of his rut of habit and routine. He forgot that ruts themselves have a habit of turning in surprising directions!

ACT of PASSION

By Raymond E. Banks

Illustrated by Paul Orban

MR. LANSING rose at 6:10 as usual that morning, dressed, ate a poached egg for breakfast and paused for a moment before a mirror before he put on his old-fashioned hat.

Ought to do something about those gray hairs, he thought. Plenty of men his age used Dyall; it would make him look ten years younger. But some naturalistic, unhypocritical streak inside him made him put on his hat with a sigh and give up the thought as he had almost every morning for a year.

He selected three luxurious South American cigars from his humidor and made a mental note to stop at the tobacconist's at noon to replenish the supply, according to his habit.

He lit one, put the other two in his pocket, and caught the 7:10 to the city. Aboard the commuter's aircar he shoved a nickel in the slot, pulled out a facsimile paper and fell to studying the stock-market, especially his small Martian holdings and those new Venusian stocks that he had an eye on.

"Your attention please! No smoking on the aircar!" The robot voice brushed uselessly against his ear as it did every morning. He continued to smoke, conscious of the envy of the other commuters who smoked less expensive brands. But they were married men who couldn't afford such extravagance.

At the office he smiled good morning to his friends and sank into his place at the head of the Accounting Department. The newest computing machines in the office glowed on his desk; his swivel chair bore the largest, thickest seat

pad even though his flanks were thin. It had taken him twenty years to achieve this comfortable status, and he sighed in delight at the delicious, knotty problems of the day lying before him.

Then came the interruption.

It came in the form of a small note that shot out of a communications cylinder on the side of his desk.

"Under the provisions of Par 3b of the Social Nonconformity Act, you, Franklin C. Lansing, will report to your social engineer without a second's delay. Urgent. Signed Watkins, Social Engineer, Ward Seven."

Lansing made a sound in his throat which might have been a growl or might have been a snort.

WATKINS, his social engineer, had offices on the third floor of the Haymarket Building. Lansing stepped into the anti-gravity device and out again to find himself in a sumptious, institutional office. The furnishings struck him as decadent and the other patients sat around gloomily, creating an air of tension similar to that of a doctor's office.

As a man with a secure job, money in the bank and a way of life that he liked, he did not act deferential when he faced Watkins across the broad, shiny desk.

"What's wrong with my adjustment?" he asked without preamble. "I never have to come in except for the yearly check-ups."

Watkins was a rotund man with piercing blue eyes. He regarded Lansing's thin, neatly-dressed figure with suspicion.

"I'm afraid that's just the trouble," he said. "My social engineering reporters have been watching you, Lansing. Since the death of your sister, you've lived alone and liked it. You rise at a certain hour, eat your meals at the same places and turn in at a certain hour. Like an automaton. It's dangerous."

Lansing let out a strangled squawk. "With all the people in New York that are getting into trouble because of poor adjustment I'd think you'd let a well-adjusted person alone. I'd think—"

Watkins held out a firm, fat hand.

"Give me the key to your apartment."

Lansing felt the blood drain from his face.

"Non-compulsion!" he gasped.

"Exactly. It's our job to see that people like you don't crack up. Your kind is the most dangerous. A few days ago a man who'd never been in a speck of trouble all his life stole twenty thousand dollars and eloped with his secretary, a married woman. Thus he ruined three lives—his own, the woman's and her husband's. Last week a man who had lived in the same place for twenty-five years and never caused any one trouble went out on the street and killed three people with a gun. People who were strangers—that he'd never seen before. His excuse was that he didn't like redheaded people. Obviously a case of long, slow deterioration.

"The whole purpose and meaning of the Social Nonconformity Act is to prevent these horrors.

You, now, you have a compulsion to orderliness that is near insanity. You revel in routine. But the human mind and body cannot stand this supernatural order. Sooner or later you're going to crack as a result of your compulsion to drab order. We prevent that by forcing you into non-compulsion and breaking the routine of your life which you would be bound to break in a more dangerous way later.

"Commit your act of passion now, Lansing, before it grows into one that is uncontrollable and disastrous!"

The social engineer flung the non-compulsion license on his desk in front of Lansing.

"But—but," cried Lansing. "I don't want to commit any act of passion. I'm happy. I—"

The social engineer shook his head. "After all, Lansing, we're all human. And how long has it been since you've—ah—been in the company of a woman? How long since you've gotten drunk or had a real argument? No—you'll have to give me the key to your apartment."

Watkins' expression was triumphant and firm. Lansing, feeling like the Earth had been shot out from under him, handed over the key to his apartment and picked up the non-compulsion license. . .

IN A BAR, near the Haymarket Building he ordered an unaccustomed early morning drink. When the bartender saw the non-compulsion certificate projecting from his pocket he slid another drink along the bar.

"Better have another, Buster. On the house. I been in that mess myself. In my case they made me attend lectures and concerts and join the Chamber of Commerce."

"I wish mine were that easy," said Lansing. Then he had another thought and called Mr. Hedges. Hedges was the district social engineer over Watkins. He was not a close friend, because Lansing disliked social engineers, but he had done Hedges' income tax for a number of years. Lansing worded his appeal carefully, hinting that Watkins was probably more than stupid.

"'Fraid there's nothing I can do," said Hedges. "It's true that people like you who run along quietly in a rut are likely to break down. There are exceptions, of course, but Watkins is within the law. Best thing to do is get it over with in a hurry." The man's hands sawed the air. "Do something big," he suggested and rang off.

LANSING slipped into the bank aware that a couple of shadows that must be social engineering reporters followed wherever he went. An unaccustomed revolver weighted down his coat on one side. The gun was hot and he felt miserable. He hated scenes anyway, but—

Lansing took his place in a waiting line, still bound by his sense of propriety and order. The bank buzzed with activity, the lines moving with peristaltic life; a baby squalled, somebody coughed and the sunlight yellowed on the black marble desks.

As usual, there was a man who had to purchase traveler's checks, so that the line Lansing chose moved slowest of all. People who had come in after him were serviced and left again. After an interminable wait he reached the window, his legs a little numbed from standing. He felt that the whole thing was already going badly.

"I'm afraid this is a robbery," he told the teller, pointing the gun at her. He felt miserable, standing there with the gun in his hand, expecting the guards to move in and shoot without asking questions.

The girl's eyes widened and then she saw the bit of green in his pocket.

"Non-compulsion?"

"Uh, yes. Please put up your hands."

"How can I give you money if I put up my hands?"

"Do as I say," frowned Lansing, his knuckles white on the gun.

The girl lifted her hands. Lansing turned around to the people behind him.

"This is a robbery," he said. "Er —non-compulsion. Please put up your hands."

Instead of complying, the people stared at him dully and then, with resignation, moved over to the other lines. A buzzer, sharp, insistent, rang out twice. The employees froze.

"Everybody hands up!" shouted someone. "Non-compulsion." All employees' hands went up. The people waiting shot dirty looks at Lansing, knowing this meant delay. They did not raise their hands. The bank guard frowned and stepped outside the bank as required by custom, but remained glowering through the window to make sure it was a real non-compulsion. Somewhere a police car's siren began to wail, coming closer.

The girl at the desk counted out two twenties and a ten. "Fifty is usual," she said. Then she quickly thrust up her hands again as he shoved the gun at her. He pocketed the money with one hand, feeling like a small boy standing before a class and reciting.

"Thanks," he said, starting to move away. He wanted to get out in a hurry.

"Wait a minute, mister," she said harshly. "I got to have the number of your non-compulsion license so we can get the money back."

For the first time, Lansing began to feel somewhat unadjusted. "Ask the social engineers," he snapped. "They got me into this. They can pay." He strode out of the bank.

A police riot squad was pulled up outside. The police stood around in hard-eyed silence, watching him sullenly. They didn't like non-compulsion either. Lansing, feeling sillier than he could ever remember, tossed his empty gun at a detective.

"Here, go shoot up a social engineer," he said miserably and walked off down the sunlit street, his face burning with shame and sensitivity. If non-compulsion was supposed to stir up emotions, he was off to a good start.

SHE WAS SMALL and graceful and blonde. Almost pretty, except that there were crow's feet

around her eyes and mouth. But she would do.

She showed surprise as he sat down at her lonely table. In the Terrace Room at the Kensington Hotel, lunch costs six dollars a plate, and you didn't sit at a stranger's table uninvited. A frowning waiter was coming towards him across the room and sunlight gleamed on the rug and sparkled from the heavy linen and silver.

"What is the meaning of this?" said the woman, with hostility.

Lansing was forced to drop his eyes from the clear gaze. "Non-compulsion," he muttered, his eyes darting to the unaccustomed luxury of the millionaire's hotel. He usually had lunch at Eddie's where all was noise and clatter, and you were served by robot waiters. It made him feel uneasy to have a real, human waiter standing there, one of a vanishing race.

"Is this man giving you trouble, Ma'm?" asked the waiter.

The woman laughed a silvery laugh. "Don't be ridiculous," she told the waiter. She regarded Lansing with amusement. "I had fun on my non-compulsion," she said, "and I wouldn't spoil yours."

Lansing held the menu with the same white knuckles that had gripped the unaccustomed gun. He had hoped she would drive him away. Even the menu bothered him. He was used to ordering from an electronic menu where you punched keys, not something written in French.

"Give me—the works," he told the waiter self-consciously. Then he sat there brooding while the waiter and the woman, whose name, he learned, was Doris Woodring, argued about his luncheon. He was sullenly aware of the two human bloodhounds that were the social engineering reporters just slipping into the far corner of the room. . .

The food was very rich, and tasty, and Mrs. Woodring chatted with the easy social grace of the leisured. When Lansing mentioned his Martian holdings, they found a subject of common interest, for her husband was in finance. Suddenly the luncheon was quite enjoyable.

"But then," laughed Mrs. Woodring, "that belongs to the part of your life you're trying to break away from. We should be talking about love instead."

"Love?" he asked blushing, the flow of his enjoyment brought to a sudden halt.

Her teeth sparkled in a smile as she blew pale blue cigarette smoke against the dense fog from his South American cigar.

"Well, after all, from what you say, your social engineer will expect you to have a fling with women, you being a bachelor."

"Er-fling—yes," he said running a finger inside his collar. "What do you think we ought to do?"

"Go somewhere where we can be alone, I suppose," she said, dropping her eyes to her plate. "I was going to a meeting of Concentrated Charities this afternoon, but it isn't important. We can go to my town apartment. . ."

Lansing felt fear coursing through his body. His experiences with women had been few and not exciting. And when Mrs. Woodring stood up so that he got a good

look at her and the way she handled her trim body, he became more frightened. It was obvious that her sleekness meant experience.

A walk in the fresh sunshine of the park and a couple of drinks at a bar and they were admitted by a real, human servant to her uptown apartment. Mrs. Woodring went off to get some drinks and Lansing paced impatiently up and down.

No! They asked too much. It was really too embarrassing. He flung himself to the television phone. Beside it was an address book. He fumbled with the pages, his heart beating in determination.

He found the number he wanted and dialed.

"Get me Mr. Woodring," said Lansing imperatively to the girl on the telephone. "It's urgent."

Presently he was looking at a pleasant-faced man with dancing blue eyes, much like his wife's.

"There's a man in your uptown apartment with your wife," he gasped. "There's a—uh—man in your—uptown apartment."

Woodring looked puzzled. "What man?"

"Me," said Lansing in determined, self-defensive anger.

Woodring studied him in suspicion and dislike for a second. Then the clouds broke and he smiled. "Oh," he said. "Well, thanks for the call. Would appreciate it if you'd lay off my brandy, old boy. It's a little low."

Woodring had seen the corner of the non-compulsion license sticking from Lansing's pocket.

"But—but—" said Lansing.

"Don't worry," said Woodring. "Everything will be all right. You'll be all right. Excuse me, old boy, got lots of work to do—"

And Woodring rang off. Lansing sat there, feeling his inner palms sweat.

SHE CAME BACK to the room without the servant but with the drinks. She was wearing a silver thing that could have been a house costume and could have been pajamas. It was silken and seductive. When she bent to pour, it was obvious that there wasn't much else.

Lansing saw a button and punched in desperation.

"What did you do that for?" she asked, sitting beside him on the sofa.

"I want — uh — brandy," he gulped.

The closed-mouthed servant appeared. "Brandy," Lansing ordered, trying to control his voice. "Er—brandy." He tried desperately to think of some other reasons to keep the servant in the room. He could think of none. The servant poured the brandy and left while Doris studied him with a half-smile.

"Perhaps you don't find me attractive," she said.

"Very attractive," he exploded. "You couldn't be attractiver, er—"

She scooted up beside him. "Now look, Frank," she said seriously. "This is non-compulsion and you've got to get through with it or those damn social engineers will drive you crazy."

Lansing nodded miserably, closed

his eyes and trembled. The rose-petal lips touched his. Then she moved her supple body tight to him and she trembled excitingly in a burning kiss. It seemed—er—burning.

However, that was all. After the embarrassment of a couple of kisses she pulled away and they fell to talking about his investments on Venus. Enough was enough, and obviously society couldn't cure one person's habit pattern by destroying the marriage-habit pattern of others. He realized this when he heard his shadows, the reporters, thumping around in the outer hall, still on guard, ready to prevent any real seduction.

No wonder that other, quiet man had suddenly up and shot three redheads. His social engineer must've been a redhead, decided Lansing.

He shook hands with Mrs. Woodring and left, feeling relieved and happy. At least he'd done enough to satisfy Watkins. It had been a strain but now they'd leave him alone. He arrived at his apartment with a sigh.

The social engineering reporters were ahead of him, denying him entrance to his place.

"Now wait a minute," said Lansing. "I've gotten more or less drunk, robbed a bank and kissed a blonde. If that doesn't take care of my hidden desires, nothing ever will, because each of these acts is a monumental disturbance for me, totally against the grain."

"No," said one, "you haven't really committed an act of passion yet. True, you've done all these things, but you haven't felt them. Keep going—it may take several days."

"But where will I sleep tonight?"

The reporter grinned. "Why not try a park bench?"

Argument was futile. Lansing grimly plodded away.

Sometime in the middle of the night he awoke with a sneeze. The park bench was hard. Besides, policemen kept waking him up to make him show his non-compulsion license. He turned over and sneezed again. He was going to have a cold. And when he had a cold—

Lansing contemplated the horror of his situation staring at the solemn moon. A great resolve and purpose took shape inside of him, firmed up and became a burning certainty. . .

RED-EYED, disheveled and sneezing, he faced Watkins across the social engineer's gleaming desk. His unshaven beard itched and he felt dirty and completely miserable.

"I want the key to my apartment back," he said.

Watkins shuffled some papers. "I'm afraid these reports show that you haven't really cut loose yet, Lansing. You're the same timid, apologetic, routinized person you've always been."

"I'm about to cut loose," said Lansing.

His temples were throbbing, his mouth was dry. He sneezed once, and then he climbed up and walked over the top of Watkins' desk. He put his foot on Watkins' chest and shoved, and the fat man went over

backwards in his swivel chair with a crash. A wild thrill of delight coursed through Lansing.

"Help! He's gone mad—" cried Watkins.

"Mad! Mad!" yelled Lansing in delight, jumping down and punching the chubby figure. He hadn't laid an angry hand on a fellow-man since his second year in high school. The first punches were uncertain but he got the knack with astounding quickness and let Watkins have it in the face and body.

"Here's your passion!" he roared slamming Watkins against the floor so the whole office shook. Watkins slumped on the soft rug in a bloody blubbering and suddenly Lansing felt the hate and excitement fade into a wonderful sense of contentment.

He stood over Watkins, feeling his bruised hands with satisfaction. The familiar reporters rushed into the room. One of them covered him with a gun while the other jumped to the phone and called, first a doctor, then the police, and then Hedges, the district social engineer.

Hedges listened, frowning, to the story; and then Lansing laid his non-compulsion license on Watkins' rumpled desk and said quietly:

"Now can I have my apartment key back?"

"You won't need your apartment!" yelled Watkins, sitting up on the floor. "You're going to jail for twenty years for this!"

"Give him his key," said Hedges. "Watkins, I'm afraid you can't prefer charges. We social engineers have a higher duty—to help our patients achieve adjustment. In this one case, the only passion Lansing could feel was against you. Since no permanent harm was done, he has acted within range of his non-compulsion license. Therefore, I pronounce him free."

LANSING was sick in bed suffering from his cold all that Saturday and Sunday. He rose at 6:10 as usual Monday morning, dressed, ate a poached egg for breakfast and paused for a moment before a mirror before he put on his old-fashioned hat.

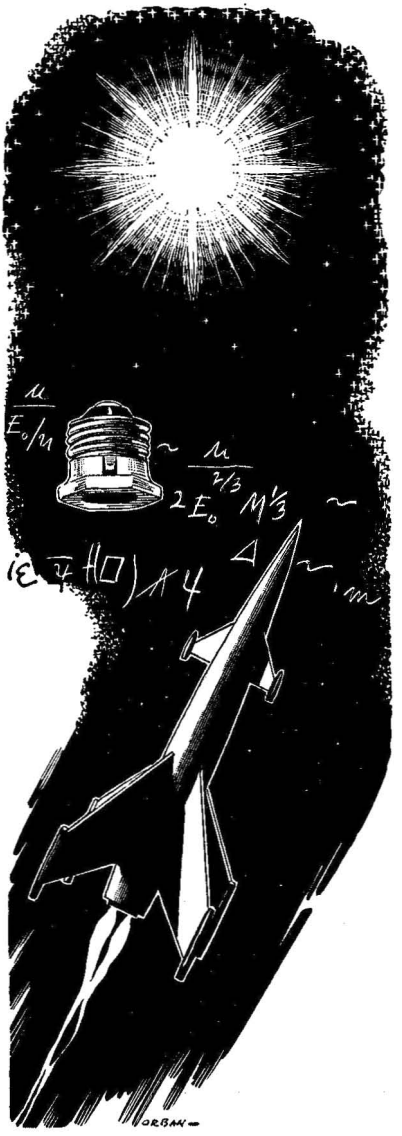
Ought to do something about those gray hairs, he thought. Plenty of men his age used Dyall; it would make him look ten years younger. But some naturalistic, unhypocritical streak inside him made him put on his hat with a sigh and give up the thought as he had almost every morning for a year.

He selected three luxurious South American cigars from his humidor and made a mental note to stop at the tobacconist's at noon to replenish the supply, according to his habit.

He lit one, put the other two in his pocket, and caught the 7:10 to the city . . .

• • • THE END

The ultradrive had just one slight drawback: it set up a shock wave that made suns explode. Which made the problem of getting back home a delicate one indeed . . .



Time Fuze

By Randall Garrett

Illustrated by Paul Orban

COMMANDER BENEDICT kept his eyes on the rear plate as he activated the intercom. "All right, cut the power. We ought to be safe enough here."

As he released the intercom, Dr. Leicher, of the astronomical staff, stepped up to his side. "Perfectly safe," he nodded, "although even at this distance a star going nova ought to be quite a display."

Benedict didn't shift his gaze from the plate. "Do you have your instruments set up?"

"Not quite. But we have plenty of time. The light won't reach us for several hours yet. Remember, we were outracing it at ten lights."

The commander finally turned, slowly letting his breath out in a soft sigh. "Dr. Leicher, I would say

that this is just about the foulest coincidence that could happen to the first interstellar vessel ever to leave the Solar System."

Leicher shrugged. "In one way of thinking, yes. It is certainly true that we will never know, now, whether Alpha Centauri A ever had any planets. But, in another way, it is extremely fortunate that we should be so near a stellar explosion because of the wealth of scientific information we can obtain. As you say, it is a coincidence, and probably one that happens only once in a billion years. The chances of any particular star going nova are small. That we should be so close when it happens is of a vanishingly small order of probability."

Commander Benedict took off his cap and looked at the damp stain in the sweatband. "Nevertheless, Doctor, it is damned unnerving to come out of ultradrive a couple of hundred million miles from the first star ever visited by man and have to turn tail and run because the damned thing practically blows up in your face."

Leicher could see that Benedict was upset; he rarely used the same profanity twice in one sentence.

They had been downright lucky, at that. If Leicher hadn't seen the star begin to swell and brighten, if he hadn't known what it meant, or if Commander Benedict hadn't been quick enough in shifting the ship back into ultradrive—Leicher had a vision of an incandescent cloud of gaseous metal that had once been a spaceship.

The intercom buzzed. The commander answered, "Yes?"

"Sir, would you tell Dr. Leicher that we have everything set up now?"

Leicher nodded and turned to leave. "I guess we have nothing to do now but wait."

When the light from the nova did come, Commander Benedict was back at the plate again—the forward one, this time, since the ship had been turned around in order to align the astronomy lab in the nose with the star.

Alpha Centauri A began to brighten and spread. It made Benedict think of a light bulb connected through a rheostat, with someone turning that rheostat, turning it until the circuit was well overloaded.

The light began to hurt Benedict's eyes even at that distance and he had to cut down the receptivity in order to watch. After a while, he turned away from the plate. Not because the show was over, but simply because it had slowed to a point beyond which no change seemed to take place to the human eye.

Five weeks later, much to Leicher's chagrin, Commander Benedict announced that they had to leave the vicinity. The ship had only been provisioned to go to Alpha Centauri, scout the system without landing on any of the planets, and return. At ten lights, top speed for the ultradrive, it would take better than three months to get back.

"I know you'd like to watch it go through the complete cycle," Benedict said, "but we can't go back home as a bunch of starved skeletons."

Leicher resigned himself to the necessity of leaving much of his work unfinished, and, although he knew it was a case of sour grapes,

consoled himself with the thought that he could as least get most of the remaining information from the five-hundred-inch telescope on Luna, four years from then.

As the ship slipped into the not-quite-space through which the ultradrive propelled it, Leicher began to consolidate the material he had already gathered.

COMMANDER BENEDICT wrote in the log:

Fifty-four days out from Sol. Alpha Centauri has long since faded back into its pre-blowup state, since we have far outdistanced the light from its explosion. It now looks as it did two years ago. It—

"Pardon me, Commander," Leicher interrupted, "But I have something interesting to show you."

Benedict took his fingers off the keys and turned around in his chair. "What is it, Doctor?"

Leicher frowned at the papers in his hands. "I've been doing some work on the probability of that explosion happening just as it did, and I've come up with some rather frightening figures. As I said before, the probability was small. A little calculation has given us some information which makes it even smaller. For instance: with a possible error of plus or minus two seconds Alpha Centauri A began to explode the instant we came out of ultradrive!

"Now, the probability of that occurring comes out so small that it should happen only once in ten to the four hundred sixty-seventh seconds."

It was Commander Benedict's turn to frown. "So?"

"Commander, the entire universe is only about ten to the seventeenth seconds old. But to give you an idea, let's say that the chances of its happening are *once* in millions of trillions of years!"

Benedict blinked. The number, he realized, was totally beyond his comprehension—or anyone else's.

"Well, so what? Now it has happened that one time. That simply means that it will almost certainly never happen again!"

"True. But, Commander, when you buck odds like that and win, the thing to do is look for some factor that is cheating in your favor. If you took a pair of dice and started throwing sevens, one right after another—*for the next couple of thousand years*—you'd begin to suspect they were loaded."

Benedict said nothing; he just waited expectantly.

"There is only one thing that could have done it. Our ship." Leicher said it quietly, without emphasis.

"What we know about the hyperspace, or superspace, or whatever it is we move through in ultradrive is almost nothing. Coming out of it so near to a star might set up some sort of shock wave in normal space which would completely disrupt that star's internal balance, resulting in the liberation of unimaginably vast amounts of energy, causing that star to go nova. We can only assume that we ourselves were the fuze that set off that nova."

Benedict stood up slowly. When he spoke, his voice was a choking whisper. "You mean the sun—Sol—might. . ."

LEICHER NODDED. "I don't say that it definitely would. But the probability is that we were the cause of the destruction of Alpha Centauri A, and therefore might cause the destruction of Sol in the same way."

Benedict's voice was steady again. "That means that we can't go back again, doesn't it? Even if we're not positive, we can't take the chance."

"Not necessarily. We can get fairly close before we cut out the drive, and come in the rest of the way at sub-light speed. It'll take longer, and we'll have to go on half or one-third rations, but we *can* do it!"

"How far away?"

"I don't know what the minimum distance is, but I do know how we can gage a distance. Remember, neither Alpha Centauri B or C were detonated. We'll have to cut our drive at least as far away from Sol as they are from A."

"I see." The commander was silent for a moment, then: "Very well, Dr. Leicher. If that's the safest way, that's the only way."

Benedict issued the orders, while Leicher figured the exact point at which they must cut out the drive, and how long the trip would take. The rations would have to be cut down accordingly.

Commander Benedict's mind whirled around the monstrousness of the whole thing like some dizzy bee around a flower. What if there had been planets around Centauri A? What if they had been inhabited? Had he, all unwittingly, killed entire races of living, intelligent beings?

But, how could he have known? The drive had never been tested before. It couldn't be tested inside the Solar System—it was too fast. He and his crew had been volunteers, knowing that they might die when the drive went on.

Suddenly, Benedict gasped and slammed his fist down on the desk before him.

Leicher looked up. "What's the matter, Commander?"

"Suppose," came the answer, "Just suppose, that we have the same effect on a star when we *go into* ultradrive as we do when we come out of it?"

Leicher was silent for a moment, stunned by the possibility. There was nothing to say, anyway. They could only wait. . .

A little more than half a light year from Sol, when the ship reached the point where its occupants could see the light that had left their home sun more than seven months before, they watched it become suddenly, horribly brighter. *A hundred thousand times brighter!*

. . . THE END

It was, Kirk thought, like standing in a gully, watching a boulder teeter precariously above you. It might fall at any minute, crushing your life out instantly beneath its weight. Your only possible defenses are your brain and voice—but how do you argue with a boulder which neither sees nor hears?

'mid pleasures and palaces

By James McKimmey, Jr.

Illustrated by Philip Parsons

THIS PLANET was remote and set apart, and nothing about it had made William Kirk think he might find human life. Yet just beyond, through a thorny bush shaped like an exploding rose, Kirk had seen eyes and nose and a flash of yellow hair that were definitely human.

Kirk poised motionless. He was three miles from the rocket and Leo, who was waiting inside of it. He thought for a moment of how Leo had told him, as they made their landing, that this is the kind of planet where you could go no further. This is the kind of planet that could be the end of twelve years, and you'd better be careful, William, old sport.

Kirk noticed a faint breeze; his palms were wet, and they cooled when the breeze touched them. He placed his palms against his jacket. Damn you, Leo, he thought. Damn your rotten fortune-telling. Kirk was superstitious when he was in space, and the memory of Leo Mason's cool, quiet voice saying "Watch it now, sport. Be careful, be careful . . ." seemed now like some certain kiss of fate.

The bush trembled and Kirk's right hand flicked to his holster. His pistol was cold against his fingers and he let it fit loosely in his hand, the barrel half-raised.

The bush shivered again, and then all at once the figure was rising from behind it, a tall wide figure

with a very tan face, lined and toughened by the sun. The shoulders, bare like the chest, were massive, yet somehow stretched-looking, as though endless exposure to wind and rain and sun had turned the skin to brown leather.

Kirk had his pistol pointing at the figure's stomach now, and the figure blinked, while the breeze touched and ruffled the long bleached hair.

The figure raised a large hand, palm up, and curled the fingers. "Hello?" he said softly. Kirk was surprised by the word and the polite sound of it.

Kirk remained motionless, pistol pointing. "Who are you?" he said through his teeth.

"Harry," said the figure, as though Kirk surely should know who he was. "I'm Harry, of course."

"Yes?" said Kirk carefully. "Harry?"

The figure nodded. "Harry Loren, don't you know?"

"Oh, yes," Kirk said, his eyes watchful. "Harry Loren." There was something about the man's eyes, Kirk decided. They were deep set and very bright within their sockets. They didn't match the softness of the speech. Harry Loren smiled and showed his yellow teeth. "Who are you?" he asked politely.

"I'm William," Kirk said. It was as though he might be speaking to a frightened child, he thought, who help a sharp knife in his hands. "William Kirk, of course."

Harry Loren nodded apologetically. "Oh, yes. I can't remember everyone. It's been so long. How are you, William?"

Kirk's eyes flickered. "I'm fine."

"That's nice," Harry Loren nodded. His wild hair brushed over his shoulders and reflected its yellowness against the sun. The knife then, the one that Kirk had thought about a moment ago, appeared in the figure's hand. *"Bastard,"* Harry Loren hissed, and he was leaping at Kirk, the knife making a sweep toward Kirk's stomach.

Something kept Kirk from squeezing the trigger, and instead he swung his pistol so that it struck the brown, weathered knuckles. The knife flew into a thicket and Loren, screaming, was upon Kirk, reaching for Kirk's neck. Kirk wrenched backward and at the same time swung the barrel of the pistol toward the yellow flying hair. There was a cracking sound, and Harry Loren, brown and wild-looking, crumpled silently before Kirk's feet.

Kirk examined the man, then he reached down and picked up the knife from the thicket. It was crudely hammered out from some kind of alloy, but sharp nevertheless, and it could have been deadly in a hand like Harry Loren's.

Kirk looked again at the yellow-haired man on the ground. He was wearing some kind of ragged cloth about his waist and nothing else. Across his back, Kirk could see, was a curving scar, an inch wide and ten or twelve inches long. It was white and very noticeable against the brown of the man's skin.

Kirk bent down, looking at the scar carefully. It could have been made during a crash of a rocket, but there were, he noticed, fine whiter ridges running along the length of the scar as though they

had been made by fine comb-like teeth. A talon, perhaps. Some kind of strange claw. Kirk straightened quickly.

It went through his head that Harry Loren might not be the only animal life on this planet. He tightened his hand on his pistol, stepping backward, his eyes darting.

But he could only pivot slowly, trying to see, to discover, and he was much too slow when he finally saw it. It was only a flash of yellow and brown, making a hissing kind of sound. He felt the ripping along his right arm. The pistol was going out of his hand. And a swirling blackness got in front of his eyes.

WHEN HE AWOKE he saw Harry Loren first, who was sitting up now, silent, motionless, with Kirk's pistol resting in his hands.

To the side of Loren and just a little behind rested a peculiar-looking thing. It was alive because its head, shaped like a cone that had been attached to its neck, kept swaying gently back and forth. The dark blue eyes, spaced back from the smallest end of the cone, were rather small with no lids. The creature's neck was long and thin, a multitude of shades of yellow and brown like the head, and the rest of the body widened out like a funnel and this area was covered with yellow feathers. It had what appeared to be arms and legs, long thin extensions of dark brown with large bony joints. At the end of each of these, Kirk could see a flat claw with rows of tiny comb-like teeth.

Loren reached out and ran a hand softly along the creature's long neck.

Kirk tried to think, testing his muscles without moving, and he remembered then the ripping along his right arm. He looked at the arm and at the way his jacket had been torn away along with the shirt beneath it. He could see the comb-like marking of his skin. The cut was not deep but it bled a little and stung. He tried to move his arm and found that he could.

Kirk looked back to Loren. Loren stroked his hand along the thin neck of the creature. Kirk decided to try:

"That's a nice looking animal, Harry."

Loren's expression did not change.

Kirk paused. From the looks of the man, Loren had been here a long time, a very long time. It had been a crash, probably. And all the years afterward of loneliness, all the time for the quiet but sure warping of the brain.

He raised a hand quickly, watching Loren's eyes. Loren did not change expressions or move the pistol, but Kirk felt a comb-like claw touching his hand, freezing it to motionless with its razor tips. Kirk looked at the creature. The dark blue eyes were steady. Kirk lowered his hand slowly and the claw was drawn away. The creature's head resumed it's gentle swaying, and Loren's hand resumed its stroking.

Kirk licked his lips.

"Where have you been?" Loren said, his voice sudden and hoarse now.

"Where have I been?" Kirk said, tight and motionless.

"Why didn't you come before?"

Kirk considered it. The dancing lights in the man's eyes, the high-strung sound of his voice were things to make you wary and careful. Kirk closed his fingers the slightest bit. "I didn't know you were here."

Loren's lips thinned. "Liar."

Kirk thought he might try a smile, to reassure Loren that he was telling the truth. He decided against it. "How long have you been here, Harry?"

"How would I know?"

Kirk thought of the endless nights and days when time ran together and there was no more separation of one time from another. Today would be tomorrow and tomorrow would be today. No changes. Endless. "Did you crash, Harry?"

"Did you crash, Harry?" Loren mimicked, and for a moment Kirk felt a chill dancing through him as he watched the sarcastic leer of Loren's mouth.

Kirk kept his tone polite, patronizing. "Was there anyone else?"

Loren laughed, a laugh that bounced over the rocks and through the scrubs and bushes.

"Was there, Harry?"

"Oh, yes," Loren said, grinning and showing his yellow teeth. "Six. One, two, three, four, five, six. Would you like to see their graves? I've kept the graves pretty. I know where they are because I dug them."

Loren remained in a half crouch, the fingers of one hand holding the pistol loosely, the other keeping up its monotonous stroking of the animal. His eyes seemed to become vacant for a moment, as though lost in the memory of the digging of six graves. Then they narrowed. "Where have you been?"

Kirk tried to match his answer to the wants of the man. "I came as soon as I could."

"You did?"

"Yes," Kirk said. "I did."

Loren's right hand stopped its stroking and his fingers tightened about the thin long neck of the animal. "Eddie?" he said.

Kirk saw the animal's left claw whipping out. He ducked suddenly, but the claw ripped along his left arm. He tried to roll sideways, and then he lay, half sprawled, looking at the blood welling up from this new set of ripped ridges in his arm. He shifted his eyes to look at the animal, and he was quite certain that he could detect a small mouth fitting around the under side of the funnel-shaped head. It was only a line, but Kirk thought that there was a grinning look to it.

"You didn't come as soon as you could," Loren said, his voice an angry trembling sound.

"I did, Harry," Kirk said, still remaining in his half sprawl. "I really did."

Loren replaced his hand on the neck of the animal, squeezing.

"No, no," Kirk said, and he tried to keep the panic out of his voice. "Harry, I'm telling you the truth!"

LOREN'S MOUTH showed a faint surface of his yellow teeth. He shook his head, slowly, back and forth, his fingers tightening about the animal's neck.

"Harry, listen," Kirk said, watching Loren's squeezing fingers, "it's

over now. You don't have to wait any longer. I'll take you back now. I'll take you home!"

Loren froze, staring. "Home?" he said.

"That's right," Kirk said. "That's right, Harry."

"*Home,*" Loren breathed, and his eyes were suddenly like a child's, wide and unbelieving.

"The waiting's all over," Kirk said. "You don't have to wait any longer."

"I don't have to wait any longer," Loren repeated softly, and his hand dropped from the neck of the animal.

Kirk watched Loren and the swaying animal. "The rocket's ready," he said.

Loren's eyes were lost in some distant memory. Gradually Kirk could see the eyes turn shiny with tears. "Is Annette waiting?" he asked.

Kirk thought quickly. He knew that what he was going to say shouldn't be said, because he had no right. But he was thinking of his own skin. "Why, yes, Harry," he said slowly. "I imagine Annette *is* waiting."

Loren let a quick breath come through his teeth. "Annette," he whispered. "And Dickie?"

"Dickie?" Kirk said.

"Little Dickie?" Loren said and he held his breath.

"Oh, yes," Kirk lied. "Of course."

"I can't ask about Eddie, because we never had the chance," Loren said, his eyes still lost. "I always told Annette that no kid should ever grow up without a brother, only we never had the chance for Eddie." Loren reached out absently and touched the brown and yellow neck of the creature. "I called this fellow Eddie, though. Do you suppose that was all right? He's not very pretty."

Kirk nodded, looking at the waving, funnel-shaped head of the animal. "That was all right, Harry."

"Does she still braid her hair?" Loren asked, his eyes shiny.

"What?" Kirk said.

"Annette. Does she still braid her hair?"

"Why," Kirk said slowly, feeling his palms going moist. "Why wouldn't she, Harry?"

A faint smile flickered across Loren's lips as he remembered.

Kirk watched one of the creature's claws, out of the corners of his eyes. He opened and closed the fingers of one hand, testing. The claw jerked slightly.

The blood of Kirk's new wound was drying, he knew, because it had been only a surface cut. He wondered how it would be if the thing used its claws with serious intent. Like it must have to make the cut that had been raked into Loren's back. Loren was bending forward now, and Kirk could see the tip end of that scar. Somehow Loren had managed to stay alive and befriend the creature. Eddie. The lidless eyes stared.

Kirk knew that he had to make use of the moment. It could break apart any time, the wildness could return, the unreasoning . . .

"Listen, Harry," he said, "we ought to get started, you know. There's no use waiting longer."

"Started?" Loren said.

"Of course," Kirk said, trying to

keep his voice matter-of-fact. "You're going home."

Loren looked at Kirk and his eyes turned suddenly hard and his mouth lost the faint smile. "I am," he stated flatly.

"Yes," Kirk said. "Of course."

"You're a liar."

"Now, Harry," Kirk said, his eyes flickering to the waiting animal. "I surely wouldn't lie to you."

"You haven't come for me until after all this time, and now you say you surely wouldn't lie to me."

It was like standing in a gully, Kirk thought, watching a boulder teetering above you. It tipped this way and that, and you didn't know when or if it was going to come hurtling down. You waited. But Kirk couldn't wait, he knew. He had to do something.

"Harry, listen. It wasn't easy to find you, don't you see?" He hoped he was making it sound as though all he had done for the last dozen years of exploring was look for Harry Loren. He wished that the damned thing would stop swaying its ugly head back and forth. Loren's hand was inching out toward the yellow and brown neck.

"Look, Harry, these things aren't done in a day. We—"

"A day!" Loren hissed. "A *day!* All this time and you say a *day!*"

"No, I'm sorry," Kirk said quickly. He wished he could shift out of the cramped half-lying position he was in. "I didn't mean a day, Harry. I meant it wasn't easy. We didn't know where you were—" He was talking quickly, whining almost, and he'd never whined before.

Loren's fingers were touching the waving neck.

"We'd better hurry," Kirk said desperately. "Annette's waiting. And Dickie, of course."

Loren blinked.

"You wouldn't want to keep them waiting any longer, not after all this time, Harry."

Loren stroked his fingers slowly down the long neck of the animal.

"I think," Kirk said, almost hoarsely, "now that I really remember it, Annette *was* still wearing her hair braided. I remember that now, Harry. Positively."

Loren froze the motion of his hand and stared at Kirk. His lips trembled, and then suddenly he put his hands in front of his face. He bent forward, and Kirk felt his nerves jumping, watching the man start to cry.

The animal turned its stare away from Kirk for the first time. It looked at Loren and then slowly raised a claw, touching Loren's shoulder carefully. It made a sound then, a peculiar hissing sound, soft, barely audible. There was no danger in it, or menace, only a pitiful sound.

Loren raised his head a little and brought his hands away from his face. Tears had cut through dust and grime and his face was streaked.

"Shall we go, Harry?" Kirk said.

Loren wiped at his eyes, stupidly, without knowing what he was doing. Then he brought his hands down and wiped them across his chest.

"All right," he said. "Let's go." He picked up Kirk's pistol from where he had dropped it on the ground and held it out.

Kirk looked at the gun and at the

animal. The claw had been drawn away from Loren's shoulder and again it was poised, ready. "You keep it, Harry," he said."

"Oh, yes. Of course," Loren said. There was a moment of silence as Loren stuck the pistol absently into the waist of his ragged cloth covering, beside the knife. The three of them waited then, Kirk, Loren, and the animal.

"Eddie?" Loren said finally. "Are you ready?"

KIRK FELT himself smiling in the direction of the animal. He remembered when he was a small boy, going by a house where there had been a mongrel with a flat head and large teeth. He had smiled at that animal as he was doing now. The dog had sensed his fear in spite of the smile.

Loren was standing up slowly, and the animal's head swayed in slow circling motions.

"All right?" Loren said.

Kirk glanced at the man, saw the wild, nearly vacant look of the face, the polite tilt of the head. Kirk's palms were wet. Goddamn it, he thought, and he stood up suddenly.

The animal extended a claw, slowly, turning it so that it seemed to wind and circle as it came toward Kirk.

"Eddie," Loren said.

The claw came away. Kirk caught his breath.

"Shall we go?" Loren said, his eyes shining.

"Yes," Kirk said. "We'll go, Harry." He turned slowly, so that his back was to Loren and the animal. He thought about the comb-like claws and the scar on Loren's back. He thought about Loren's knife and about the pistol.

He wanted to look back as he walked. He wanted to talk, to hear Loren's answer and so know just where he was. More than anything he wanted to break into a run and get into that rocket and get out of here.

He could see the gleam of the rocket finally, but he didn't look back yet. He kept moving. As he got closer he could see Leo, standing near the base of the ship, tall, leaning carelessly against the silver surface, smoking. He wanted to shout to Leo, to tell him for God's sake to wake up and protect him.

They reached the edge of the clearing and Leo, whose careless body had stiffened, waited motionless, one hand on his pistol. Kirk stopped. "There it is, Harry," he said, not turning around. "There's the ship." He waited, half-closing his eyes, breathing slowly.

There was no sound.

"That's Leo, my friend, Harry," Kirk said, putting his palms flat against his thighs. "Your friend, Harry."

Leo, Kirk could see, was still frozen, his eyes slitted to narrow brightness. Kirk began to step into the clearing. "Hello, there, Leo," he said, his voice a tense, grating sound. "I've brought some friends."

Leo was lifting his pistol out of its holster, inchingly.

"Friends," Kirk rasped.

Leo's thin eyes flickered and the pistol slid back into the holster.

Kirk turned around slowly, and he saw that Loren had stopped just inside the clearing. The animal re-

mained beside him, its head making its slow circles. Loren was staring up at the rocket and the sun reflecting from the bright surface, came down and shown on Loren's face, deepening the lines there.

"Leo," Kirk said slowly, "this is Harry Loren and his friend, Eddie. Harry's been here quite a while, waiting for us."

"Oh, yes?" said Leo, still not moving.

"That's right, Leo," Kirk said. "Quite awhile. What year was it, Harry?" he said across the clearing. "What year did you crash?"

Loren blinked and there were tears again in his eyes. He reached out slowly, and the animal shifted so that its head touched Loren's hand. "Twenty-four-nineteen."

Kirk put his teeth together. "Twenty-four-nineteen," he said.

Loren nodded slowly, his eyes still upon the rocket.

"Eighteen years," Leo said softly.

"A long time, Leo," Kirk said. He thought of a girl with her hair braided about her head, looking up, while Loren had shot into the depths of sky and space. He thought of a little boy called Dickie, standing there, too, watching a fast disappearing blackness in the sky. He thought about eighteen years, and the fading of youth. A boy becoming a man. Braided hair becoming gray. Memories fading and minds adjusting. New love, new dedication. A world shifting, a universe shifting.

Kirk looked at Eddie, the animal, real and alive, waiting patiently at the tips of Loren's fingers. "Eddie's been with Harry for a long time," he said.

"Oh?" said Leo quietly.

Loren's hand stroked the brown and yellow head.

"Harry," Kirk said. "We're going to leave now. Are you ready?"

Loren was silent.

"You go up first, will you, Leo?" Kirk said.

Leo looked at him, a faint frown touching his brow, then he began moving up the ladder to the air lock. Kirk waited until Leo had disappeared into the rocket, then he repeated, "We're going to leave now, Harry. Are you ready?"

Loren remained motionless, his hand touching the animal's head. Suddenly he turned then and began moving slowly away through the brush, the brown and yellow creature bobbing beside him with queer rocker-like jumps.

"Goodby, Harry," Kirk said. Finally he turned and climbed up the ladder. When he had gotten into his seat, he said, "Let's go, Leo," and he moved his hands to the controls.

The rocket settled into the quiet motion of its course through space.

"But I don't get it," Leo said. "I really don't. All that time, and then all he has to do is walk a dozen yards and get into the rocket and he's going home. That's all he would have to do."

"Why?" Kirk said.

"Why?" said Leo, frowning.

Kirk nodded, looking at the man. "Why?"

• • • THE END

Tabby was peculiar, of course, but seemed harmless: just a little green fly that couldn't even protect itself from ordinary spiders. So the spiders fed, and grew, and fed, and grew . . .

TABBY

By Winston Marks

Illustrated by Rudolph Palais

April 18, 1956

DEAR BEN: It breaks my heart you didn't sign on for this trip. Your replacement, who *calls* himself an ichthyologist, has only one talent that pertains to fish —he drinks like one. There are nine of us in the expedition, and every one of us is fed up with this joker, Cleveland, already. We've only been on the island a week, and he's gone native, complete with beard, bare feet and bone laziness. He slops around the lagoon like a beachcomber and hasn't brought in a decent specimen yet.

The island is a bit of paradise, though. Wouldn't be hard to let yourself relax under the palms all day instead of collecting blisters and coral gashes out in the bright sun of the atoll. No complaints, however. We aren't killing ourselves, and our little camp is very comfortable. The portable lab is working out fine, and the screened sleeping tenthouses have solved the one big nuisance we've suffered before: *Insects.* I think an entomologist would find more to keep him busy here than we will.

Your ankle should be useable by the time our next supply plane from Hawaii takes off. If you apply again at the Foundation right now I'm sure Sellers and the others will help me get rid of Cleveland, and there'll be an open berth here.

Got to close now. Our amphib jets off in an hour for the return trip. Hope this note is properly seductive. Come to the isles, boy, and live!—Cordially, Fred

May 26, 1956

DEAR BEN: Now, aren't you sorry you didn't take my advice?!!!! I'm assuming you read the papers, and also, that too tight

a censorship hasn't clamped down on this thing yet. Maybe I'm assuming too much on the latter. Anyhow, here's a detailed version from an actual eyewitness.

That's right! I was right there on the beach when the "saucer" landed. Only it looked more like a king-size pokerchip. About six feet across and eight inches thick with a little hemispherical dome dead center on top. It hit offshore about seventy-five yards with a splash that sounded like a whale's tail. Jenner and I dropped our seine, waded to shore and started running along the beach to get opposite it. Cleveland came out of the shade and helped us launch a small boat.

We got within twenty feet of the thing when it started moving out, slowly, just fast enough to keep ahead of us. I was in the bow looking right at it when the lid popped open with a sound like a cork coming out of a wine bottle. The little dome had split. Sellers quit rowing and we all hit the bottom of the boat. I peeked over the gunwale right away, and it's a good thing. All that came out of the dome was a little cloud of flies, maybe a hundred or so, and the breeze picked them up and blew them over us inshore so fast that Cleveland and Sellers never did see them.

I yelled at them to look, but by then the flies were in mingling with the local varieties of sudden itch, and they figured I was seeing things. Cleveland, though, listened with the most interest. It develops that his specialty *is* entomology. He took this job because he was out of work. Don't know how he bluffed his way past the Foundation, but here he is, and it looks like he might be useful after all.

He was all for going ashore, but Sellers and I rowed after the white disk for awhile until it became apparent we couldn't catch it. It's a good thing we didn't. A half hour later, Olafsen caught up to it in the power launch. We were watching from shore. It was about a half mile out when Ole cut his speed. Luckily he was alone. We had yelled at him to pick us up and take us along, but he was too excited to stop. He passed us up, went out there and boom!

It wasn't exactly an A-bomb, but the spray hit us a half mile away, and the surface wave swamped us.

Sellers radioed the whole incident to Honolulu right away, and they are sending out a plane with a diver, but we don't think he'll find anything. Things really blew! So far we haven't even found any identifiable driftwood from the launch, let alone Ole's body or traces of the disk.

Meanwhile, Cleveland has come to believe my story, and he's out prowling around with an insect net. Most energy he's shown in weeks.

MAY 28—Looks like this letter will be delayed a bit. We are under quarantine. The government plane came this morning. They sent along a diver, two reporters and a navy officer. The diver went down right away, but it's several hundred feet deep out there and slants off fast. This island is the tip of a sunken mountain, and the diver gave up after

less than an hour. Personally I think a couple of sharks scared him off, but he claims there's so much vegetable ruck down there he couldn't expect to find anything smaller than the launch's motor.

Cleveland hasn't found anything unusual in his bug net, but everyone is excited here, and you can guess why.

When the "saucer" reports stopped cold about a year ago, you'll remember, it made almost as much news for a while as when they were first spotted. Now the people out here are speculating that maybe this disc thing came from the same source as the *saucers,* after they had a chance to look us over, study our ecology and return to their base. Cleveland is the one who started this trend of thought with his obsession that the flies I reported seeing are an attack on our planet from someone out in space.

Commander Clawson, the navy officer, doesn't know what to think. He won't believe Cleveland until he produces a specimen of the "fly-from-Mars", but then he turns around and contradicts himself by declaring a temporary quarantine until he gets further orders from Honolulu.

The reporters are damned nuisances. They're turning out reams of Sunday supplement type stuff and pestering the devil out of Sparks to let them wire it back, but our radio is now under navy control, too.

Sure is crowded in the bunkhouse with the six additional people, but no one will sleep outside the screen.

MAY 29—Cleveland thinks he has his specimen. He went out at dawn this morning and came in before breakfast. He's quit drinking but he hasn't slept in three days now and looks like hell. I thought he was getting his fancy imagination out of the bottle, but the soberer he got the more worried he looked over this "invasion" idea of his.

Now he claims that his catch is definitely a sample of something new under our particular sun. He hustled it under a glass and started classifying it. It filled the bill for the arthopods, class Insecta. It looked to me, in fact, just like a small, ordinary blowfly, except that it has green wings. And I mean *green,* not just a little iridescent color.

Cleve very gently pulled one wing off and we looked at it under low power. There is more similarity to a leaf than to a wing. In the bug's back is a tiny pocket, a sort of reservoir of the green stuff, and Cleve's dissection shows tiny veins running up into the wings. It seems to be a closed system with no connection with the rest of the body except the restraining membrane.

Cleveland now rests his extra-terrestrial origin theory on an idea that the green stuff is chlorophyll. If it is chlorophyll, either Cleve is right or else he's discovered a new class of arthropods. In other respects the critter is an ordinary biting and sucking bug with the potentials of about a deerfly for making life miserable. The high-power lens showed no sign of unusual or malignant microscopic life inside or out of the thing. Cleve can't say

how bad a bite would be, because he doesn't have his entomologist kit with him, and he can't analyze the secretion from the poison gland.

The commander has let him radio for a botanist and some micro-analysis equipment.

Everyone was so pitched up that Cleve's findings have been rather anti-climactic. I guess we were giving more credence to the space-invader theory than we thought. But even if Cleve has proved it, this fly doesn't look like much to be frightened over. The reporters are clamoring to be let loose, but the quarantine still holds.

JUNE 1—By the time the plane with the botanist arrived we were able to gather all the specimens of *Tabanidae viridis* (Cleveland's designation) that he wanted. Seems like every tenth flying creature you meet is a green "Tabby" now.

The botanist helped Cleve and me set up the bio kit, and he confirmed Cleve's guess. The green stuff is chlorophyll. Which makes Tabby quite a bug.

Kyser, the youngest reporter, volunteered to let a Tabby bite him. It did without too much coaxing. Now he has a little, itchy bump on his wrist, and he's happily banging away at his typewriter on a story titled, "I Was Bitten by the Bug from Space!" That was hours ago, and we haven't learned anything sinister about the green fly except that it does have a remarkable breeding ability.

One thing the reporter accomplished: we can go outside the screened quarters now without wondering about catching space-typhus.

JUNE 2—The quarantine was probably a pretty good idea. Cleve has turned up some dope on Tabby's life cycle that makes us glad all over that we are surrounded by a thousand miles of salt water. Tabby's adult life is only a couple of days, but she is viviparous, prolific (some thousand young at a sitting), and her green little microscopic babies combine the best survival features of spores and plankton, minus one: they don't live in salt water. But they do very well almost anyplace else. We have watched them grow on hot rocks, leaves, in the sand and best of all, filtered down a little into the moist earth.

They grow incredibly fast with a little sun, so the chlorophyll is biologically justified in the life-cycle. This puzzled us at first, because the adult Tabby turns into a blood-sucking little brute. Deprived of any organic matter, our bottled specimens die in a short time, in or out of the sunlight, indicating the green stuff doesn't provide them with much if any nourishment after they are full-grown.

Now we are waiting for a supply of assorted insecticides to find the best controls over the pests. The few things we had on hand worked quite well, but I guess they aren't forgetting our sad experience with DDT a few years back.

The Tabbies now outnumber all the other insects here, and most outside work has been halted. The

little green devils make life miserable outside the tent-houses. We have built another screened shelter to accommodate the latest arrivals. We are getting quite a fleet of amphibian aircraft floating around our lagoon. No one will be allowed to return until we come up with all the answers to the question of controlling our insect invasion.

Cleveland is trying to convince Sellers and the commander that we should get out and send in atomic fire to blow the whole island into the sea. They forwarded his suggestion to the U. N. committee which now has jurisdiction, but they wired back that if the insect is from space, we couldn't stop other discs from landing on the mainlands. Our orders are to study the bug and learn all we can.

Opinion is mixed here. I can't explain the flying disc unless it's extraterrestrial, but why would an invader choose an isolated spot like this to attack? Cleve says this is just a "test patch" and probably under surveillance. But why such an innocuous little fly if they mean business?

The newsmen are really bored now. They see no doom in the bugs, and since they can't file their stories they take a dim view of the quarantine. They have gotten up an evening fishing derby with the crew members of the planes. Have to fish after dusk. The Tabbies bite too often as long as the sun is up.

Cleve has turned into a different man. He is soft-spoken and intense. His hands tremble so much that he is conducting most of his work by verbal directions with the botanist and me to carry them out. When his suggestion about blowing up the atoll was turned down he quit talking except to conduct his work. If things were half as ominous as he makes out we'd be pretty worried.

JUNE 4—The spray planes got here and none too soon. We were running out of drinking water. The Tabbies got so thick that even at night a man would get stung insane if he went outside the screen.

The various sprays all worked well. This evening the air is relatively clear. Incidentally, the birds have been having a feast. Now the gulls are congregating to help us out like they did the Mormons in the cricket plague. The spiders are doing all right for themselves, too. In fact, now that we have sprayed the place the spiders and their confounded webs are the biggest nuisance we have to contend with. They are getting fat and sassy. Spin their webs between your legs if you stand still a minute too long. Remind me of real estate speculators in a land boom, the little bastardly opportunists. As you might gather, I don't care for brothers Arachnidae. They make everyone else nervous, too. Strangely, Cleveland, the entomologist, gets the worst jolt out of them. He'll stand for minutes at the screen watching them spin their nasty webs and skipping out to dejuice a stray Tabby that the spray missed. And he'll mutter to himself and scowl and curse them. It is hard to include them as God's creatures.

Cleve still isn't giving out with the opinions. He works incessantly and has filled two notebooks full of

data. Looks to me like our work is almost done.

AUGUST 7, Year of our Lord 1956—To whom it will never concern: I can no longer make believe this is addressed to my friend, Ben Tobin. Cleveland has convinced me of the implications of our tragedy here. But somehow it gives me some crazy, necessary ray of hope to keep this journal until the end.

I think the real horror of this thing started to penetrate to me about June 6. Our big spray job lasted less than 24 hours, and on that morning I was watching for the planes to come in for a second try at it when I noticed the heavy spider webbing in the upper tree foliage. As I looked a gull dove through the trees, mouth open, eating Tabbies. Damned if the webs didn't foul his wings. At first he tore at them bravely and it looked like he was trying to swim in thin mud—sort of slow motion. Then he headed into a thick patch, slewed around at right angles and did a complete flip. Instantly three mammoth spiders the size of my fist pounced out on him and trussed him up before he could tear loose with his feet.

His pitiful squawking was what made me feel that horror for the first time. And the scene was repeated more and more often. The planes dusted us with everything they had, and it cut down the Tabbies pretty well again, but it didn't touch the spiders, of course.

And then our return radio messages started getting very vague. We were transmitting Cleve's data hourly as he compiled it, and we had been getting ordinary chatter and speculation from the Honolulu operator at the end of our message. That stopped on the sixth of June. Since then, we've had only curt acknowledgements of our data and sign-offs.

At the same time, we noticed that complete censorship on news of our situation and progress apparently hit all the long-wave radio broadcasts. Up to that time the newscasts had been feeding out a dilute and very cautious pablum about our fight against Tabby. Immediately when we noticed this news blind spot Cleve went all to pieces and started drinking again.

Cleve, Sellers and I had the lab tent to ourselves, having moved our bunks in there, so we got a little out of touch with the others. It wasn't the way Sellers and I liked it, but none of us liked the trip from lab to living quarters any more, although it was only fifty feet or so.

Then Sparks moved in, too. For the same reason. He said it was getting on his nerves running back and forth to the lab to pick up our outgoing bulletins. So he shifted the generator, radio gear and all over to a corner of the lab and brought in his bunk.

By the tenth of June we could see that the spraying was a losing battle. And it finally took the big tragedy to drive home the truth that was all about us already. When the crew got ready to go out to their planes on the eleventh, everyone except the four of us in the lab tent was drafted to help clear webs between the tents and the

beach. We could hear them shouting from tent to tent as they made up their work party. We could no longer see across the distance. Everywhere outside, vision was obscured by the grayish film of webs on which little droplets caught the tropical sun like a million tiny mirrors. In the shade it was like trying to peer through thin milk, with the vicious, leggy little shadows skittering about restlessly.

As usual in the morning, the hum of the Tabbies had risen above the normal jungle buzzing, and this morning it was the loudest we'd heard it.

Well, we heard the first screen door squeak open, and someone let out a whoop as the group moved out with brooms, palm fronds and sticks to snatch a path through the nightmare of spider webs. The other two doors opened and slammed, and we could hear many sounds of deep disgust voiced amid the grunts and thrashings.

They must have been almost to the beach when the first scream reached us. Cleve had been listening in fascination, and the awful sound tore him loose of his senses. He screamed back. The rest of us had to sit on him to quiet him. Then the others outside all began screaming—not words, just shattering screams of pure terror, mixed with roars of pain and anger. Soon there was no more anger. Just horror. And in a few minutes they died away.

SELLERS and Sparks and I looked at each other. Cleve had vomited and passed out. Sparks got out Cleve's whiskey, and we spilled half of it trying to get drinks into us.

Sparks snapped out of it first. He didn't try to talk to us. He just went to his gear, turned on the generator and warmed up the radio. He told Honolulu what had happened as we had heard it.

When he finished, he keyed over for an acknowledgment. The operator said to hold on for a minute. Then he said they would *try* to dispatch an air task force to get us off, but they couldn't be sure just when.

While this was coming in Cleve came to his senses and listened. He was deadly calm now, and when Honolulu finished he grabbed the mike from Sparks, cut in the TX and asked, "Are they landing discs on the mainlands?"

The operator answered, "Sorry, that's classified."

"For God's sake," Cleve demanded, "if you are ready to write us off you can at least answer our questions. Are there any of the green sonsofbitches on the mainland?"

There was another little pause, and then, "Yes."

That was all. Sparks ran down the batteries trying to raise them again for more answers, but no response. When the batteries went dead he checked the generator that had kicked off. It was out of gasoline. The drums were on the beach. Now we were without lights, power and juice for our other radios.

We kept alive the first few days by staying half drunk. Then Cleve's case of whiskey gave out and we be-

gan to get hungry. Sparks and Sellers set fire to one of our straw-ticking mattresses and used it as a torch to burn their way over to the supply tent about thirty feet away. It worked fairly well. The silky webs flashed into nothing as the flames hit them, but they wouldn't support the fire, and other webs streamed down behind the two. They had to burn another mattress to get back with a few cases of food.

Then we dug a well under the floor of our tent. Hit water within a few feet. But when we cut through the screen floor it cost us sentry duty. We had to have one person awake all night long to stamp on the spiders that slipped in around the edge of the well.

Through all of this Cleveland has been out on his feet. He has just stood and stared out through the screen all day. We had to force him to eat. He didn't snap out of it until this morning.

Sparks couldn't stand our radio silence any longer, so he talked Sellers into helping him make a dash for the gas drums on the beach. They set fire to two mattresses and disappeared into the tunnel of burned webs that tangled and caved in behind them.

When they were gone, Cleveland suddenly came out of his trance and put a hand on my shoulder. I thought for a moment he was going to jump me, but his eyes were calm. He said, "Well, Fred, are you convinced now that we've been attacked?"

I said, "It makes no sense to me at all. Why these little flies?"

Cleve said, "They couldn't have done better so easily. They studied our ecology well. They saw that our greatest potential enemy was the insect population, and the most vicious part of it was the spider. *Tabanidae viridis* was not sent just to plague us with horsefly bites. Tabby was sent to multiply and feed the arachnids. There are durable species in all climates. And if our botanist were still alive he could explain in detail how long our plant life can last under this spider infestation.

"Look for yourself," he said pointing outside. "Not only are the regular pollenizing insects doomed, but the density of those webs will choke out even wind pollinated grains."

He stared down our shallow well hole and stamped on a small, black, flat spider that had slithered under the screening. "I suppose you realize the spiders got the others. Down here in the tropics the big varieties could do it by working together. Sellers and Sparks won't return. Sounds like they got through all right, but they'll be bitten so badly they won't try to get back."

And even as he spoke we heard one of the aircraft engines start up. The sound was muffled as under a bed quilt.

Cleve said, "I don't blame them. I'd rather die in the sun, too. The beach should be fairly clear of webs. We've got one mattress left. What do you say?"

He's standing there now holding the mattress with the ticking sticking out. I don't think one torch will get us through. But it will be worth a try for one more look at the sun.

• • • THE END

Strumming a harp while floating on a white cloud might be Paradise for some people, but it would bore others stiff. Given an unlimited chance to choose your ideal world, what would you specify—palaces or log cabins?

THE WORLDS of Joe Shannon

By Frank M. Robinson

Illustrated by Paul Orban

I'LL TAKE BEER, son, and thanks again for the offer. As you can see, I'm kinda down on my luck. I know what you're thinking, but I'm not really on the bum. I usually make out all right—nothing fancy, mind you, but it's a living. Odd jobs in the winter and spring, follow the harvests in the summer and fall. Things are slack right now.

You? Electronics, huh? Used to know a fellow in electronics . . .

His name was Joe Shannon, used to work for Stellar Electric up in Fremont. Young fellow, not more'n twenty-five or so. Rail thin, wispy hair, serious look—you know, the one suit, absent-minded type. Joe was a brain. A triple-A, gold-plated, genuine genius. Had a wife named Marge. Not beautiful but pretty and a nice figure and a cook you never saw the likes of. Like I say, she was married to Joe but Joe was married to his work and after you'd been around a while, you could tell there was friction.

But that ain't the beginning.

I suppose I'm partly responsible because it started when I was over for dinner one night. I had been working in the garden and doing odd jobs around the house that afternoon and I finagled it so I was invited for supper. Marge Shannon made chili that I just couldn't stay away from. Thick with beans and meat and easy on the spices so it wouldn't burn an old man's stomach.


PARADISE BOOTH
BOWLING
BILLIARDS

Joe and I had just gone into the living room—Marge stayed in the kitchen to do the dishes—and I was feeling stuffed and kinda sleepy. All of a sudden Joe says out of a clear blue sky: "Harry, this is a hell of a world we live in, isn't it?"

Now Joe had never struck me as being the unhappy type. He loved his work, he loved his wife (and just about in that order), and so far as I knew he didn't owe any money. So I tried to feel him out, to find out where the rub was.

"There's nothing wrong with the world, Joe," I says. "It's just the people in it."

He started methodically filling his pipe and tamping down the tobacco and not saying a word and I get the feeling that he's deadly serious about something.

"You're right," he says quietly. "It isn't the world, it's the people."

I sit there feeling puzzled but a lot less sleepy and finally I ask: "Anything wrong, Joe?"

He lights his pipe and settles back in the big, overstuffed easy chair with the flowered slip-cover that Marge made, still frowning. "It's an unhappy world," he repeats.

"It all depends on what side of the picture you want to look at," I says, trying to cheer him up. "Maybe you been reading too many newspaper headlines."

Joe wasn't listening. "What makes people unhappy, Harry?"

Now, son, there's a million things that make people unhappy. Given half the night, I could maybe list a couple of hundred. But to narrow it down to one or two, I couldn't do it. So I just shook my head and let Joe carry the ball.

"It's a complex world, Harry. A lot of people never adjust to it. Some of them turn the tables and try to adjust the world to them, which makes a lot of other people unhappy. No, I'd say there's a certain number of people who just don't fit in this world of ours. Maybe at a different time and on another world, they might fit. But they don't fit on this one, not right here and now."

THAT WAS a way of looking at it that I had never thought of before. And Joe had a point. Now you take old Barney Muhlenberg, the town drunk. I knew Barney when he was a boy, and a more sober, adventure-seeking young rascal you never saw. But by then all the frontiers had dried up, it was between wars, and the only adventure Barney could find was in the bottom of a bottle. Barney was one of those poor folks born fifty years too late.

Or you take Miss Alice Markey, the history teacher at Fremont High. She's an old spinster—frail, white-haired, and a little bit crabby now. You'd never believe it but she used to be the romantic type. Somehow, the right man just never came along, but she's never given up hoping either.

Sure, you wouldn't believe it to look at them. But that's how people are, down underneath. All dreams and wishful thinking.

"It's tough, Joe," I says, "but what can you do about it?"

It always seemed to me that you weren't going to help people by letting them fall asleep on a couch

at fifty dollars a nap and trying to convince them they should give up their dreams.

"You've got to give people something *positive!*" Joe says, hitting an end table with his fist so an ashtray jumps off.

I sat up and began to take notice. Once Joe had an idea, he usually did something about it.

"You got something in mind," I accused.

He stopped pacing and pointed his pipe at me like it was the working end of a twenty-two rifle. "I got an idea, Harry," he says, the genius showing in his eyes like the dollar signs in a cash register. "I'm going to make a machine during my vacation and . . ."

And then Marge is in the doorway, dishtowel in her hand and little anger spots in her cheeks. "Joseph Shannon!" she says, stamping her foot. "You know perfectly well what we're going to do and where we're going to go on your vacation!"

Joe's mouth got set and I could see a storm blowing up so I struggled to my feet and got my hat. "That was awful nice chili, Missus Shannon," I says, and it isn't much more than two seconds later when I'm out the front door and walking up the sidewalk.

WELL, Joe—stubborn Irishman that he was—stayed right in town during his vacation. He had a laboratory in the basement and every day when I went by I could hear him and Wally Claus, his assistant, working down there, hammering and nailing and running electric motors that spat sparks and whined worse'n two alley cats fightin' in a fish market.

On the day that it's finished, Joe invites me over for dinner again. After the meal's over—and Joe's so anxious that he don't even tell Marge how nice the tuna fish casserole was—we go down into the basement. Marge doesn't come along.

"What's the matter with Marge?" I ask. "Ain't she interested?"

Joe jams his hands in his pockets, scowls, and says: "We've been having a little trouble, Harry. She doesn't see things my way."

It isn't any of my business so I clam up and walk over to where the whole front half of the basement is curtained off with a couple of old sheets and a drawstring.

"This is it," Joe says proudly, pulling on the drawstring. "The greatest invention since the wheel!"

Well, to tell you the truth, son, I was kinda disappointed. I had expected something big and shiny but what there was looked a little like a cross between a phone booth and one of those things in train stations where you take your own photograph. I looked inside and all I could see was a big screen in front, like on a television set, a coin slot, and a funny looking hat with a cable leading out of it.

"It's real nice," I says, not actually knowing whether it was or not. "What is it?"

"I call it a *Paradise* booth," Joe says.

I took another look at the machine, and then looked at Joe. It occurs to me that maybe he's been

working too hard or that arguments with Marge have sorta unsettled him.

"Look, Harry," Joe says, "remember when we were talking about all the people who didn't fit in this world?"

"Sure I remember," I says. "What's this got to do with it?"

"What if people could choose the type of world they wanted to live in?"

I looks at him blankly. "I don't get it."

He fishes around for his pipe and lights up. "How big's the universe, Harry?"

"Now, son, I got no idea how big the universe is and I says so. All I know is that it's *big*.

"Most scientists say the universe is infinite," Joe explains. "And if it's infinite, then it must have an infinite number of worlds in it. An actual world to match whatever kind of world you can dream up, let's say. All you have to do is step into the *Paradise* booth, put on the cap, visualize the kind of world you want to live in so it shows on the screen, and off you go!"

"You're kidding," I says feebly. "You don't really mean it."

He taps me on the chest with his finger and says: "Yes, I do really mean it, Harry. I've tried it and it works!"

And there I thought I had him. "If you went off to another world," I says slyly, "just how did you get back?"

"Built myself another machine," he says promptly.

I snapped the trap shut. "Just picked this world out of all the millions there are? Just like that."

Joe grinned. "I just thought of the damndest world that I could, and here I was!"

Well, he had me. There wasn't much more I could say. Joe's idea, of course, was to build machines and put them on the street corners like you would newspaper stands. He figured that all the misfits and the unhappy people would sneak out and use them and *whisht,* off they'd fly to their own favorite world, leaving all us well-adjusted people behind. He even had a slogan figured out. *"Paradise—for only a quarter!"*

You see, he figured he'd have to charge a quarter not only to pay for the machines but because people are just naturally suspicious of anything they get for free . . .

JOE AND Wally Claus rigged up three of the machines and installed them on some of the better known street corners around Fremont. Joe had trouble getting a license to do it, but when he told the city fathers what the machines did, they figured the best way to discourage a crackpot was to let him go ahead and flop on his own.

And he came close to doing it. Those booths just sat on the street corners all summer and gathered dust. People called them Shannon's folly, which didn't help things with Marge any.

And then one day, Barney Muhlenberg disappeared. We thought he might have gotten drunk and fallen in the river and we spent a good two days dragging it. And then we looked in at his rooming house but we didn't find a thing ex-

cept thirty-nine empty bottles and a rusty opener.

It was Joe who first discovered what had happened. He got hold of me and we went down to the *Paradise* booth on the corner just opposite from Schultz's Bar and Grill. There was a quarter in the coin till and when I looked at the screen, I knew Barney had taken off.

Well, everybody's happy. Joe's glad that his machine has finally caught on, Barney is probably happy playing Cowboys and Indians even though he's way too old for it, and the town is happy because its worst sanitary problem has just eliminated itself.

The news gets spread around and everybody starts laying odds on who's gonna be the next to go. Nobody goes near the booths for about a week, and then the kids start passing around a rumor Saturday morning that Miss Alice Markey has submitted her resignation to the school board and is packing to leave town.

The town splits. Half the people figure she'll be sensible and leave by bus. The other half, myself included, station ourselves at the *Paradise* booth that's nearest to her apartment. Along about noon, Miss Alice shows up. She's pale and determined looking, all dressed up to travel. Her suitcase is leaking little bits and ends of clothing and over her shoulder she's got a knapsack with her lunch in it. Always practical, Miss Alice was.

"You aren't really thinking of leaving are you, Ma'm?" I ask, thinking it would be a shame for a good-hearted, hard-working school teacher like Miss Alice to leave Fremont.

"I'll thank you to mind your own business, young man!" she says coldly, and marches into the booth and pulls the curtain shut. A moment later I hear a coin drop, there's a flash of bright blue light, and then dead silence.

I was the nearest one so I lifts the curtain and peeks in. Miss Alice and her suitcase and knapsack have disappeared. I look at the screen even though nobody needs to tell me that Miss Alice Markey has whisked off to a world where all the men look like Rudolph Valentino and have a fondness for old-maid school teachers. Sure enough, I was right . . .

About mid-August, Joe comes around and he's looking mighty worried. "Harry," he says, "Wally Claus has disappeared."

I mull it over for a minute. "It can't be what you're thinking," I says. "Wally's one of the most normal men in town."

We go down to see Wally's wife and I begin to get the picture. Wally was one of those hard working, hard drinking Dutchmen with a family about three times as big as his salary. He worked at Stellar Electric with Joe and, like I say, sometimes he used to help Joe in his lab.

"When was the last time you saw Wally?" Joe asks gently.

Mrs. Wally is blubbering in her handkerchief and trying to hold a kid on her lap at the same time. Two more are hanging onto her chair, and about six others are standing around the room sucking their thumbs and looking wide-eyed at Joe and me.

"It was p-payday," she blurts, the

tears streaming down her fat cheeks. "Wally c-comes home drunk and all I do was quietly ask him for his paycheck. And that's the last I see of him. I d-don't know w-what got into him!"

Anybody with half an eye, I thought, could piece together what had happened. Wally probably had one or two at Schultz's bar and got to feeling sorry for himself and then when he got home, he walked into a hornet's nest. Nine kids bawling or running around and Mrs. Wally nagging the life out of him. He must have wondered if it was worth it, then found a quarter in his pocket and walked around the corner to the nearest *Paradise* booth. *Whisht*—and Wally's worries are a thing of the past.

Joe and I get the idea at the same time and we chase down to the nearest booth. I took one look at the screen and blushed. Wally had some pretty wild ideas.

On the way home, I tried to talk Joe into tearing the machines down. "How do you know where it's going to end, Joe?" I argues. "You can't tell who's well-adjusted and who isn't any more. And besides, some of those who ain't have contributed just as much to life as those who are. Maybe even more."

"I'm going to leave them up," Joe says grimly. "The world will be better off without a lot of neurotics running around."

"You won't think it over, Joe?"

"No," he says, "and to prove it, I'm going to spend the next two weeks in New York looking for backing to put up *Paradise* booths all across the country."

"What does Marge think?" I ask.

"Hang Marge!" he says.

Well, I just stood there in the middle of the block and watched him get smaller and smaller in the distance. I couldn't think of anything more to say and he wouldn't have listened to me anyways.

I packed and left town that same night. The strawberry season was just coming on and I ain't never missed a harvest yet.

ABOUT TWO WEEKS passed and I couldn't stay away any longer. I got back to town, took a look around, and then went down to the station to wait for Joe to come in on the flyer. I figured somebody ought to be there to break it to him gently.

He gets off the train looking happy and successful and I figure he's made arrangements to put a *Paradise* booth in every city, town, and crossroads in the nation.

"Why, hello, Harry," he says when he sees me, and gives me the old professional smile and handshake that really ain't the old Joe at all. "Any cabs around?"

"No, there ain't no cabs around."

Something in the way I says it makes him give me a sharp look. "How come? There's always a couple to meet the flyer."

"There ain't none this time," I says. "No cab drivers."

"No cab drivers?"

"Ain't no need for 'em any more," I says. "Ain't no people in town to use cabs. Town's empty. Everybody's gone."

He looks kinda green and says: "What do you mean, everybody's gone?"

I shrugs and starts walking back to town. "Everybody took off," I says. "Your *Paradise* booths were real popular."

He still looks blank so I give it to him straight. I had first thought about it when Wally Claus disappeared. It occurs to me then that everybody has times when they wish they could crawl out from under and quietly disappear. You see, Joe had assumed that some people were adjusted to society and some weren't. Well, actually *nobody* is, it's just a difference of degree.

Once Wally took off, it sorta burst the dam. More and more people sneaked into the booths, dropped in a quarter, and *whisht*—they were a billion miles away.

It was lonely and dark in town. No street lamps, of course. There was nobody down at the power plant to work the switches. And there weren't any lights in the houses 'cause there wasn't anybody around.

"I can't imagine *everybody* going," Joe says, biting his lip. "What about all the kids?"

"I kinda think they were among the first," I says. I waves at the starry sky. "There's probably a planet up there some place where there's nothing but hot rods and football stadiums. And I suppose there's one section of the universe fenced off for all the Junior Spacemen that'll be roaming around it."

Anybody you could think of mighta had a reason for leaving, I told him. The boys at Schultz's probably took off for a world where Marilyn Monroe has a thousand twin sisters; and Johnny Douglas, the ace at Kelly's Bowling Alley, is probably located on a world where it's impossible to bowl anything but a three hundred game.

By then, we were in front of Joe's house. It was as dark and curtained as the others.

THE HOUSE was empty. The blinds had been drawn, the dishes neatly stacked and put away, and a note left on the doorstoop telling the milkman not to bring any more milk.

The note to Joe was on the kitchen table. It was hard for Joe to read on accounta it was blurred in spots where Marge had been crying and the tears had fallen on the paper. It told Joe—among a whole mess of other things—that she thought she had married a man, not a radio set, and since everybody was using them she was going to visit a *Paradise* booth that night.

"What am I going to do?" Joe asks remorsefully.

"That's your problem," I says heartlessly, thinking of all the chili dinners that went with Marge. "You made the booths in the first place."

"Yeah, I know." He pulls out a wad of papers from his pocket and thumbs through them. "I got contracts here for a *Paradise* booth in every town over five thousand population. I could be a millionaire in a month."

"Joe," I says, suddenly frightened, "don't do it. Look what happened here in Fremont. Why man, if you put those things all over the country there wouldn't be a soul left in the United States after a month had gone by."

"You're right, Harry," he says. "Absolutely right." And he takes a cigarette lighter out of his pocket and sets fire to the papers and lets them burn 'til they're nothing but ashes.

"What are you gonna do with the booths in town?" I ask.

He goes down to the basement and comes up with a hatchet. "Come on," he says grimly. "I'll show you what I'm going to do with them!"

The first two we chop in small pieces until the walk is covered with cogs and wheels and smashed tubes and dials. We stop at the third one. That was the fanciest one of all, with the leather upholstery inside and the big red neon sign on top that you could read halfway across town.

Joe stares at it for a long minute, then makes up his mind. He fishes around in his pocket for a coin.

"What do you think you're going to do?" I asks, alarmed.

"I'm going to look for Marge," he says. "I need a vacation anyways."

"How you gonna find her, Joe?" I asks. "You don't even know what kind of a world to look for!"

"Yes, I do," Joe says wistfully. "It'll be the kind of world where Marge always wanted to spend a vacation. Some place like up in Massachusetts during the summer. White beaches, little wooden houses, fishing boats and lobster pots . . . She's described it to me so often I could picture it down to the last pebble on the beach."

He gets into the booth.

"Think you'll ever be back, Joe?" I asks.

He drops a quarter in the coin slot and a picture builds up on the screen of a beach with a little town in the distance.

"Sure," Joe says confidentially. "We'll be back." And then there's a flash of blue light and Joe's gone, too.

I hung around for a couple of days afterward but Joe and Marge never came back. I think he found her all right but Marge didn't want anything to do with the old world so they just stayed there.

And that's about all there is, son. Except I've often wondered what happened when strangers drove through and found Fremont a ghost town . . .

Now, lookahere, son, it's no cause for you to go calling me a liar just because you never heard of Stellar Electric and Fremont ain't listed on any map you've got. You didn't expect me to stay behind when everybody else had left, did you? I always had a hankerin' for a different type of world, too.

A world where a body didn't have to work so blamed hard and total strangers would be willin' to listen to my stories and buy me a beer . . .

• • • THE END

Personalities in Science

A Science Romance Began When Boy Met Flight

Theodore Von Karman

ROCKETS have existed for centuries as a primitive weapon, and many men have speculated on their possible use in carrying human beings to the stars. In practically all cases, such men have been laughed at as impractical dreamers. Today, however, rockets carrying instruments and animals can reach the heights of the stratosphere, guided missiles can come within inches of their pinpointed targets, jet planes can race through the air at twice the speed of sound and more, and the entire concept of interplanetary travel has become a seriously considered possibility rather than a vague dream. One of the men who deserves a great deal of credit for this change in the state of affairs is comparatively little known; his name is Theodore Von Karman.

It was not Von Karman's own idea to visit the small, laboriously cleared field which was serving as Paris' first airport in 1906. He'd heard about the successful powered flight made three years before by the Wright brothers in America, but he hadn't devoted too much thought to the subject. It was a young French newspaper woman, thrilled by the unusual assignment, who talked Von Karman into going with her to witness the first really long flight of an airplane. Whether she had any more personal motives for the invitation will never be known. It is certain, however, that the keen-eyed young man with the aquiline nose succumbed to her blandishments, saw his first plane in flight, and found his only true love. The romance of the air had caught him in its grip, and there is scarcely an aspect of the sciences of aeronautics and astronautics that hasn't profited from the love affair that ensued.

The nature of the air and the unknown rules governing its behavior

have been the main field of inquiry for Professor Von Karman ever since that day in 1906. The turbulence, eddies and invisible whirlpools of the air have tremendous effects on any object moving through this medium—a greater effect, even, than oceanic currents and tides have on the ships that sail the seas. Theodore Von Karman probed the turbulences, studied the vortex formations and developed the Theory of Vortex Streets, the actual mathematical formula for the effect of drag that these formations produce on objects present in the air. He studied not only the air and its behavior, but also the behavior of objects under the stresses and strains of high speed flight, and produced successful theories for the manufacture and design of planes that have revolutionized that industry with incredible speed in the short span of 50 years. Because of him mankind is flying higher, faster, farther, and more safely than even the most rabidly air-minded thought possible a short time ago.

He developed, almost single-handed the theory of the behavior of the boundary layers of air, the theory of buckling beyond the elastic limit, the theory of the deformation of curved pipes, and the non-linear theory of the stability of thin-walled shells. All of these govern the design of present-day aircraft.

BORN in Budapest in 1881, the son of a famed philosopher, he had received his mechanical engineering degree, taught in the schools, spent his compulsory year in the Austro-Hungarian army, and then taken a job as research engineer with a machine manufacturer in Budapest. After that fateful morning at the Issy-les-Moulineaux Airport, designing machinery held no charm for Theodore Von Karman. With scarcely decent haste he quit his job and enrolled at the University of Göttingen in Germany as a graduate student, and won his Ph.D. and a place on the teaching staff after two years of studying mathematics, physics, and mechanics. Max Born, the great physicist, was on the faculty at Göttingen and his interest in Von Karman's ability in theoretical physics was so great that the two men worked together for some time. The first modern theories of the specific heats of solids were the results of this collaboration.

With the exception of time spent as head of research in the Austro-Hungarian Aviation Corps during World War I, he spent the years from 1912 to 1926 as director of the newly erected Aeronautic Institute at Aachen, and as consultant to such famed aeronautical pioneers as Junkers, Zeppelin, and other German aircraft manufacturers. In 1926 the Guggenhein Foundation invited him to the United States for a visit and lecture tour. Between lectures he helped to construct the wind tunnel facilities at the Guggenheim Laboratories. Continuing on around the world after his stay in America, he introduced the first all-metal propeller and the first wind tunnel to Japan before returning to Aachen.

Since he established his permanent residence in California in 1930, the Guggenheim Aeronau-

tical Laboratory at Cal Tech under his direction has become tops in the field. The ground work for supersonic flight, a supersonic wind tunnel, and several far-sighted rocket projects were notable firsts in the field under his leadership. He was pioneering in the fields of rockets and jet propulsion long before they were thought feasible by military men.

During World War II, Von Karman headed the Scientific Advisory Group and was special consultant to General "Hap" Arnold of the Army Air Forces. He also worked with the Ordnance Corps on the initial development of long range rockets.

Despite his pioneering, and the proof his genius in his field, he was coldly turned down by numerous American manufacturing corporations when he tried to interest them in building and manufacturing rockets for the Army. To disprove the general notion that scientists are dreamers with no financial sense, and because he knew the Axis nations were far ahead of us in research on the use of rockets as weapons, he persuaded four of his associates from the California Institute of Technology to join him in a venture that the manufacturing brains of the nation had thought a "wild scheme." The five raised $8,700 among themselves and started the Aerojet Engineering Company at Azusa, Cal., with just five employees. In ten years the manufacture of the ten-inch thick by three-foot long rockets that help to get big, heavily laden planes off the ground had grown to a $25,000,000 business.

Theodore Von Karman, who in addition to his theoretical work is an ardent teacher, philosopher and historian, has retired from the presidency of Aerojet and remains on as chief research consultant. That way he is able to spend what leisure time he has after teaching pursuing his favorite hobbies—collecting antique furniture and adding to a collection of 16-mm films which spans thirty years. The only devotion that Theodore Von Karman has allowed himself beside the work he loves has been given to his sister, Dr. Josephine Von Karman, who was his inseparable companion until her death.

A CHAT WITH THE EDITOR

(Continued from page 3)

next few years to supplement diets in areas which are not now supplied with sufficient protein for minimum health requirements. And Japan itself may well be the country with the first wide-scale use of artificially-grown algae as food.

The advantages are clear: it's a chance to grow food containing no waste whatever, on land that is now and would otherwise remain completely useless for agriculture, on easily available inorganic chemicals. The first use of algae as food in the United States will probably be for fattening livestock, not human beings, but there's no reason to place the prediction made in our first paragraph outside the realm of possibility.

Pettigill was, you might say, in tune with the world. It wouldn't even have been an exaggeration to say the world was in tune with Pettigill. Then somebody struck a sour note . . .

TAPE JOCKEY

By Tom Leahy

THE LITTLE MAN said, "Why, Mr. Bartle, come in. This is indeed a pleasure." His pinched face was lighted with an enthusiastic smile.

"You know my name, so I suppose you know the *Bulletin* sent me for a personality interview," the tall man who stood in the doorway said in a monotone as if it were a statement he had made a thousand times—which he had.

"Oh, certainly, Mr. Bartle. I was informed by Section Secretary Andrews this morning. I must say, I am greatly honored by this visit, too. Oh heavens, here I am letting you stand in the doorway. Excuse my discourtesy, sir—come in, come in," the little man said, and bustled the bored Bartle into a great room.

The walls of the room were lined by gray metal boxes that had spools of reproduction tape mounted on their vertical fronts—tape recorders, hundreds of them.

"I have a rather lonely occupation, Mr. Bartle, and sometimes the common courtesies slip my mind. It is a rather grievous fault and I beg you to overlook it. It would be rather distressing to me if Section Secretary Andrews were to hear of it; he has a rather intolerant attitude toward such *faux pas*. Do you understand what I mean? Not that I'm dissatisfied with my superior—perish the thought, it's just that—"

"Don't worry, I won't breathe a word," the tall man interrupted without looking at the babbling fellow shuffling along at his side. "Mr. Pettigill, I don't want to keep you from your work for too long, so I'll just get a few notes and make up the bulk of the story back at the paper." Bartle searched the room with his eyes. "Don't you have a chair in this place?"

"Oh, my gracious, yes. There goes that old discourtesy again, eh?" the little man, Pettigill, said with a dry laugh. He scurried about the room like a confused squirrel

until he spotted a chair behind his desk. "My chair. My chair for you, Mr. Bartle!" Again the dry laugh.

"Thanks, Mr. Pettigill."

"Arthur. Call me Arthur. Formality really isn't necessary among Mid Echelon, do you think? Section Secretary Andrews has often requested I call him Morton, but I just can't seem to bring myself to such informality. After all, he is Sub-Prime Echelon. It makes one uncomfortable, shall we say, to step out of one's class?" He stopped talking and the corners of his mouth dropped quickly as if he had just been given one minute to live. "You —you *are* only Mid Echelon, aren't you? I mean, if you are Sub-Prime, I shouldn't be—"

"Relax, Mr. Pettigill—'Arthur' —I *am* Mid Echelon. And I'm only that because my father was a man of far more industry than I; I inherited my classification."

"So? Well, now. Interesting—very. He must have been a great man, a great man, Mr. Bartle."

"So I am told, Arthur. But let's get on with it," Bartle said, taking some scrap paper and a pencil stub from his tunic pocket. "Now, tell me about yourself and the Melopsych Center."

"Well," the little man began with a sigh and blinked his eyes peculiarly as though he were mentally shuffling events and facts like a deck of cards. "Well, I—my life would be of little interest, but the Center is of the utmost importance. That's it—I am no more than a physical extremity that functions in accord with the vital life that courses through the great physique of the Center! No more—I ask no more than to serve the Center and in turn, my fellow citizens, whether they be Prime, Sub-Prime, Mid, or even Sub-Lower!"

He stopped speaking, affecting a martyr-like pose. Bartle covered a smile with his hand.

"Well, Bartle, as you know, the Center—the Melopsych Center, a thoroughly inadequate name for the installation I might say—is the point of broadcast for these many taped musical selections contrived by Mass Psych as a therapeutic treatment for the various Echelon levels. It is the Great Psychiatrist—the Father Confessor. For where can one bare one's soul, or soothe one's nerves and disposition frayed by a day's endeavor, better than in the tender yet firm embrace of music?"

BARTLE was straining to follow the train of thought that was lost in the camouflage of Pettigill's flowery phraseology.

"You see all about you these many recorders, Mr. Bartle?"

Bartle nodded.

"On those machines, sir, are spools of tape. Music tapes, all music. My heavens, every kind: classical music, jazz, western, all kinds of music. Some tapes are no more than a single melodious note, sustained for whatever length of time necessary to relax and please the Echelon level home it is being beamed to. Oh, I tell you, Mr. Bartle, when the last tape has expended itself for the day, as our service code suggests, I leave this great edifice with a feeling of profound pride in the fact that I have so served my

fellow man. You share that feeling too, don't you Mr. Bartle?"

Bartle shrugged. Pettigill paused and looked at the watch he carried on a long chain attached to a clasp on his tunic.

"A Benz chronometer, given to me by Section Secretary Andrews on the completion of my twenty-five years of service. It's radio-synchronized with the master timepiece in Greenland. It gives me a feeling of close communion with my superiors, if you understand what I mean."

Bartle did not. He said, "Am I keeping you from your work? If I am, I believe I can fill in on most of this back at the paper; we have files on the Center's operation."

The little man hurriedly put out a hand to restrain Bartle who was easing out of the chair.

"Not yet, Mr. Bartle," he said, suddenly much more sober. Then his incongruous pomposity appeared again. "My gracious, no, you aren't keeping me from my work. I just must start the Mid-Lower Echelon tape. It won't take a moment. Tonight, they receive 'Concerto For Ass's Jawbone.' Sounds rather ridiculous, doesn't it? Be that as it may, there is a certain stimulation in its rhythmic cacophony. Aboriginality—yes, I would say it arouses a primitive exaltation."

He flicked a switch above the recorder, turned a knob, and pressed the starter button on the machine. The tape began winding slowly from one spool to another.

"Is it 'casting'?" Bartle asked. "I don't hear a thing."

Pettigill laughed. "My stars, no; you can't hear it. See—" He pointed at a needle doing a staccato dance on the meter face of the machine. "That tells me everything is operating properly. Mass Psych advises us never to listen to 'casts. The selections were designed by them for specific social and intellectual levels. It could cause us to experience a rather severe emotional disturbance."

A peculiar look came over Bartle's face. "Is there ever a time when all the machines run at once? That is, when every Echelon home is tuned to the melopsych tapecasts?"

Pettigill registered surprise. "Why, certainly, Mr. Bartle. Don't you know Amendment 34206-B specifically states that all Echelon homes must receive music therapy at 2300 hours every night? Of course, different tapes to different homes."

"That's what I mean."

'Haven't you been abiding by the directive, Mr. Bartle?"

"I told you I owed my classification to my father's industry. I am definitely lax in my duties."

Pettigill laughed—almost wickedly, Bartle thought.

"What I'm getting at, is," Bartle continued, "what if the wrong 'casts were channeled into the various homes?"

"I remind you, sir, I am in charge of the Center and have been for thirty years. Not even the slightest mistake of that nature has ever occurred during that time!"

"That, I can believe, Pettigill," Bartle said, his voice edged with sarcasm. "But, hypothetically, if it were to happen, what would the re-

action be?"

The little man fidgeted with his watch chain. Then he leaned close to Bartle and said in a barely audible whisper, "This isn't for publication in your article, is it?"

"You don't think the Government would allow that, do you? No, this is to satisfy my own curiosity."

"Well, since we're both Mid Echelon—brothers, so to speak—I suppose we can share a secret. It will be disastrous! I firmly believe it will be disastrous, Mr. Bartle!" He moved closer to the tall man. "I recall a secret administrative directive we received here twenty years ago concerning just that. In essence, it stated that, though music therapy has its great advantages, if the pattern of performance were broken or altered, a definite erratic emotional reaction would develop on the part of the citizens! That was twenty years ago, and I shudder to think what might be the response now; especially if the 'cast were completely foreign to the recipient." He gave a little shudder to emphasize the horror of the occurence. "It would make psychotics of the entire citizenry! That's what would happen—a nation of psychotics!"

"The fellow who didn't hear the 'miscast' would be top dog, eh, Pettigill? He could call his shots."

PETTIGILL twirled the watch chain faster between a forefinger and thumb. "No, he'd gain nothing," he said, staring as though hypnotized by the whirling, gold chain. "It would take more than one *sane* person to control the derelict population. Perhaps—perhaps two," he mumbled. "Yes, I think perhaps two could."

"You and who else, Pettigill?"

Pettigill stepped back and drew himself erect. "What? You actually entertain the idea th—" He laughed dryly. "Oh, you're pulling my leg, eh, Mr. Bartle."

"I suppose I am."

"Well, such a remark gives one a jolt, if you know what I mean. Even though we are speaking of a hypothetical occurence, we must be cautious about such talk, Mr. Bartle. Although our government is a benevolent organization, it *is* ill-disposed toward such ideas." He cleared his throat. "Now, is there anything else I can tell you about the Center?"

Bartle arose from the chair, stuffing the scrap paper and unused pencil back in his pocket. "Thanks, no," he said, "I think this'll cover it. Oh yes, the article will appear in this Sunday's edition. Thanks, Pettigill, for giving me your time."

"Oh, I wish to thank you, Mr. Bartle. Being featured in a *Bulletin* article is the ultimate to a man such as I—a man whose only wishes are to serve his country and his brothers."

"I'm sure you're doing both with great efficiency," Bartle said as he apathetically shook Pettigill's hand and started toward the door.

"A moment, Mr. Bartle—" the little man called.

Bartle stopped and turned.

"I perceive, Mr. Bartle, you are a man of exceptional ability," Pettigill said and cleared his throat. "It seems a shame to waste such talent; it should be directed toward some definite goal. Do you understand

what I mean? After all, we're all brothers, you know. It would be for my benefit as well as yours."

"Sure, sure, 'brother'," Bartle snorted and left.

He started for the paper office but decided to let the story go until morning. What the hell, he had a stock format for all such articles. The people were the same: selfless, heroic type, citizens working for the mutual good of all. Only the names were different. And yet, this Pettigill had disturbed him. Perhaps it was something he had said that Bartle could not remember.

HE WALKED into his warm flat and extracted the pre-cooked meal from the electroven. He ate with little relish, abstractly thinking of the foolish little cog in the governmental machine he had talked with that afternoon. Or was Pettigill that foolish little cog? Bartle could not help but feel there was something deep inside him that did not show in that wizened and seemingly open little face. He thought about it the rest of the evening.

He looked at the clock on the night table—2300 hours. "Pettigill's Lullaby Hour," he thought. Bartle chuckled and switched off the bed light. He was asleep before the puffs or air had escaped from under the covers he pulled over himself.

When the phone rang at 0300, Bartle was strangely not surprised, although, consciously, he was expecting no call.

"Hello," he said sleepily.

"Bartle? This is Pettigill." The voice *was* Pettigill's but the nervous, timid, quality was gone. " I assume you did not hear the 2300 'cast?"

"You assume correctly, Pettigill. What d'you want?"

"Come on over to the Center; we'll split a fifth of former Section Secretary Andrews' Scotch."

"What the hell do you mean?"

"Were you serious about that 'therapy revolution' we were talking about this afternoon?"

"I'm always serious. So what?"

"Excellent, excellent," Pettigill laughed. "I've spent thirty years just waiting for such a man as you! No, I'm serious, my cynical friend —what position would you like in the new government?"

"Let's see—why don't you make my descendants real peachy happy and make me, say, Administrator of Civilian Relations. That sounds big and important."

"Fine, fine! Tell me, Bartle—how are your relations with psychotics?"

Bartle leaped to the floor. Instantly he recalled what Pettigill had said that had disturbed him. When they had been discussing the repercussions of a miscast, Pettigill had said, "it *will* be disastrous" and not "it *would* be disastrous." The devil had been planning just such a thing for God knows how long!

"How many of 'em, Pettigill?" Bartle asked.

"A lot, Bartle, a lot," the little man answered. "I would say 170 million! I might even say, a nation of psychotics!" He giggled again.

A smile sliced through Bartle's sallow cheeks. "My relations with them would be the best! Keep that Scotch handy, Pettigill. I'll be right over."

• • • THE END

After rescue, revenge was uppermost in Chet Barfield's mind; the hideous, bestial Agvars had to be taught a lesson they'd never forget. His rescuers seemed to disagree, however—until Chet learned his lesson too!

Uniform OF A Man

By Dave Dryfoos

Illustrated by Rudolph Palais

IN THE VILLAGE clearing, under the diffuse red sun of Hedlot, Chet Barfield listened intently. Mostly he heard the villagers, the Agvars, noisy with the disregard for sound that comes of defective hearing.

But above their clamor was another note. No . . . Yes! There it was again—the swish-roar-scream of a spaceship!

Chet's heart lifted to the altitude of that ship. Rescue! Rescue was at hand for him, after three years as a prisoner.

Thought of it momentarily overcame the passivity that years of starvation had made his habit. He even forgot himself enough to walk erect a few steps, staring skyward —heavenward!—within cupped hands.

But the dense hardwood chain on his ankle brought him up short. When it tightened, he remembered, and slouched to all fours again, moving with the gorilla-like gait of the Agvars toward the unshaded post he was chained to.

He'd been observed. Pawfulls of dirt stung his bent and whip-scarred back, and a treble chorus stung his ears and nerves. The village boys were chanting derisively. Chet had never been able to learn the language, but the tone of voice was unmistakable.

He huddled against the post, knees to chin, hands clasped around his matted hair, awaiting the inevitable sticks and slops. He heard the children's voices fade as they scattered throughout the village of haphazard lean-tos in search of

especially sickening things to throw. For a few minutes, then, he'd have a breather. But not for long—they wouldn't forget . . .

No. But the fellows hadn't forgotten him, either. He could stand this for a day or two more. A week or a month, even. It didn't matter. This would end—soon.

His turn would come! He'd make these devils suffer as he had suffered. He swore it!

He was glad he'd stayed alive for this. It had been a fight to live, a struggle he'd often thought futile while he made it. Learning to eat whatever he could get, training himself to breathe the local atmosphere in the special rhythm its composition required, accepting degradations too cruel for a captive animal, avoiding the resistance that would have brought merciful murder . . . All that, yet it felt strange, now, to be so glad he was alive.

He heard the children returning, and crouched lower. A few clots of garbage spattered against the post—teasers, to make him angry, so he'd turn to howl his rage, and offer his face as a target.

Good memories, these little beasts had. It was almost a year since he'd last done that . . .

Well, he had a memory, too. And while they pelted him—from fairly close range, now, with sharp rocks among the wads of filth—he could take refuge in the memory of those last glorious days on Earth.

REMEMBRANCE was itself a change brought by the roaring ship; usually he moped in a vegetative daze. But now he recalled how he'd looked in the tight white uniform: six feet of well-fed muscle accentuated by the garment's lines, the blue stars on each lapel just matching his eyes, the peak of his cap harmonizing with the straight line of his jaw.

He remembered how he'd sounded, speaking words of nonchalant and unfelt modesty in the soft Southern voice the girls had liked so well. He could have had his pick of girls. He'd been a picked man himself.

Highly selected—that was the phrase. He was highly selected, Chet reminded himself, shrinking as the children came closer and their missiles began to really hurt.

He'd been highly selected since his eighteenth year. At 25 he'd had seven years of pre-flight training—seven years of indoctrination specifically designed to give him self-confidence enough to face the void itself without flinching.

Now he flinched from children . . . Still, the schooling had worked, he acknowledged—so well that when their ship crashed into this planet Hedlot's salty sea, his first reaction had been indignation at the elements.

His second thought had been for his comrades. But they went down with the ship; he alone had been hurled clear. Learning that, he'd swum resolutely in the direction he knew the shore to be, and made it.

Exhausted, all right—shocked, naked, half-dead really. But quite ready to point out his rank and identity to the first passer-by.

Lucky for him, Chet mused, that he'd had no chance to express his callow arrogance. Shock saved his

life—sank him into a stupor, so when the Agvars found him, he was helpless. He knew it was only because it had seemed perfectly safe that they'd tied him up and brought him to the village, instead of killing him then and there.

By the time he'd recovered somewhat from the initial shock and exhaustion, they were used to him, convinced he was harmless if well chained-up. And they played it safe by giving him nothing but a little water—no clothing, no shelter, no food . . .

They let him live, amused by the thirst that drove him to lap up each morning's drenching dew, fascinated by his ravenous appetite for the garbage they flung at him.

The Agvars—furry, savage half-men, with something of the dog and something of the ape and little of the man about them—the Agvars let him live, Chet realized, for exactly one reason: he made them feel superior.

They'd learn now! Even though the children had stopped shrieking and gone away, disgusted at his passivity, no villager's insensitive ears could yet hear the ship.

In their boastfulness, the Agvars had invited other tribes to come and look at him and poke at him and laugh at him. His presence was known over the whole planet. He'd be found, no matter where on Hedlot the spaceship landed.

And then would come the showdown!

BUT THE showdown came earlier than he expected, speeded because the ship landed close by. Chet told himself he should have counted on that kind of accuracy, but he'd underestimated his fellow pilots.

He had himself signalled Earthside, just before the crash, that his ship was about to land. He'd given his position—described sea and shoreline. They'd find him, if he stayed chained to the post.

But he didn't. Taken unaware by the Agvars who loosed him, Chet was docile, happy even—certain they wouldn't hurt him now, but would try to minimize their former cruelty as they turned him over to the spacemen.

When they put new chains on him, around neck and waist, he thought it was only to make sure he didn't run away before they could deliver him ostentatiously to the ship.

A dozen adult males had gathered in the clearing, but that was hardly an unusual event. Even when they all started out, on a winding trail that didn't head in the direction of the ship's recent landing-sounds, Chet was convinced they were just circling some geographic obstacle.

He was interested in the forest of 20-foot mosses and 50-foot evergreen hardwoods pressing densely on each side of the trail. Unconscious when they'd carried him from the beach, he'd never been out of the village since, had never inspected these woods. And he thought his mates from Earth would want to know about them.

Chet could easily have outdistanced the clumsy Agvars if not forced to imitate their crouching walk. But he knew from experience

that to show off his erect stance and 18-inch height-advantage would make them find some unpleasant way to put him in his place.

They'd shown him that quite often. He'd show *them*—but later, not just yet. And after showing them, he'd put these Agvars behind him—them, their filthy planet, and their scorching sun.

It had often tortured him, that gauzy, amorphous solar blaze, but never more than now. For the sun of Hedlot, when he glanced at it vengefully, proved from its position that he was not being taken to the ship, but away from it.

DISAPPOINTMENT didn't rouse Chet to a fighting pitch—it caused him to become crafty. Slyness and deceit, the indirect weapons of the powerless, were not attributes schooled into a student space-pilot. But he'd learned them tied naked to a sunbaked post. That, too, is an effective school.

He hung back, faking fatigue. Malingering brought him pokes and jerks, made the Agvars choke him and beat him and harangue him in their sullen mutter of clicks and growls and glottal catches. But some sense of urgency drove them to give up their fruitless sadism after a while, and drag him through the trail's blue mud by brute strength, two on the neck-chain, two hauling at his waist.

He let them. Not that he was inured to pain—he just was stubborn.

He wondered, once when they all stopped at a spring for a drink and some rest, whether their harangu-ing showed the Agvars were sorry they hadn't taught him their language. Probably not, he decided; probably they didn't want to think he could have learned it.

He'd tried, in the absence of lessons, by repeating what he heard around him. He'd learned a few words, of course. And for a while, a couple of villagers had seemed to enjoy and encourage his parrot-like attempts to recite whole sentences they voiced for him. But after a few beatings, Chet gathered that he'd only been mouthing obscenities. And that experience, plus inertia, had made him give up the attempt.

Just as well, he now decided. If they'd known of his technical skills, if they'd let him raise their standards, the Agvars might be carrying bows and arrows, instead of mere slings and sticks.

Their hard luck! What they didn't know, they'd never learn from him! The mere presence of a spaceship on the same planet gave him a buoyant feeling of contempt.

But though contempt helped him endure that journey through the tall mosses and taller trees, it couldn't ward off exhaustion. When the party stopped at the foot of a sheer rock spire that rose four or five hundred feet above the tallest growth, he collapsed and slept.

THEY WOKE him in the predawn twilight and another group of Agvars took over. These—there were only three—looked older than the familiar villagers. And they'd smeared their faces with bands of red and yellow mud.

He wondered. . .

He stopped wondering when they passed a pile of bones at the base of the spire. Among the grisly relics were skulls—brow-ridged, pointed, unmistakably Agvar. Sacrifices!

He was to be killed, then, to propitate his own rescuers. His three guides—or guards—must be witch-doctors! He let them drag him along while he thought about it.

They'd give him no breakfast, not even water. If they'd eaten themselves, it was while he still slept. The scraps, if any, hadn't been flung in his face, and there'd been no smooth post to lick the dew from.

Hunger and thirst were nothing new, but neither was the resulting lethargy. Realizing his danger, Chet could only hang back.

Today though that was an old stall; the witch-doctors seemed to expect it. They broke branches from the trees and beat him till he bled. And when the climb up the rocks began, they put one of their number behind him to push, set the other two in front to pull, and tried by main strength to haul him up the five hundred foot rock-face.

Hazily, not hastily, Chet tried to think of a way out. His starved brain could come up with nothing. That, he finally decided, was only natural; it was not thinking that was needed, but action.

Still, he wasn't precipitate. Caution reinforced his habitual lassitude while trying to dispell it. Half a dozen times he tensed for combat, only to relax hopelessly. But finally he found a place—and the will—to make a stand.

He passed up a wide shelf, and let them tug him along a narrow ledge without much objection. He chose a near-vertical pitch about a hundred feet from the bottom—a mere crack that slanted upward to the right, offering the shallowest of hand-and foot-holds.

He could only hope that he wasn't in sight from the trail—or else that the villagers had left. He couldn't see through the treetops to make sure. But he hadn't the strength to worry.

He froze to the rock, pulling as if in fright. The two witch-doctors in single file above him jerked on the chains they held. But they needed a hand apiece to hold on with, and couldn't lift him.

The one below, standing on a six-inch ledge, tried to push. When that didn't work, he broke off a chunk of rock and beat Chet's left foot with it.

Spurred by the sudden pain, Chet kicked the witch-doctor in the face. The Agvar fell, screaming—until he crashed through the treetops and was still.

TO CHET, forgetful of his hearing superiority, it seemed as if that outcry would be heard on Earth itself. Certainly he expected it to alarm the countryside. Still, unless the swift foot-thrust had been seen, no one would be sure the witch-doctor's fall was not an accident. . .

Chet had tasted victory for the first time in three years! He'd had a little revenge, and he wanted more. He could take the other two

witch-doctors with him to death!

He put all his weight on the chains they held. But they chose not to die—let go, instead, to save themselves. The chain-ends rattled past, dislodging a small avalanche of dust and gravel and bruising stones—dislodging *him* when the full weights jerked at neck and waist.

Prepared, he didn't let himself be pulled away from the cliff's face. He slid down it to the ledge from which the Agvar below him had fallen. There he teetered a moment, balancing precariously on toes scraped raw in his slide. Clawing fingers found a crack to the right, a knob to the left—safety! He clung there breathless.

No time for resting! Rattling stones warned of pursuit. He looked quickly around, found a route, and after a short traverse let himself slide to a long talus-slope. Down it he ran barefoot through sharp debris into concealing mosses.

The silence alarmed him. But it freed him from the need for craft; he didn't know what to avoid nor where it might be lurking, so he set out for the spaceship by what he hoped was the shortest way.

In the village, he'd located the landing-place by sound, fixed it by sun. The sun would guide him now. Not accurately, but well enough.

The ship would have landed in a clearing. Standing on its tail, it should loom high over the woods. And its men would scatter—he ought to run into one.

Run he did, trotting under thirty pounds of hardwood chain on reserves of strength dredged from a deep pit of desperation, through a forest overgrown with menace, full of life he could always sense but seldom see—of noises whose origin he couldn't guess.

The Agvars, for all their inferior hearing, could at least interpret what they heard. Chet couldn't. Every whispered cry, wild grunt and muttered growl was completely unfamiliar. He didn't know which sound signalled danger. He feared them all.

But more than sounds he feared the silence that chinked the logs of time between each nerve-wracking noise. Often he had to stop and rest, and silence threatened him then like the ominous quiet of bated breath. When he'd force himself to go on, each tree seemed like a porchful of malicious old women, pretending to disregard him as he passed, certain to make trouble when he'd gone. The buzz of small life-forms was a deprecatory murmur, ready at any second to burst into condemnation and terror. . .

What was that sound? And that? Noises that seemed out of place in their familiarity pinned him to the forest floor.

It was only the village. Satisfied, he worked up courage to skirt the place and walk on toward the ship.

But he was near collapse. When he heard human voices he could only yell incoherently once or twice, sob, and pass out.

DIMLY through succeeding days Chet was aware of the ship's sickbay, of the enlisted attendants, the hovering doctor, the silent commander. Later he realized he'd been kept under opiates so his body

could recover while his mind rested. At the time, he felt only the dimness.

It wore off abruptly. He was in a civilized cot, stretching luxuriously, aware of warmth and comfort and a cheerful voice that seemed familiar.

He opened his eyes. A fat young corpsman had been watching.

"How do you feel, sir?" the boy said. "Ready for coffee?"

"Sure," Chet answered. And grinned lazily as he sat up to sip the proffered cup. "You've taken good care of me."

"Used to be a barber in civilian life," the boy said smugly. And Chet found with an exploratory hand that he'd been shaven and shorn, bathed, bandaged where necessary—even, he saw, clad in a pair of fancy red broadcloth pajamas.

"You've got me cleaned up, all right," he said. "Whose p.j.'s have I got on?"

"Dr. Pine's, sir. You'll see him in a couple of minutes—he and the Old Man been waiting to question you. There's a robe and slippers, if you want me to help you get up. . ."

"I'm not helpless," Chet said, boasting in his turn. He proved it by climbing—gingerly—out of the cot. The boy helped him into the robe, found the slippers, pushed the small room's one chair an inch closer to the open porthole, and left, closing the door behind him.

VAGUELY Chet found he knew the two men who soon entered the room—they'd been there before. But this was his first fully conscious look at them. Commander Seymour, the C.O., looked surprisingly young for his job. He *was* young, Chet decided—not over thirty-five—and his short slight figure made him seem younger still.

He had few words. "You're looking fine, Barfield," he said, and sat on the edge of the cot, thin face impassive, gray eyes alert.

Dr. Pine—tall, balding, affable—was associated in Chet's mind with hypodermic needles, bitter medicines, restrictions. Today, the doctor gave him a firm and friendly handshake, but yesterday, Chet felt, that same hand had inflicted pain.

"Glad to see you looking so well," the doctor said, taking a stance against the wall by the porthole. He sounded sincere enough, but Chet, resuming his chair, wondered how much of the gladness was based on the doctor's pride in professional handiwork.

There was an awkward pause. Chet remembered to murmur polite replies to the men who were so obviously sizing him up. Then he asked, "When do you think I'll be ready for duty?"

His visitors exchanged a glance. "Later," Commander Seymour said. "Take it easy while you can, Barfield." He smiled unconvincingly at what must have been meant as a joke.

Talk again lapsed, and Chet became uncomfortable. "The corpsman said you wanted to ask me some things," he said. And added, "You've already questioned me, haven't you?"

"Only a little," Dr. Pine said, flexing his long fingers and looking down at them. "We—ah—we had to find out about your shipmates. Commander Seymour wanted to look for them, naturally. . ."

Naturally. . . "Are we going to leave here now, sir?" Chet asked the commander.

"Not yet," he said. "Dr. Pine has a job to do."

"What's that, Doctor?"

"I'm going to study your Agvar friends, Mr. Barfield. Want to help?"

"Sure," Chet said. "There's nothing I'd rather do than bring you a few corpses to dissect."

"That—ah—that isn't the idea," Dr. Pine said, bending his fingers and rocking from toes to heels. "I—ah—I want to do a little anthropology—study them in the life. . ."

"Why?" Chet demanded. "I can tell you all about them. I can tell you what they did to me, too! They don't deserve to live! And this planet won't be safe for spacemen till they're dead. Why waste time studying them? It isn't as if you were a professional anthropologist, sir—didn't you give me medical care?"

"Yes. . . But I do anthopology, too. Medical help—ah—gains the confidence of the people. . . ."

"You mean—?" Chet was at first incredulous, then outraged. "You mean you're not going to punish them?"

"That's right," Dr. Pine said, smiling.

"That's wrong!" Chet contradicted.

Cheeks burning, he turned to Commander Seymour. "How about you, sir? Do you want your men chained to a post if they get captured? Do you want me to dismiss three years of torture as a mistake, or something? Do you want—"

"Here, here!" Commander Seymour said. He didn't raise his voice. But as he rose from the cot, Chet rose with him, and found himself at attention. They eyed each other.

"Relax," Dr. Pine suggested. "Please sit down—both of you."

Commander Seymour obeyed his subordinate. But Chet, still standing, still angry, turned hotly on the doctor.

"I can't just sit and let you talk about rewarding the Agvars for torturing me!" he cried. "We don't have to appease them—they can't fight. You don't have to be afraid—"

"That'll do, Barfield!" Commander Seymour was on his feet again, and his tone was sharp. It quieted Chet instantly.

In silence he watched Commander Seymour motion Dr. Pine to follow him out the door. Someone locked it after them.

ALTERNATELY tossing on the cot and pacing the floor, Chet seethed for hours. His first interview with the new C.O., and two bawlings-out in five minutes! Because of Pine—Pine, who kept him confined in this room, seeing no one but the attendants, having his meals alone. . .

When a day passed, and then two, and he felt his strength returning, Chet was sure that Dr. Pine kept him out of the wardroom and

away from the other officers only as punishment. Three years a prisoner—and a prisoner still! By the time Commander Seymour came to see him again, Chet had spent hours plotting revenge.

"Barfield," the commander said, "Dr. Pine is going—alone—to the village you escaped from. He'll pretend he's you, or someone like you—whichever he can get away with. So here's your chance for a little fresh air—you can guide us to the village."

"Does that mean I go on active duty, sir?"

"Not quite. Dr. Pine hasn't released you from sickbay."

Pine again! Pine found him good enough to imitate, it seemed, but not good enough to put on duty.

Suddenly Chet saw the possibilities. So Pine was going to impersonate him? Then Pine would be taken for an escaped sacrifice, a prisoner who'd killed a witch-doctor!

Tell him? Huh. Let him find out the hard way! Then even he, yellow as he was, would want revenge on the Agvars. If he survived their welcome. . .

"I'll be *glad* to go, sir," Chet said.

THEY BROUGHT him fatigues, not a dress uniform. But fatigues and shoes—even tight ones—were clothing, at least. And clothing would change his appearance. The Agvars had never seen him dressed, nor, since his first days, with a haircut and shave. Whether Pine's impersonation worked or not, Chet saw no danger for himself in approaching the village. But he wondered how it was to be managed.

He was told the plan when Commander Seymour and Dr. Pine met him outside by the ship's tail. The commander, who was armed, and the doctor, already naked except for a pair of slippers and a sunlamp tan, would go with him by the shortest route direct to the village. But only Dr. Pine would enter it.

Commander Seymour explained Chet's part—and his own. "Barfield," he said, "I want you to find and point out some kind of game animal they use for food. I count on killing something after we come under the Agvars' observation. That should show off our weapon-superiority—and pave the way for a feast."

"No medical stuff?" Chet asked sarcastically. "I thought Dr. Pine was supposed to cure all their ills, not give them indigestion."

"He has to get their confidence before he can treat them," Commander Seymour explained seriously. "And on a strange planet like this, he's taking quite a chance to try treatment at any time: if it fails, they're apt to accuse him of murder!"

Chet said nothing. But he felt as if he'd drawn a wild card in a poker game.

THEY'D ENTERED the woods. Even before that, Dr. Pine had lagged because his slippers kept falling off, and now he brought up the rear. Chet, in the lead, took a last long look at the ship before

the trees and mosses cut off his view.

He went on slowed by vague reluctance. He didn't like this forest. The trees dwarfed and oppressed him. Old fears began to stir and gnaw, but at new places.

Perhaps the two men he guided would stand together against him. If so, revenge on one would cut him off from both as sharply as the forest cut him off from the ship. . .

Well, it was worth it! They hadn't put him on duty, hadn't accepted him as one of themselves. . . He couldn't be cut off much more than he was already!

And Seymour might listen to reason. After all, he was a practical man, a leader. And Pine was yellow!

"What's Pine after, sir?" Chet asked over his shoulder. "Why take these risks you've mentioned?"

"Well, partly for safety: if we kill any Agvars, we're likely to have to kill them all, or have the survivors to contend with indefinitely. That might cost us some casualties. . . And of course there's the research angle, but that's out of my line."

"What's the matter with punishment, sir—discipline? You use discipline on your crew—why not on their enemies?"

"Because the men understand the rules and the penalties. The Agvars don't."

"Kill them, sir! That they'll understand!"

"No!" Commander Seymour spoke sharply. "If they don't fight back, that's cold-blooded slaughter. If they do, it's war. I don't hold with butchery, Barfield, and I certainly won't risk casualties just to give you a cheap feeling of satisfaction!"

He couldn't escape. Commander Seymour, looking from over Chet's shoulder like a walking sneer, stuck close. But he gave the impression of following a man who smelled bad.

Was he? Chet wondered.

Wondering, he unconsciously hung his head, slowed—stopped. Dr. Pine caught up. He and Commander Seymour, faintly breathless from the trying need to regulate their respiration consciously, looked at Chet questioningly.

Again they were sizing him up. Suddenly Chet wished he could go back to that first interview in the sickbay, and change all the things he'd said.

"We can't go on!" he blurted. "You don't know what you're getting into, Doctor!"

"Oh?" said Dr. Pine agreeably. "I know more than you think, young feller." He smiled encouragingly.

"That—that I've killed a witch-doctor? That you may be taken for a murderer?"

"Sure! You—ah—you talked about it under drugs. We . . . weren't spying, Chet. We just wanted you to tell your story without reliving all the agony. It wasn't intended as—ah—a trap. . ." He massaged his fingers apologetically.

"No. . ." Chet agreed. "But-I-was-trying-to-lead-*you*-into-one!"

HAD HE SAID that aloud? Chet couldn't be sure.

He listened for his own voice.

The woods were quiet. His breathing seemed strangely loud. He held it—and heard the Agvars moving in the woods. Rustling, scraping, crackling—grunting their guttural dialog. Crashing! Threatening them!

"Let's go back!" he urged, trying to sound casual. But his trail was blocked.

"Stick around," Dr. Pine suggested easily. "You — ah — you haven't said anything we didn't know. We're going right ahead."

"But why? Once more Chet was hotly incredulous. "To risk your life for a few stray facts? Become a casualty while trying to *avoid* casualties? It doesn't make sense!"

Dr. Pine stared at his own hands as if to hide his shyness in them. "As to the fact-seeking," he said slowly, "well . . . it's a matter of opinion. I've lost a few classmates. . . Risks in research are commonplace—and accepted as worthwhile by most people. . .

"And—ah—peace. . . You once called it appeasement, but it isn't, always. Well, look. If we fought those Agvars, somebody'd have to take a patrol into their village and capture prisoners for our Intelligence, right?"

Chet nodded dumbly.

"Well, in a way, I—ah—am the peaceful equivalent of that patrol. The—ah—risk I run is less than if we had a war and a patrol skirmish as part of it, though. And why in the world not take for peace a risk we'd routinely accept in war?"

Why not? But why not minimize it, just the same. The Agvars, invisible but noisy, were all around them, now. At any moment the woods might rain spears.

"It would be safer with two of us," Chet said musingly. "Your knowledge of anthropology and medicine—mine of the people—"

"Barfield, you're still on the sick-list," Commander Seymour pointed out. He watched Chet's face for a long moment before adding, "Still —if you're over your sick-minded need for revenge—it's possible Dr. Pine may find you fit. It's up to him."

Chet was afraid to ask directly. He pleaded with his eyes.

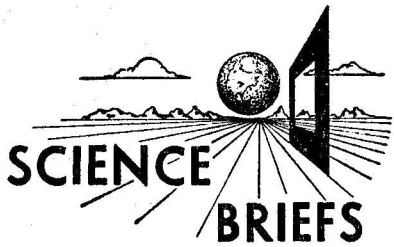
Dr. Pine grinned broadly at the both. "He's ready for duty," sir," he said.

Commander Seymour stepped back and scowled. "All right, Mr. Barfield," he barked, "I'll give you just three minutes to change to the uniform of the day!"

Chet's jaw dropped. His vision, also downcast, noted the fatigues he wore, the muddy shoes. Then he looked up, saw the twinkle in his C.O.'s eyes, and understood.

In exactly three minutes he made the required change. He would enter the village as he'd left it—in the undress uniform of a Man. . .

• • • THE END



The Electron Interferometer

UNTIL 25 years ago, there was still controversy about whether electrons consisted of particles or waves. Then two scientists named C. J. Davisson and L. H. Germer demonstrated that they have the nature of waves. They accomplished this by making electrons produce a diffraction pattern, one of the two methods by which light had been shown to consist of waves in earlier experiments.

In the case of light, this is done by passing a beam through a very narrowly spaced grating so that its waves alternately reinforce and cancel one another, forming a diffraction pattern of light and dark bands. Davisson and Germer used a crystal for their grating in the electron experiment, with similar results.

The second test originally devised for light used an interferometer, an instrument which splits a beam of light in two and forces one half to travel a longer route than the other. When the parts are reunited their waves are out of phase and the result is a pattern of interference fringes. It was difficult to apply this test to electrons, however, since their wavelength is only about one 100,000th that of light. Nevertheless, the task has now been accomplished, with a highly refined version of the interferometer, by a group of physicists at the National Bureau of Standards.

The heart of the electron interferometer is a series of three copper crystals only about four 10-millionths of an inch thick. A beam of electrons passed through these is split and then recombined. On emerging from the third crystal, it is made up of a pair of rays which have been differently diffracted. The difference in the length of the paths the rays must travel can be varied by moving the first crystal back and forth or by exposing the electrons to electric or magnetic fields within the instrument.

The electron interferometer is more than just a testing device for an already established theory, however. Its designers hope to improve on it so that it can be used as a measuring rod for various electric, magnetic and electronic purposes.

Sugar and Spice

YOU ARE more sensitive to bitter tastes than any others. Next strongest taste is sour, followed by salt, with sweet bringing up the rear. This has been discovered by food technologists at the University of California. They found that humans can detect sugar in the amount of one tablespoonful in two gallons of water and one tablespoon of salt in ten gallons of water. Hydrochloric acid (the sour taste) can be spotted even when one tablespoonful is mixed with 40 gallons of water, while the presence of a table-

spoon of quinine in 1,000 gallons of water is still noticeable. The scientists plan to continue these tests with various types of food.

No More Teeth?

IT'S VERY possible that there won't be a sound human tooth in the world by 3,000 A. D. The only hope that we'll keep our choppers lies in finding out what causes tooth decay and discovering means of preventing it. So says Prof. Reidar F. Sognnaes of the Harvard School of Dental Science, who urges the speeding up of research along these lines.

Many of our old theories about teeth have had to be changed recently as new evidence has come to light. Tooth enamel was long thought to be dead tissue, for instance. Now it is known that this substance contains several different kinds of living matter.

Dr. Sognnaes also recommends frequent brushing of the teeth, even though it is impossible to keep them perfectly clean—a person always has some micro-organisms and food debris in his mouth. "The most that can be said," he adds unhappily, "is that if we did not clean our teeth they would be worse than they are."

How long has it been since you've seen your dentist?

A-Bomb Precaution

BY THE TIME the next war strikes—if it does—military personnel and perhaps civilians may be equipped with small, easily worn devices that will accurately record the amount of radiation to which an atomic bomb casualty has been subjected. This potential life-saver is known as the dosimeter; it was designed by naval scientists and is being produced by the Corning Glass Works.

The dosimeter contains a piece of supersensitive silver-activated phosphate glass. Worn as a locket, the device permanently records the radiation received; the amount can be measured immediately or weeks after the exposure by use of a special reading instrument. When illuminated by ultra-violet light in this instrument, the phosphate glass emits fluorescent orange light in amounts proportional to the exposure the glass has taken in. Thus the proper medical treatment can be prescribed.

The dosimeter is noteworthy for the range of radiation it can measure: from doses as small as 10 Roentgens, which is well, below the danger limit, up to several thousand Roentgens.

How Old Are Your Arteries?

AN INTERESTING application of the radioactive tracer principle of medicine is now in use to warn patients of possible arteriosclerosis, heart attacks and apoplectic strokes. The test involves the use of a small amount of radioactive sodium injected into a vein in the arm. A Geiger counter is then placed over the subject's chest to measure the radioactivity as the substance passes through the bloodstream in that area. The time is checked when the level of radioactivity drops to a specific point, and this shows the rate of blood

flow through strategic blood vessels.

The critical level is reached in healthy 20-year old men in 20 seconds. The time is doubled at 40 years and tripled at 60. Patients suffering from arteriosclerosis will show the results normally expected of an older person.

The test, which takes only about 35 minutes in all, was devised by Dr. Enrique Strajman, a Brazilian scientist working at the Donner Laboratory of the University of California.

Up-To-Date Prospecting

SCINTILLATION detectors—supersensitive successors to Geiger counters—are being used by government and private industry to prospect for uranium by air. Although the method can't pinpoint the locations of uranium deposits exactly, both the Atomic Energy Commission and the Interior Department are having considerable success in finding clues to potential deposits this way.

The Interior Department uses instrument-equipped DC-3's, while the AEC flies in Piper Cubs at lower altitudes. Reactions of the detectors in each case are marked on paper tape, synchronized with 35-mm cameras that simultaneously map the areas being explored.

The aerial maps are posted as they are completed, with the sites of potential deposits clearly marked. Ground prospectors must take over from there, since the signs of radioactive deposits on the maps don't distinguish between those that are workable and those that are thin and valueless. Hundreds of independent prospectors are using the maps, which have been concentrated so far on the Colorado plateau and parts of South Dakota, New Mexico and Western Pennsylvania, in the hope of striking it rich through the high prices and bonuses the AEC pays for uranium ore.

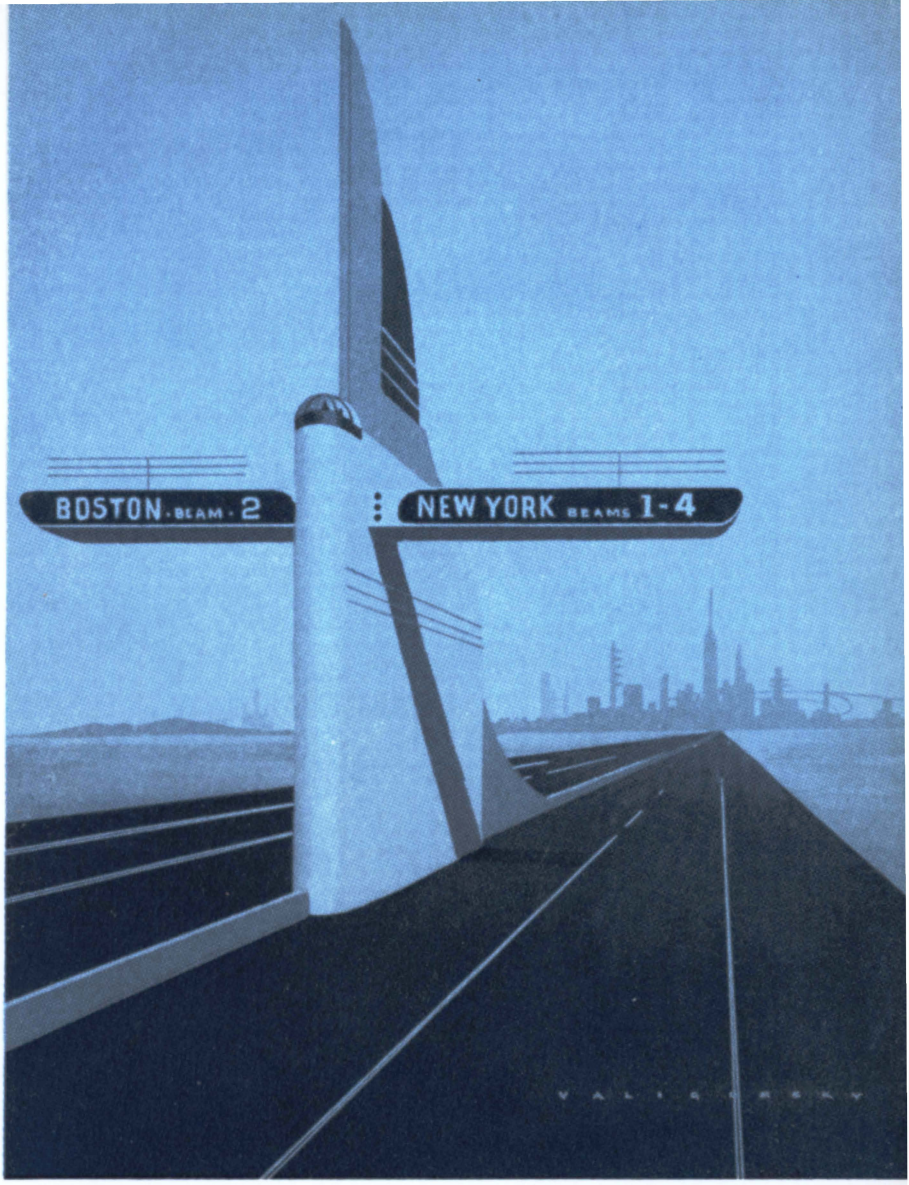
Number, Please?

THE DAY when you can pick up your telephone and dial a number anywhere on the continent is being hastened by the Bell Telephone System. A big step in the plan was taken recently in Pittsburgh where devices known as card translators were placed in regular service.

Card translators determine where dialed calls should go and route them there as directly and speedily as possible. If one path is busy, the machines will select the next best, making decisions in split seconds.

The card translator uses boxes containing 1,000 metal routing cards apiece—each card about five by 10½ inches. The cards have identifying tabs so that one will drop from the stack for any particular code that is dialed. Beams of light then pass through openings in or tabs on the card, falling on phototransistors which transmit the necessary signals to the rest of the equipment.

So you'll soon be able to call Aunt Minnie, who lives all the way across the country, as easily as the neighbors across the street!



TRAFFIC CONTROL STATIONS—Located at strategic points along elevated express highway, these stations will direct traffic through the electronic beams. They have complete control over all traffic at all times, speeding up or slowing down movement in individual lanes according to conditions. When driver reaches destination he switches to manual control and leaves beam. (Drawings by Ed Valigursky)