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by Rog Phillips

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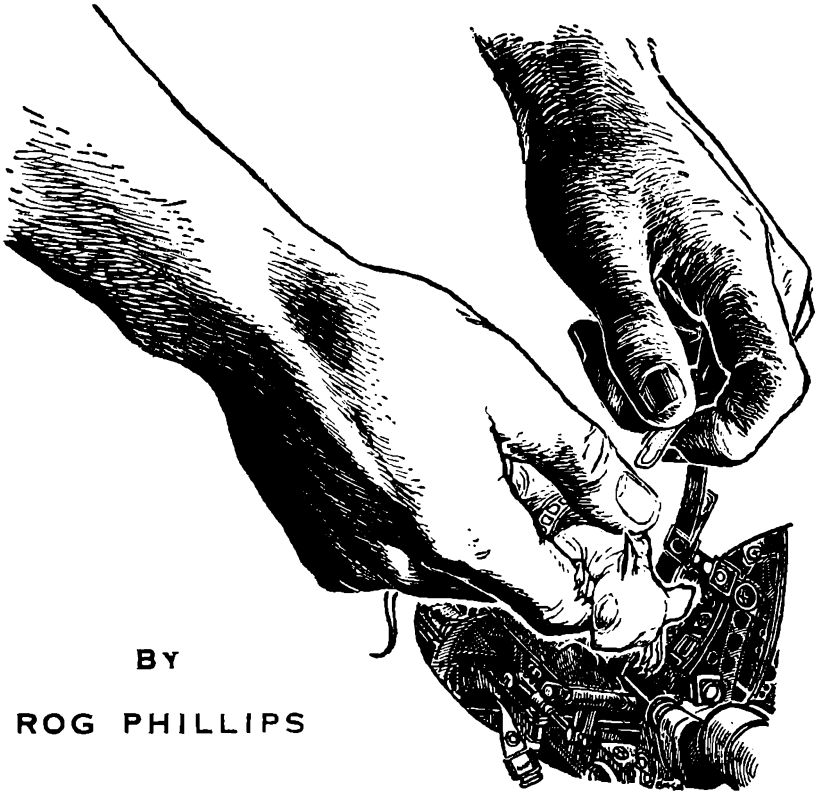

BY

ROG PHILLIPS

DR. JOSEPH MacNare was not the sort of person one would expect him to be in the light of what happened. Indeed, it is safe to say that until the summer of 1955 he was more "normal", better adjusted, than the average college professor. And we have every reason to believe that he remained so, in spite of having stepped out of his chosen field.

At the age of thirty-four, he had to his credit a college textbook on advanced calculus, an introductory physics, and seventy-two papers that had appeared in various jour-

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nals, copies of which were in neat order in a special section of the bookcase in his office at the university, and duplicate copies of which were in equally neat order in his office at home. None of these were in the field of psychology, the field in which he was shortly to become famous—or infamous. But anyone who studies the published writings of Dr. MacNare must inevitably conclude that he was a competent, responsible scientist, and a firm believer in institutional research, research by teams, rather than in private research and go-it-alone secrecy, the course he eventually followed.

In fact, there is every reason to believe he followed this course with the greatest of reluctance, aware of its pitfalls, and that he took every precaution that was humanly possible.

Certainly, on that day in late August, 1955, at the little cabin on the Russian River, a hundred miles upstate from the university, when Dr. MacNare completed his paper on *An Experimental Approach to the Psychological Phenomena of Verification*, he had no slightest thought of "going it alone."

It was mid-afternoon. His wife, Alice, was dozing on the small dock that stretched out into the water, her slim figure tanned a smooth brown that was just a shade lighter than her hair. Their eight-year-old son, Paul, was fifty yards upstream playing with some other boys, their shouts the only sound except for the whisper of rushing water and the sound of wind in the trees.

Some people will be shocked by this story. Others will be deeply moved. Everyone who reads it will be talking about it. Read the first four pages: then put it down if you can.

Dr. MacNare, in swim trunks, his lean muscular body hardly tanned at all, emerged from the cabin and came out on the dock.

"Wake up, Alice," he said, nudging her with his foot. "You have a husband again."

"Well, it's about time," Alice said, turning over on her back and looking up at him, smiling in answer to his happy grin.

He stepped over her and went out on the diving board, leaping up and down on it, higher and higher each time, in smooth coördination, then went into a one and a half gainer, his body cutting into the water with a minimum of splash.

His head broke the surface. He looked up at his wife, and laughed in the sheer pleasure of being alive. A few swift strokes brought him to the foot of the ladder. He climbed, dripping water, to the dock, then sat down by his wife.

"Yep, it's done," he said. "How many days of our vacation left? Two? That's time enough for me to get a little tan. Might as well make the most of it. I'm going to be working harder this winter than I ever did in my life."

"But I thought you said your paper was done!"

"It is. But that's only the beginning. Instead of sending it in for publication, I'm going to submit it to the directors, with a request for facilities and personnel to conduct a line of research based on pages twenty-seven to thirty-two of the paper."

"And you think they'll grant your request?"

"There's no question about it," Dr. MacNare said, smiling confidently. "It's the most important line of research ever opened up to experimental psychology. They'll be forced to grant my request. It will put the university on the map!"

Alice laughed, and sat up and kissed him.

"Maybe they won't agree with you," she said. "Is it all right for me to read the paper?"

"I wish you would," he said. "Where's that son of mine? Upstream?" He leaped to his feet and went to the diving board again.

"Better walk along the bank, Joe. The stream is too swift."

"Nonsense!" Dr. MacNare said.

He made a long shallow dive, then began swimming in a powerful crawl that took him upstream slowly. Alice stood on the dock watching him until he was lost to sight around the bend, then went into the cabin. The completed paper lay beside the typewriter.

ALICE HAD her doubts. "I'm not so sure the board will approve of this," she said. Dr. MacNare, somewhat exasperated, said, "What makes you think that? Pavlov experimented with his dog, physiological experiments with rats, rabbits, and other animals go on all the time. There's nothing cruel about it."

"Just the same . . ." Alice said. So Dr. MacNare cautiously resisted the impulse to talk about his paper with his fellow professors and his most intelligent students. Instead, he merely turned his paper in to

the board at the earliest opportunity and kept silent, waiting for their decision.

He hadn't long to wait. On the last Friday of September he received a note requesting his presence in the board room at three o'clock on Monday. He rushed home after his last class and told Alice about it.

"Let's hope their decision is favorable," she said.

"It has to be," Dr. MacNare answered with conviction.

He spent the week-end making plans. "They'll probably assign me a machinist and a couple of electronics experts from the hill," he told Alice. "I can use graduate students for work with the animals. I hope they give me Dr. Munitz from Psych as a consultant, because I like him much better than Veerhof. By early spring we should have things rolling."

Monday at three o'clock on the dot, Dr. MacNare knocked on the door of the board room, and entered. He was not unfamiliar with it, nor with the faces around the massive walnut conference table. Always before he had known what to expect—a brief commendation for the revisions in his textbook on calculus for its fifth printing, a nice speech from the president about his good work as a prelude to a salary raise—quiet, expected things. Nothing unanticipated had ever happened here.

Now, as he entered, he sensed a difference. All eyes were fixed on him, but not with admiration or friendliness. They were fixed more in the manner of a restaurateur watching the approach of a cockroach along the surface of the counter.

Suddenly the room seemed hot and stuffy. The confidence in Dr. MacNare's expression evaporated. He glanced back toward the door as though wishing to escape.

"So it's *you!*" the president said, setting the tone of what followed.

"This is *yours?*" the president added, picking up the neatly typed manuscript, glancing at it, and dropping it back on the table as though it were something unclean.

Dr. MacNare nodded, and cleared his throat nervously to say yes, but didn't get the chance.

"We—all of us—are amazed and shocked," the president said. "Of course, we understand that psychology is not your field, and you probably were thinking only from the mathematical viewpoint. We are agreed on that. What you propose, though . . ." He shook his head slowly. "It's not only out of the question, but I'm afraid I'm going to have to request that you forget the whole thing—put this paper where no one can see it, preferably destroy it. I'm sorry, Dr. MacNare, but the university simply cannot afford to be associated with such a thing even remotely. I'll put it bluntly because I feel strongly about it, as do the other members of the Board. *If this paper is published or in any way comes to light, we will be forced to request your resignation from the faculty.*"

"But why?" Dr. MacNare asked in complete bewilderment.

"Why?" another board member exploded, slapping the table. "It's

the most inhuman thing I ever heard of, strapping a newborn animal onto some kind of frame and tying its legs to control levers, with the intention of never letting it free. The most fiendish and inhuman torture imaginable! If you didn't have such an outstanding record I would be for demanding your resignation at once."

"But that's not true!" Dr. MacNare said. "It's not torture! Not in any way! Didn't you read the paper? Didn't you understand that—"

"I read it," the man said. "We all read it. Every word."

"Then you should have understood—" Dr. MacNare said.

"We read it," the man repeated, "and we discussed some aspects of it with Dr. Veerhof without bringing your paper into it, nor your name."

"Oh," Dr. MacNare said. "Veerhof . . ."

"He says experiments, very careful experiments, have already been conducted along the lines of getting an animal to understand a symbol system and it can't be done. The nerve paths aren't there. Your line of research, besides being inhumanly cruel, would accomplish nothing."

"Oh," Dr. MacNare said, his eyes flashing. "So you know all about the results of an experiment in an untried field without performing the experiments!"

"According to Dr. Veerhof that field is not untried but rather well explored," the board member said. "Giving an animal the means to make vocal sounds would not enable it to form a symbol system."

"I disagree," Dr. MacNare said, seething. "My studies indicate clearly—"

"I think," the president said with a firmness that demanded the floor, "our position has been made very clear, Dr. MacNare. The matter is now closed. Permanently. I hope you will have the good sense, if I may use such a strong term, to forget the whole thing. For the good of your career and your very nice wife and son. That is all." He held the manuscript toward Dr. MacNare.

"I can't understand their attitude!" Dr. MacNare said to Alice when he told her about it.

"Possibly I can understand it a little better than you, Joe," Alice said thoughtfully. "I had a little of what I think they feel, when I first read your paper. A—a prejudice against the idea of it, is as closely as I can describe it. Like it would be violating the order of nature, giving an animal a soul, in a way."

"Then you feel as they do?" Dr. MacNare said.

"I didn't say that, Joe." Alice put her arms around her husband and kissed him fiercely. "Maybe I feel just the opposite, that if there is some way to give an animal a soul, we should do it."

Dr. MacNare chuckled. "It wouldn't be quite that cosmic. An animal can't be given something it doesn't have already. All that can be done is to give it the means to fully capitalize on what it has. Animals—man included—can only do by observing the results. When you move a finger, what you really do is

send a neural impulse out from the brain along one particular nerve or one particular set of nerves, but you can never learn that, nor just what it is you do. All that you can know is that when you do a definite *something* your eyes and sense of touch bring you the information that your finger moved. But if that finger were attached to a voice element that made the sound *ah,* and you could never see your finger, all you could ever know is that when you did that particular *something* you made a certain vocal sound. Changing the resultant effect of mental commands to include things normally impossible to you may expand the potential of your mind, but it won't give you a soul if you don't have one to begin with."

"You're using Veerhof's arguments on me," Alice said. "And I think we're arguing from separate definitions of a soul. I'm afraid of it, Joe. It would be a tragedy, I think, to give some animal—a rat, maybe—the soul of a poet, and then have it discover that it is only a rat."

"Oh," Dr. MacNare said. *"That* kind of soul. No, I'm not that optimistic about the results. I think we'd be lucky to get any results at all, a limited vocabulary that the animal would use meaningfully. But I do think we'd get that."

"It would take a lot of time and patience."

"And we'd have to keep the whole thing secret from everyone," Dr. MacNare said. "We couldn't even let Paul have an inkling of it, because he might say something to one of his playmates, and it would get back to some member of the board. How could we keep it secret from Paul?"

"Paul knows he's not allowed in your study," Alice said. "We could keep everything there—and keep the door locked."

"Then it's settled?"

"Wasn't it, from the very beginning?" Alice put her arms around her husband and her cheek against his ear to hide her worried expression. "I love you, Joe. I'll help you in any way I can. And if we haven't enough in the savings account, there's always what Mother left me."

"I hope we won't have to use any of it, sweetheart," he said.

The following day Dr. MacNare was an hour and a half late coming home from the campus. He had been, he announced casually, to a pet store.

"We'll have to hurry," said Alice. "Paul will be home any minute."

She helped him carry the packages from the car to the study. Together they moved things around to make room for the gleaming new cages with their white rats and hamsters and guinea pigs. When it was done they stood arm in arm viewing their new possession.

TO ALICE MacNare, just the presence of the animals in her husband's study brought the research project into reality. As the days passed that romantic feeling became fact.

"We're going to have to do together," Joe MacNare told her at the end of the first week, "what a

team of a dozen specialists in separate fields should be doing. Our first job, before we can do anything else, is to study the natural movements of each species and translate them into patterns of robot directives."

"Robot directives?"

"I visualize it this way," Dr. MacNare said. "The animal will be strapped comfortably in a frame so that its body can't move but its legs can. Its legs will be attached to four separate, free-moving levers which make a different electrical contact for every position. Each electrical contact, or control switch, will cause the robot body to do one specific thing, such as move a leg, utter some particular sound through its voice box, or move just one finger. Can you visualize that, Alice?"

Alice nodded.

"Okay. Now, one leg has to be used for nothing but voice sounds. That leaves three legs for control of the movements of the robot body. In body movement there will be simultaneous movements and sequences. A simple sequence can be controlled by one leg. All movements of the robot will have to be reduced to not more than three concurrent sequences of movement of the animal's legs. Our problem, then, is to make the unlearned and the most natural movements of the legs of the animal control the robot body's movements in a functional manner."

Endless hours were consumed in this initial study and mapping. Alice worked at it while her husband was at the university and Paul was at school. Dr. MacNare rushed home each day to go over what she had done and continue the work himself.

He grew more and more grudging of the time his classes took. In December he finally wrote to the three technical journals that had been expecting papers from him for publication during the year that he would be too busy to do them.

By January the initial phase of research was well enough along so that Dr. MacNare could begin planning the robot. For this he set up a workshop in the garage.

In early February he finished what he called the "test frame." After Paul had gone to bed, Dr. MacNare brought the test frame into the study from the garage. To Alice it looked very much like the insides of a radio.

She watched while he placed a husky-looking male white rate in the body harness fastened to the framework of aluminum and tied its legs to small metal rods.

Nothing happened except that the rat kept trying to get free, and the small metal rods tied to its feet kept moving in pivot sockets.

"Now!" Dr. MacNare said excitedly, flicking a small toggle switch on the side of the assembly.

Immediately a succession of vocal sounds erupted from the speaker. They followed one another, making no sensible word.

"*He's* doing that," Dr. MacNare said triumphantly.

"If we left him in that, do you think he'd eventually associate his movements with the sounds?"

"It's possible. But that would be more on the order of what we do

when we drive a car. To some extent a car becomes an extension of the body, but you're always aware that your hands are on the steering wheel, your foot on the gas pedal or brake. You extend your awareness consciously. You interpret a slight tremble in the steering wheel as a shimmy in the front wheels. You're oriented primarily to your body and only secondarily to the car as an extension of you."

Alice closed her eyes for a moment. "Mm hm," she said.

"And that's the best we could get, using a rat that knows already it's a rat."

Alice stared at the struggling rat, her eyes round with comprehension, while the loudspeaker in the test frame said, "Ag-pr-ds-raf-os-dg . . ."

Dr. MacNare shut off the sound and began freeing the rat.

"By starting with a newborn animal and never letting it know what it is," he said, "we can get a complete extension of the animal into the machine, in its orientation. So complete that if you took it out of the machine after it grew up, it would have no more idea of what had happened than—than your brain if it were taken out of your head and put on a table!"

"Now I'm getting that *feeling* again, Joe," Alice said, laughing nervously. "When you said that about my brain I thought, 'Or my soul?' "

Dr. MacNare put the rat back in its cage.

"There might be a valid analogy there," he said slowly. "If we have a soul that survives after death, what is it like? It probably interprets its surroundings in terms of its former orientation in the body."

"That's a little of what I mean," Alice said. "I can't help it, Joe. Sometimes I feel so sorry for whatever baby animal you'll eventually use, that I want to cry. I feel so sorry for it, because *we will never dare let it know what it really is!*"

"That's true. Which brings up another line of research that should be the work of one expert on the team I ought to have for this. As it is, I'll turn it over to you to do while I build the robot."

"What's that?"

"Opiates," Dr. MacNare said. "What we want is an opiate that can be used on a small animal every few days, so that we can take it out of the robot, bathe it, and put it back again without its knowing about it. There probably is no ideal drug. We'll have to test the more promising ones."

Later that night, as they lay beside each other in the silence and darkness of their bedroom, Dr. MacNare sighed deeply.

"So many problems," he said. "I sometimes wonder if we can solve them all. *See* them all . . ."

To Alice MacNare, later, that night in early February marked the end of the first phase of research—the point where two alternative futures hung in the balance, and either could have been taken. That night she might have said, there in the darkness, "Let's drop it," and her husband might have agreed.

She thought of saying it. She even opened her mouth to say it. But her husband's soft snores suddenly broke

the silence of the night. The moment of return had passed.

MONTH followed month. To Alice it was a period of rushing from kitchen to hypodermic injections to vacuum cleaner to hypodermic injections, her key to the study in constant use.

Paul, nine years old now, took to spring baseball and developed an indifference to TV, much to the relief of both his parents.

In the garage workshop Dr. MacNare made parts for the robot, and kept a couple of innocent projects going which he worked on when his son Paul evinced his periodic curiosity about what was going on.

Spring became summer. For six weeks Paul went to Scout camp, and during those six weeks Dr. MacNare reorganized the entire research project in line with what it would be in the fall. A decision was made to use only white rats from then on. The rest of the animals were sold to a pet store, and a system for automatically feeding, watering, and keeping the cages clean was installed in preparation for a much needed two weeks' vacation at the cabin.

When the time came to go, they had to tear themselves away from their work by an effort of will—aided by the realization that they could get little done with Paul underfoot.

September came all too soon. By mid-September both Dr. MacNare and his wife felt they were on the home stretch. Parts of the robot were going together and being tested, the female white rats were being bred at the rate of one a week so that when the robot was completed there would be a supply of newborn rats on hand.

October came, and passed. The robot was finished, but there were minor defects in it that had to be corrected.

"Adam," Dr. MacNare said one day, "will have to wear this robot all his life. It has to be just right."

And with each litter of baby rats Alice said, "I wonder which one is Adam."

They talked of Adam often now, speculating on what he would be like. It was almost, they decided, as though Adam were their second child.

And finally, on November 2, 1956, everything was ready. Adam would be born in the next litter, due in about three days.

The amount of work that had gone into preparation for the great moment is beyond conception. Four file cabinet drawers were filled with notes. By actual measurement seventeen feet of shelf space was filled with books on the thousand and one subjects that had to be mastered. The robot itself was a masterpiece of engineering that would have done credit to the research staff of a watch manufacturer. The vernier adjustments alone, used to compensate daily for the rat's growth, had eight patentable features.

And the skills that had had to be acquired! Alice, who had never before had a hypodermic syringe in her hand, could now inject a pre-

cisely measured amount of opiate into the tiny body of a baby rat with calm confidence in her skill.

After such monumental preparation, the great moment itself was anticlimactic. While the mother of Adam was still preoccupied with the birth of the remainder of the brood, Adam, a pink helpless thing about the size of a little finger, was picked up and transfered to the head of the robot.

His tiny feet, which he would never know existed, were fastened with gentle care to the four control rods. His tiny head was thrust into a helmet attached to a pivot-mounted optical system, ending in the lenses that served the robot for eyes. And finally a transparent plastic cover contoured to the shape of the back of a human head was fastened in place. Through it his feeble attempts at movement could be easily observed.

Thus, Dr. MacNare's Adam was born into his body, and the time of the completion of his birth was one-thirty in the afternoon on the fifth day of November, 1956.

In the ensuing half hour all the cages of rats were removed from the study, the floor was scrubbed, and deodorizers were sprayed, so that no slightest trace of Adam's lowly origins remained. When this was done, Dr. MacNare loaded the cages into his car and drove them to a pet store that had agreed to take them.

When he returned, he joined Alice in the study, and at five minutes before four, with Alice hovering anxiously beside him, he opened the cover on Adam's chest and turned on the master switch that gave Adam complete dominion over his robot body.

Adam was beautiful—and monstrous. Made of metal from the neck down, but shaped to be covered by padding and skin in human semblance. From the neck up the job was done. The face was human, masculine, handsome, much like that of a clothing store dummy except for its mobility of expression, and the incongruity of the rest of the body.

The voice-control lever and contacts had been designed so that the ability to produce most sounds would have to be discovered by Adam as he gained control of his natural right front leg. Now the only sounds being uttered were *oh, ah, mm,* and *ll,* in random order. Similarly, the only movements of his arms and legs were feeble, like those of a human baby. The tremendous strength in his limbs was something he would be unable to tap fully until he had learned conscious coördination.

After a while Adam became silent and without movement. Alarmed, Dr. MacNare opened the instrument panel in the abdomen. The instruments showed that Adam's pulse and respiration were normal. He had fallen asleep.

Dr. MacNare and his wife stole softly from the study, and locked the door.

AFTER A FEW days, with the care and feeding of Adam all that remained of the giant research project, the pace of the days shifted

to that of long-range patience.

"It's just like having a baby," Alice said.

"You know something?" Dr. MacNare asked. "I've had to resist passing out cigars. I hate to say it, but I'm prouder of Adam than I was of Paul when he was born."

"So am I, Joe," Alice said quietly. "But I'm getting a little of that scared feeling back again."

"In what way?"

"He watches me. Oh, I know it's natural for him to, but I do wish you had made the eyes so that his own didn't show as little dark dots in the center of the iris."

"It couldn't be helped," Dr. MacNare said. "He has to be able to see, and I had to set up the system of mirrors so that the two axes of vision would be three inches apart as they are in the average human pair of eyes."

"Oh, I know," said Alice. "Probably it's just something I've seized on. But when he watches me, I find myself holding my breath in fear that he can read in my expression the secret we have to keep from him, that he is a rat."

"Forget it, Alice. That's outside his experience and beyond his comprehension."

"I know," Alice sighed. "When he begins to show some of the signs of intelligence a baby has, I'll be able to think of him as a human being."

"Sure, darling," Dr. MacNare said.

"Do you think he ever will?"

"That," Dr. MacNare said, "is the big question. I think he will. I think so now even more than I did at the start. Aside from eating and sleeping, he has no avenue of expression except his robot body, and *no source of reward except that of making sense—human sense.*"

The days passed, and became weeks, then months. During the daytime when her husband was at the university and her son was at school, Alice would spend most of her hours with Adam, forcing herself to smile at him and talk to him as she had to Paul when he was a baby. But when she watched his motions through the transparent back of his head, his leg motions remained those of attempted walking and attempted running.

Then, one day when Adam was four months old, things changed—as abruptly as the turning on of a light.

The unrewarding walking and running movements of Adam's little legs ceased. It was evening, and both Dr. MacNare and his wife were there.

For a few seconds there was no sound or movement from the robot body. Then, quite deliberately, Adam said, "Ah."

"Ah," Dr. MacNare echoed. "Mm. Mm, ah. Ma-ma."

"Mm," Adam said.

The silence in the study became absolute. The seconds stretched into eternities. Then—

"Mm, ah," Adam said. "Mm, ah."

Alice began crying with happiness.

"Mm, ah," Adam said. "Mm, ah. Ma-ma. Mamamamama."

Then, as though the effort had

been too much for Adam, he went to sleep.

Having achieved the impossible, Adam seemed to lose interest in it. For two days he uttered nothing more than an occasional involuntary syllable.

"I would call that as much of an achievement as speech itself," Dr. MacNare said to his wife. "His right front leg has asserted its independence. If each of his other three legs can do as well, he can control the robot body."

It became obvious that Adam was trying. Though the movements of his body remained non-purposive, the pauses in those movements became more and more pregnant with what was obviously mental effort.

During that period there was of course room for argument and speculation about it, and even a certain amount of humor. Had Adam's right front leg, at the moment of achieving meaningful speech, suffered a nervous breakdown? What would a psychiatrist have to say about a white rat that had a nervous breakdown in its right front leg?

"The worst part about it," Dr. MacNare said to his wife, "is that if he fails to make it he'll have to be killed. He can't have permanent frustration forced onto him, and, by now, returning him to his natural state would be even worse."

"And he has such a stout little heart," Alice said. "Sometimes when he looks at me I'm sure he knows what is happening and he wants me to know he's trying."

When they went to bed that night they were more discouraged than they had ever been.

Eventually the slept. When the alarm went off, Alice slipped into her robe and went into the study first, as she always did.

A moment later she was back in the bedroom, shaking her husband's shoulder.

"Joe!" she whispered. "Wake up! Come into the study!"

He leaped out of bed and rushed past her. She caught up with him and pulled him to a stop.

"Take it easy, Joe," she said. "Don't alarm him."

"Oh." Dr. MacNare relaxed. "I thought something had happened."

"Something has!"

They stopped in the doorway of the study. Dr. MacNare sucked in his breath sharply, but remained silent.

Adam seemed oblivious of their presence. He was too interested in something else.

He was interested in his hands. He was holding his hands up where he could see them, and he was moving them independently, clenching and unclenching the metal fingers with slow deliberation.

Suddenly the movement stopped. He had become aware of them. Then, impossibly, unbelievably, he spoke.

"Ma ma," Adam said. Then, "Pa pa."

"Adam!" Alice sobbed, rushing across the study to him and sinking down beside him. Her arms went around his metal body. "Oh, Adam," she cried happily.

IT WAS the beginning. The date of that beginning is not known. Alice MacNare believes it was early in May, but more probably it was in April. There was no time to keep notes. In fact, there was no longer a research project nor any thought of one. Instead, there was Adam, the person. At least, to Alice he became that, completely. Perhaps, also, to Dr. MacNare.

Dr. MacNare quite often stood behind Adam where he could watch the rat body through the transparent skull case while Alice engaged Adam's attention. Alice did the same, at times, but she finally refused to do so any more. The sight of Adam the rat, his body held in a net attached to the frame, his head covered by the helmet, his four legs moving independently of one another with little semblance of walking or running motion nor even of coördination, but with swift darting motions and pauses pregnant with meaning, brought back to Alice the old feeling of vague fear, and a tremendous surge of pity for Adam that made her want to cry.

Slowly, subtly, Adam's rat body became to Alice a pure brain, and his legs four nerve ganglia. A brain covered with short white fur; and when she took him out of his harness under opiate to bathe him, she bathed him as gently and carefully as any brain surgeon sponging a cortical surface.

Once started, Adam's mental development progressed rapidly. Dr. MacNare began making notes again on June 2, 1957, just ten days before the end, and it is to these notes that we go for an insight into Adam's mind.

On June 4th Dr. MacNare wrote, "I am of the opinion that Adam will never develop beyond the level of a moron, in the scale of human standards. He would probably make a good factory worker or chauffeur, in a year or two. But he is consciously aware of himself as Adam, he thinks in words and simple sentences with an accurate understanding of their meaning, and he is able to do new things from spoken instructions. There is no question, therefore, but that he has an integrated mind, entirely human in every respect."

On June 7th Dr. MacNare wrote, "Something is developing which I hesitate to put down on paper—for a variety of reasons. Creating Adam was a scientific experiment, nothing more than that. Both the premises on which the project was based have been proven: that the principle of verification is the main factor in learned response, and that, given the proper conditions, some animals are capable of abstract symbol systems and therefore of thinking with words to form meaningful concepts.

"Nothing more was contemplated in the experiment. I stress this because—Adam is becoming deeply religious—and before any mistaken conclusions are drawn from this I will explain what caused this development. It was an oversight of a type that is bound to happen in any complex project.

"Alice's experimental data on the effects of opiates, and especially the data on increasing the dose to offset growing tolerance, were based on

observation of the subject alone, without any knowledge of the mental aspects of increased tolerance—which would of course be impossible except with human subjects.

"Unknown to us, Adam has been becoming partly conscious during his bath. Just conscious enough to be vaguely aware of certain sensations, and to remember them afterward. Few, if any, of these half remembered sensations are such that he can fit them into the pattern of his waking reality.

"The one that has had the most pronounced influence on him is, to quote him, 'Feel clean inside. Feel good.' Quite obviously this sensation is caused by his bath.

"With it is a distinct feeling of disembodiment, of being—and these are his own words—'outside my body'! This, of course, is an accurate realization, because to him the robot is his body, and he knows nothing of the existence of his actual, living, rat body.

"In addition to these two effects, there is a third one. A feeling of walking, and sometimes of floating, of stumbling over things he can't see, of talking, of being talked to by disembodied voices.

"The explanation of this is also obvious. When he is being bathed his legs are moved about. Any movement of a leg is to him either a spoken sound or a movement of some part of his robot body. Any movement of his right front leg, for example, tells his mind that he is making a sound. But, since his leg is not connected to the sound system of his robot body, his ears bring no physical verification of the sound. The mental anticipation of that verification then becomes a disembodied voice to him.

"The end result of all this is that Adam is becoming convinced that there is a hidden side of things (which there is), and that it is supernatural (which it is, *in the framework of his orientation*).

"What we are going to have to do is make sure he is completely unconscious before taking him out and bathing him. His mental health is far more important than exploring the interesting avenues opened up by this unforeseen development.

"I do intend, however, to make one simple test, while he is fully awake, before dropping this avenue of investigation."

Dr. MacNare does not state in his notes what this test was to be; but his wife says that it probably refers to the time when he pinched Adam's tail and Adam complained of a sudden, violent headache. This transference is the one well known to doctors. Unoriented pain in the human body manifests itself as a "headache," when the source of the pain is actually the stomach, or the liver, or any one of a hundred spots in the body.

The last notes made by Dr. MacNare were those of June 11, 1957, and are unimportant except for the date. We return, therefore, to actual events, so far as they can be reconstructed.

We have said little or nothing about Dr. MacNare's life at the university after embarking on the research project, nor of the social life of the MacNares. As conspirators, they had kept up their social life

to avoid any possibility of the board getting curious about any radical change in Dr. MacNare's habits; but as time went on both Dr. MacNare and his wife became so engrossed in their project that only with the greatest reluctance did they go anywhere.

The annual faculty party at Professor Long's on June 12th was something they could not evade. Not to have gone would have been almost tantamount to a resignation from the university.

"Besides," Alice had said when they discussed the matter in May, "isn't it about time to do a little hinting that you have something up your sleeve?"

"I don't know, Alice," Dr. MacNare had said. Then a smile quirked his lips and he said, "I wouldn't mind telling off Veerhof. I've never gotten over his deciding something was impossible without enough data to pass judgment." He frowned. "We are going to have to let the world know about Adam pretty soon, aren't we? That's something I haven't thought about. But not yet. Next fall will be time enough."

"DON'T forget, Joe," Alice said at dinner. "Tonight's the party at Professor Long's."

"How can I forget with you reminding me?" Dr. MacNare said, winking at his son.

"And you, Paul," Alice said. "I don't want you leaving the house. You understand? You can watch TV, and I want you in bed by nine thirty."

"Ah, Mom!" Paul protested. "Nine thirty?" He suppressed a grin. He had a party of his own planned.

"And you can wipe the dishes for me. We have to be at Professor Long's by eight o'clock."

"I'll help you," Dr. MacNare said.

"No, you have to get ready. Besides, don't you have to look up something for one of the faculty?"

"I'd forgotten," said Dr. MacNare. "Thanks for reminding me."

After dinner he went directly to the study. Adam was sitting on the floor playing with his wooden blocks. They were alphabet blocks, but he didn't know that yet. The summer project was going to be teaching him the alphabet. Already, though, he preferred placing them in straight rows rather than stacking them up.

At seven o'clock Alice rapped on the door to the study.

"Time to get dressed, Joe," she called.

"You'll be all right while we're gone, Adam?" Dr. MacNare said.

"I be all right, papa," Adam said. "I sleep."

"That's good," Dr. MacNare said. "I'll turn out the light."

At the door he waited until Adam had sat down in the chair he always slept on, and settled himself. Then he pushed the switch just to the right of the door and went out.

"Hurry, dear," Alice called.

"I'm hurrying," Dr. MacNare protested—and, for the first time, he forgot to lock the study door.

The bathroom was next to the study, the wall between them

soundproofed by a ceiling-high bookshelf in the study filled with thousands of books. On the other side was the master bedroom, with a closet with sliding panels that opened both on the bedroom and the bathroom. These sliding panels were partly open, so that Dr. MacNare and Alice could talk.

"Did you lock the study door?"

"Of course," Dr. MacNare said. "But I'll check before we leave."

"How is Adam taking being alone tonight?" Alice called.

"Okay," Dr. MacNare said. "Damn!"

"What's the matter, Joe?"

"I forgot to get razor blades."

The conversation died down.

Alice MacNare finished dressing.

"Aren't you ready yet, Joe?" she called. "It's almost a quarter to eight."

"Be right with you. I nicked myself shaving with an old blade. The bleeding's almost stopped now."

Alice went into the living room. Paul had turned on the TV and was sprawled out on the rug.

"You be sure and stay home, and be in bed by nine thirty, Paul," she said. "Promise?"

"Ah, Mom," he protested. "Well, all right."

Dr. MacNare came into the room, still working on his tie. A moment later they went out the front door. They had been gone less than five minutes when there was a knock. Paul jumped to his feet and opened the door.

"Hi, Fred, Tony, Bill," he said.

The boys, all nine years old, sprawled on the rug and watched television. It became eight o'clock, eight thirty, and finally five minutes to nine. The commercial began.

"Where's your bathroom?" Tony asked.

"In there," Paul said, pointing vaguely at the doorway to the hall.

Tony got up off the floor and went into the hall. He saw several doors, all looking much alike. He picked one and opened it. It was dark inside. He felt along the wall for a light switch and found it. Light flooded the room. He stared at what he saw for perhaps ten seconds, then turned and ran down the hall to the living room.

"Say, Paul!" he said. "You never said anything about having a real honest to gosh robot!"

"What are you talking about?" Paul said.

"In that room in there!" Tony said. "Come on. I'll show you!"

The TV program forgotten, Paul, Fred, and Bill crowded after him. A moment later they stood in the doorway to the study, staring in awe at the strange figure of metal that sat motionless in a chair across the room.

Adam, it seems certain, was asleep, and had not been wakened by this intrusion nor the turning on of the light.

"Gee!" Paul said. "It belongs to Dad. We'd better get out of here."

"Naw," Tony said with a feeling of proprietorship at having been the original discoverer. "Let's take a look. He'll never know about it."

They crossed the room slowly, until they were close up to the robot figure, marveling at it, moving around it.

"Say!" Bill whispered, pointing.

"What's that in there? It looks like a white rat with its head stuck into that kind of helmet thing."

They stared at it a moment.

"Maybe it's dead. Let's see."

"How you going to find out?"

"See those hinges on the cover?" Tony said importantly. "Watch." With cautious skill he opened the transparent back half of the dome, and reached in, wrapping his fingers around the white rat.

He was unable to get it loose, but he succeeded in pulling its head free of the helmet.

At the same time Adam awoke.

"Ouch!" Tony cried, jerking his hand away. "He bit me!"

"He's alive all right," Bill said. "Look at him glare!" He prodded the body of the rat and pulled his hand away quickly as the rat lunged.

"Gee, look at its eyes," Paul said nervously. "They're getting bloodshot."

"Dirty old rat!" Tony said vindictively, jabbing at the rat with his finger and evading the snapping teeth.

"Get its head back in there!" Paul said desperately. "I don't want papa to find out we were in here!" He reached in, driven by desperation, pressing the rat's head between his fingers and forcing it back into the tight fitting helmet.

Immediately screaming sounds erupted from the lips of the robot. (It was determined by later examination that only when the rat's body was completely where it should be were the circuits operable.)

"Let's get out of here!" Tony shouted, and dived for the door, thereby saving his life.

"Yeah! Let's get out of here!" Fred shouted as the robot figure rose to its feet. Terror enabled him to escape.

Bill and Paul delayed an instant too long. Metal fingers seized them. Bill's arm snapped halfway between shoulder and elbow. He screamed with pain and struggled to free himself.

Paul was unable to scream. Metal fingers gripped his shoulder, with a metal thumb thrust deeply against his larynx, paralyzing his vocal cords.

Fred and Tony had run into the front room. There they waited, ready to start running again. They could hear Bill's screams. They could hear a male voice jabbering nonsense, and finally repeating over and over again, "Oh my, oh my, oh my," in a tone all the more horrible because it portrayed no emotion whatever.

Then there was silence.

The silence lasted several minutes. Then Bill began to sniffle, rubbing his knuckles in his eyes. "I wanta go home," he whimpered.

"Me too."

They took each other's hand and tiptoed to the front door, watching the open doorway to the hall. When they reached the front door Tony opened it, and when it was open they ran, not stopping to close the door behind them.

THERE ISN'T much more to tell. It is known that Tony and Bill arrived at their respective homes, saying nothing of what had

happened. Only later did they come forward and admit their share in the night's events.

Joe and Alice MacNare arrived home from the party at Professor Long's at twelve thirty, finding the front door wide open, the lights on in the living room, and the television on.

Sensing that something was wrong, Alice hurried to her son's room and discovered he wasn't there. While she was doing that, Joe shut the front door and turned off the television.

Alice returned to the living room, eyes round with alarm, and said, "Paul's not in his room!"

"Adam!" Joe croaked, and rushed into the hallway, with Alice following more slowly.

She reached the open door of the study in time to see the robot figure pounce on Joe and fasten its metal fingers about his throat, crushing vertebrae and flesh alike.

Oblivious to her own danger, she rushed to rescue her already dead husband, but the metal fingers were inflexible. Belatedly she abandoned the attempt and ran into the hallway to the phone.

When the police arrived, they found her slumped against the wall in the hallway. She pointed toward the open doorway of the study, without speaking.

The police rushed into the study. At once there came the sounds of shots. Dozens of them, it seemed. Later both policemen admitted that they lost their heads and fired until their guns were empty.

But it was not yet the end of Adam.

It would perhaps be impossible to conceive the full horror of his last hours, but we can at least make a guess. Asleep when the boys entered the study, he awakened to a world he had never before perceived except very vaguely and under the soporific veil of opiate.

But it was a world vastly different even than that. There is no way of knowing what he saw—probably blurred ghostly figures, monstrous beyond the ability of his mind to grasp, for his eyes were adjusted only to the series of prisms and lenses that enabled him to see and coördinate the images brought to him through the eyes of the robot.

He saw these impossible figures, he felt pain and torture that were not of the flesh as he knew it, but of the spirit; agony beyond agony administered by what he could only believe were fiends from some nether hell.

And then, abruptly, as ten-year-old Paul shoved his head back into the helmet, the world he had come to believe was reality returned. It was as though he had returned to the body from some awful pit of hell, with the soul sickness still with him.

Before him he saw four human-like figures of reality, but beings unlike the only two he had ever seen. Smaller, seeming to be a part of the unbelievable nightmare he had been in. Two of them fled, two were within his grasp.

Perhaps he didn't know what he was doing when he killed Paul and Bill. It's doubtful if he had the ability to think at all then, only to tremble and struggle in his pitiful

little rat body, with the automatic mechanisms of the robot acting from those frantic motions.

But it is known that there were three hours between the deaths of the two boys and the entry of Dr. MacNare at twelve thirty, and during those three hours he would have had a chance to recover, and to think, and to partially rationalize the nightmare he had experienced in realms outside what to him was the world of reality.

Adam must certainly have been calm enough, rational enough, to recognize Dr. MacNare when he entered the study at twelve thirty.

Then why did Adam deliberately kill Joe by breaking his neck? Was it because, in that three hours, he had put together the evidence of his senses and come to the realization that he was not a man but a rat?

It's not likely. It is much more likely that Adam came to some aberrated conclusion dictated by the superstitious feelings that had grown so strongly into his strange and unique existence, that dictated he must kill Joseph.

For it would have been impossible for him to have realized that he was only a rat. You see, Joseph MacNare had taken great care that Adam never, in all his life, should see *another* rat.

There remains only the end of Adam to relate.

Physically it can be only anticlimactic. With his metal body out of commission from a dozen or so shots, two of which destroyed the robot extensions of his eyes, he remained helpless until the coroner carefully removed him.

To the coroner he was just a white rat, and a strangely helpless one, unable to walk or stand as rats are supposed to. Also a strangely vicious one, with red little beads of eyes and lips drawn back from sharp teeth the same as some rabid wild animal.

The coroner had no way of knowing that somewhere in that small, menacing form there was a noble but lost mentality that knew itself as Adam, and held thoughts of a strange and wonderful realm of peace and splendor beyond the grasp of the normal physical senses.

The coroner could not know that the erratic motions of that small left front foot, if connected to the proper mechanisms, would have been audible as, perhaps, a prayer, a desperate plea to whatever lay in the Great Beyond to come down and rescue its humble creature.

"Vicious little bastard," the coroner said nervously to the homicide men gathered around Dr. MacNare's desk.

"Let me take care of it," said one of the detectives.

"No," the coroner answered. "I'll do it."

Quickly, so as not to be bitten, he picked Adam up by the tip of the tail and slammed him forcefully against the top of the desk.

END

BY WILL WORTHINGTON

TWO WHOLE GLORIOUS WEEKS

BERTHA and I were like a couple of city kids on their first country outing when we arrived at Morton's place. The weather was perfect—the first chill of autumn had arrived in the form of a fine, needle-shower rain of the type that doesn't look very bad through a window, but when you get out in it, it seeks out every tiny opening between the warp and weft of your

A new author, and a decidedly unusual idea of the summer camp of the future: hard labor, insults, and hog kidneys!

clothing and runs through your hair and eyebrows, under your collar and over the surfaces of your body until, as though directed by some knowing, invisible entity, it finds its way to your belly-button.

It was beautifully timed: the ancient motor-bus had two blowouts on the way up the last half-mile of corduroy road that led to the place, and of course we were obliged to change the tires ourselves. This was a new experience for both of us, and on the very first day! Everything was as advertised, and we hadn't even arrived at the admission gate yet.

We didn't dare talk. On the way from the heliport we had seen some of the other folks at work in the swamp that surrounded the camp proper. They were digging out stumps with mattocks, crowbars and axes, and some of them stood waist-deep in the dark water. Bertha had said "Looky there!" and had made some remark about the baggy gray coveralls they wore—"Just like convicts," she said. The driver, a huge, swinelike creature with very small, close-set eyes, had yanked the emergency brake and wheeled around at us then.

"You shnooks might just as well get outa the habit o' talkin' right here an' now. One more peep outa ya, 'n ya git clobbered!"

All we could do was look at each other and giggle like a couple of kids in the back pew of Sunday School, after that. Bertha looked ten years younger already.

The gate was exactly as the brochure had pictured it: solid and massive, it was let into a board fence about ten feet high which extended as far as you could see in either direction and lost itself on either side in a tangle of briers, elder bushes and dark trees. There were two strands of barbed wire running along the top. A sign over the gate—stark, black lettering on a light gray background—read:

Silence!—No admission without authority—No smoking!
**** MORTON'S MISERY FARM ****
30 acres of swamp—Our own rock quarry—Jute Mill—Steam laundry
Harshest dietary laws in the Catskills

A small door opened at one side of the gate and a short, stocky, well-muscled woman in a black visored cap and a shapeless black uniform came out and boarded the bus. She had our releases with her, fastened to a clipboard. She thrust this under my nose.

"Read and sign, shnook!" she said in a voice that sounded like rusty boiler plate being torn away from more rusty boiler plate.

The releases were in order. Our hands shook a little when we signed the papers; there was something so terribly final and irreversible about it. There would be no release except in cases of severe medical complaint, external legal involvement or national emergency. We were paid up in advance, of course. There was no turning away.

Another attendant, who also looked like a matron of police, boarded the bus with a large suitcase and two of the baggy gray gar-

ments we had seen the others wearing in the swamp. No shoes, socks or underwear.

"Strip and pack your clothes here, shnooks," said the woman with the empty suitcase. We did, though it was pretty awkward . . . standing there in the aisle of the bus with those two gorgons staring at us. I started to save out a pack of cigarettes, but was soon disabused of this idea. The older of the two women knocked the pack from my hand, ground it under her heel on the floor and let me have one across the face with what I am almost certain must have been an old sock full of rancid hog kidneys.

"What the hell was that?" I protested.

"Sock fulla hog kidneys, shnook. Soft but heavy, know what I mean? Just let us do the thinkin' around here. Git outa line just once an' you'll see what we can do with a sock fulla hog kidneys."

I didn't press the matter further. All I could think of was how I wanted a smoke just then. When I thought of the fresh, new pack of cigarettes with its unbroken cellophane and its twenty, pure white cylinders of fragrant Turkish and Virginia, I came as close to weeping as I had in forty years.

The ground was slimy and cold under our bare feet when we got down from the bus, but the two viragos behind us gave us no time to pick our way delicately over the uneven ground. We were propelled through the small door at the side of the gate, and at last we found ourselves within the ten-foot barriers of the Misery Camp. We just looked at each other and giggled.

Inside the yard, about twenty other guests shuffled around and around in a circle. Their gray coveralls were dark and heavy with the rain and clung to their bodies in clammy-looking patches. All moved sluggishly through the mud with their arms hanging slack at their sides, their shoulders hunched forward against the wet chill, and their eyes turned downward, as though they were fascinated with the halting progress of their own feet. I had never seen people look so completely dispirited and tired. Only one man raised his head to look at us as we stood there. I noticed that his forehead had bright purple marks on it. These proved to be *"No. 94, Property of MMF,"* in inch-high letters which ran from temple to temple just above his eyebrows. Incredibly enough the man grinned at us.

"You'll be sah-reecee," he yelped. I saw him go down into the mud under a blow with a kidney-sock from a burly male guard who had been standing in the center of the cheerless little circle.

"Leave the welcoming ceremonies to us, knoedelhead!" barked the guard. The improvident guest rose painfully and resumed his plodding with the rest. I noticed that he made no rejoinder. He cringed.

We were led into a small office at one end of a long, wooden, one-story building. A sign on the door said, simply, *"Admissions. Knock and Remove Hat."* The lady guard knocked and we entered. We had no hats to remove; indeed, this was emphasized for us by the fact that

the rain had by now penetrated our hair and brows and was running down over our faces annoyingly.

AS SOON as I'd blinked the rain from my eyes, I was able to see the form of the person behind the desk with more clarity than I might have wished. He was large, but terribly emaciated, with the kind of gauntness that should be covered by a sheet—tenderly, reverently and finally. Picture the archetype of every chain-gang captain who has been relieved for inhumanity to prisoners; imagine the naked attribute Meanness, stripped of all accidental, incongruous, mitigating integument; picture all kindness, all mercy, all warmth, all humanity excised or cauterized, or turned back upon itself and let ferment into some kind of noxious mash; visualize the creature from which all the gentle qualities had been expunged, thus, and then try to forget the image.

The eyes were perhaps the worst feature. They burned like tiny phosphorescent creatures, dimly visible deep inside a cave under dark, overhanging cliffs—the brows. The skin of the face was drawn over the bones so tautly that you felt a sharp rap with a hard object would cause the sharp cheekbones to break through. There was a darkness about the skin that should have been, yet somehow did not seem to be the healthy tan of outdoor living. It was a coloring that came from the inside and radiated outwards; perhaps pellagra—a wasting, darkening malnutritional disease which no man had suffered for three hundred years. I wondered where, where on the living earth, they had discovered such a specimen.

"I am in full charge here. You will speak only when spoken to," he said. His voice came as a surprise and, to me at least, as a profound relief. I had expected an inarticulate drawl—something not yet language, not quite human. Instead his voice was clipped, precise, clear as new type on white paper. This gave me hope at a time when hope was at a dangerously low mark on my personal thermometer. My mounting misgivings had come to focus on this grim figure behind the desk, and the most feared quality that I had seen in the face, a hard, sharp, immovable and imponderable stupidity, was strangely mitigated and even contradicted by the flawless, mechanical speech of the man.

"What did you do on the Outside, shnook?" he snapped at me.

"Central Computing and Control. I punched tapes. Only got four hours of work a month," I said, hoping to cover myself with a protective film of humility.

"Hah! Another low-hour man. I don't see how the hell you could afford to come here. Well, anyway—we've got work for climbers like you. Real work, shnook. I know climbers like you hope you'll meet aristocracy in a place like this—ten hour men or even weekly workers, but I can promise you, shnook, that you'll be too damned tired to disport yourself socially, and too damned busy looking at your toes.

Don't forget that!"

Remembering, I looked down quickly, but not before one of the matrons behind me had fetched me a solid clout on the side of the head with her sap.

"Mark 'em and put 'em to work," he barked at the guards. Two uniformed men, who must have sneaked in while I was fascinated by the man behind the desk, seized me and started painting my forehead with an acrid fluid that stung like strong disinfectant in an open wound. I squinted my eyes and tried to look blank.

"This is indelible," one of them explained. "We have the chemical to take it off, but it doesn't come off till we say so."

When I had been marked, one of the guards took his ink and brush and advanced upon Bertha. The other addressed himself to me. "There is a choice of activities. There is the jute mill, the rock quarry, the stump-removal detail, the manure pile. . . ."

"How about the steam laundry?" I asked, prompted now by the cold sound of a sudden gust of rain against the wooden side of the building.

Splukk! went the guard's kidney-sock as it landed on the right hinge of my jaw. Soft or not, it nearly dropped me.

"I said there *is* a choice—not *you have* a choice, shnook. Besides, the steam laundry is for the ladies. Don't forget who's in charge here."

"Who *is* in charge here, then?" I asked, strangely emboldened by the clout on the side of the jaw.

Splukk! "That's somethin' you don't need to know, shnook. You ain't gonna sue nobody. You signed a *release*—remember?"

I had nothing to say. My toes, I noted, looked much the same. Then, behind my back, I heard a sharp squeal from Bertha. "Stop that! Oh stop! Stop! The brochure said nothing about—"

"Take it easy lady," said the other guard in an oily-nasty voice. "I won't touch you none. Just wanted to see if you was amenable."

I would like more than anything else in the world to be able to say honestly that I felt a surge of anger then. I didn't. I can remember with terrible clarity that I felt nothing.

"So he wants a nice inside job in the steam laundry?" said the man behind the desk—"the captain," we were instructed to call him. Another gust of wet wind joined his comments. "Put him on 'The Big Rock Candy Mountain.'" He fixed me then with those deep-set, glowworm eyes, coldly appraising. The two Sisters of Gorgonia, meanwhile, seized Bertha's arms and dragged her from the room. I did not try to follow. I knew the rules: there were to be three husband-and-wife visiting hours per week. Fifteen minutes each.

The Captain was still scrutinizing me from under the dark cliff of his brow. A thin smile now took shape on his lipless mouth. One of the guards was beating a slow, measured, somewhat squudgy tattoo on the edge of the desk with his kidney-sock.

"You wouldn't be entertaining angry thoughts, would you shnook?" asked the Captain, after

what seemed like half an hour of sickly pause.

My toes hadn't changed in the slightest respect.

IT MUST have been then, or soon after that, that my sense of time went gently haywire. I was conducted to "The Big Rock Candy Mountain," which turned out to be a Brobdingnagian manure heap. Its forbidding bulk overshadowed all other features of the landscape except some of the larger trees.

A guard stood in the shadow of a large umbrella, at a respectable and tolerable distance from the nitrogenous colossus, but not so distant that his voice did not command the entire scene. *"Hut-ho! hut-ho! Hut-ho HAW!"* he roared, and the wretched, gray-clad figures, whose number I joined without ceremony or introduction, moved steadily at their endless work in apparent unawareness of his cadenced chant.

I do not remember that anyone spoke to me directly or, at least, coherently enough so that words lodged in my memory, but someone must have explained the general pattern of activity. The object, it seemed, was to move all this soggy fertilizer from its present imposing site to another small but growing pile located about three hundred yards distant. This we were to accomplish by filling paper cement bags with the manure and carrying it, a bag at a time, to the more distant pile. Needless to say, the bags frequently dissolved or burst at the lower seams. This meant scraping up the stuff with the hands and refilling another paper bag. Needless to say, also, pitchforks and shovels were forbidden at the Farm, as was any potentially dangerous object which could be lifted, swung or hurled. It would have been altogether redundant to explain this rule.

I have absolutely no way of knowing how long we labored at this Augean enterprise; my watch had been taken from me, of course, and of the strange dislocation of my normal time-sense I have already spoken. I do remember that floodlights had been turned on long before a raucous alarm sounded, indicating that it was time for supper.

My weariness from the unaccustomed toil had carried me past the point of hunger, but I do remember my first meal at the Farm. We had dumplings. You usually think fondly of dumplings as being *in* or *with* something. We had just dumplings—cold and not quite cooked through.

Impressions of this character have a way of entrenching themselves, perhaps at the cost of more meaningful ones. Conversation at the Farm was monosyllabic and infrequent, so it may merely be that I recall most lucidly those incidents with which some sort of communication was associated. A small man sitting opposite me in the mess hall gloomily indicated the dumpling at which I was picking dubiously.

"They'll bind ya," he said with the finality of special and personal knowledge. "Ya don't wanta let yaself get bound here. They've got a—"

I don't now recall whether I said something or whether I merely held up my hand. I do know that I had no wish to dwell on the subject.

If I had hoped for respite after "supper," it was at that time that I learned not to hope. Back to "The Big Rock Candy Mountain" we went, and under the bleak, iridescent glare of the lights we resumed our labor of no reward. One by one I felt my synapses parting, and one by one, slowly and certainly, the fragile membranes separating the minute from the hour, the Now from the Then, and the epoch out of unmeasured time softened and sloughed away. I was, at last, Number 109 at work on a monstrous manure pile, and I labored with the muscles and nerves of an undifferentiated man. I experienced change.

I knew now that my identity, my ego, was an infinitesimal thing which rode along embedded in a mountain of more or less integrated organisms, more or less purposeful tissues, fluids and loosely articulated bones, as a tiny child rides in the cab of a locomotive. And the rain came down and the manure bags broke and we scrabbled with our hands to refill new ones.

The raucous alarm sounded again, and a voice which might have been that of a hospital nurse or of an outraged parrot announced that it was time for "Beddy-by." And in a continuous, unbroken motion we slogged into another long building, discarded our coveralls, waded through a shallow tank of cloudy disinfectant solution and were finally hosed down by the guards. I remember observing to myself giddily that I now knew how cars must feel in an auto laundry. There were clean towels waiting for us at the far end of the long building, but I must have just blotted the excess water off myself in a perfunctory way, because I still felt wet when I donned the clean coverall that someone handed me.

"Beddy-by" was one of a row of thirty-odd slightly padded planks like ironing boards, which were arranged at intervals of less than three feet in another long, low-ceilinged barracks. I knew that I would find no real release in "Beddy-by"—only another dimension of that abiding stupor which now served me for consciousness. I may have groaned, creaked, whimpered, or expressed myself in some other inarticulate way as I measured the length of the board with my carcass; I only remember that the others did so. There was an unshaded light bulb hanging directly over my face. To this day, I cannot be sure that this bleak beacon was ever turned off. I think not. I can only say with certainty that it was burning just as brightly when the raucous signal sounded again, and the unoiled voice from the loudspeaker announced that it was time for the morning Cheer-Up Entertainment.

THESE orgies, it turned out, were held in the building housing the admission office. There was a speech choir made up of elderly women, all of whom wore the black uniform of the Farm matrons. The

realization that a speech choir still existed may have startled me into a somewhat higher state of awareness; I had assumed that the speech choir had gone out with hair-receivers and humoristic medicine. The things they recited were in a childishly simple verse form: *One and two and three and four; One and two and THREE.* These verses had to do with the virtues of endless toil, the importance of thrift, and the hideous dangers lurking in cigarette smoking and needless borrowing.

I am happy to report that I do not remember them more specifically than this, but I was probably more impressed by the delivery than the message delivered. I could not imagine where they had discovered these women. During their performance, some sense of duration was restored to me; while I could be certain of nothing pertaining to the passage of time, it is not possible that the Cheer-Up period lasted less than two hours. Then they let us go to the latrine.

After a breakfast of boiled cabbage and dry pumpernickel crusts —more savory than you might imagine—we were assigned to our work for the day. I had expected to return to the manure pile, but got instead the rock quarry. I remember observing then, with no surprise at all, that the sun was out and the day promised to be a hot one.

The work at the rock quarry was organized according to the same futilitarian pattern that governed the manure-pile operation. Rock had to be hacked, pried and blasted from one end of the quarry, then reduced to coarse gravel with sledgehammers and carted to the other end of the excavation in wheelbarrows. Most of the men commenced working at some task in the quarry with the automatic unconcern of trained beasts who have paused for rest and water, perhaps, but have never fully stopped. A guard indicated a wheelbarrow to me and uttered a sharp sound . . . . something like HUP! I picked up the smooth handles of the barrow, and time turned its back upon us again.

It was that night—or perhaps the following night—that Bertha and I had our first fifteen-minute visit with each other. She was changed: her face glowed with feverish vitality, her hair was stringy and moist, and her eyes were serenely glassy. She had not been more provocative in twenty-five years. An old dormant excitement stirred within me —microscopically but unmistakably.

She told me that she had been put to work in the jute mill, but had passed out and had been transferred to the steam laundry. Her job in the laundry was to sort out the socks and underwear that were too bad to go in with the rest of the wash. We speculated on where the socks and underwear could have come from, as such fripperies were denied to us at the Farm. We also wondered about the manure, considering that no animals were in evidence here. Both, we concluded, must have been shipped in specially from the Outside. We found it in us to giggle, when the end of the visit was announced, over our own

choice of conversational material for that precious quarter hour. Thereafter, when we could catch glimpses of each other during the day, we would exchange furtive signals, then go about our work exhilarated by the fiction that we shared some priceless Cabalistic knowledge.

The grim Captain made an appearance in the rock quarry one morning just as we were beginning work. He stood on top of a pile of stones, swinging his kidney-sap from his wrist and letting his eyes sweep over us as though selecting one for slaughter.

When the silence had soaked in thoroughly, he announced in his cold, incisive tone that "there will be no rest periods, no chow, no 'Beddy-by,' until this entire rock face is reduced to ballast rock." He indicated a towering slab of stone. We raised our heads only long enough to reassure ourselves of the utter hopelessness of the task before us. Not daring to look at each other closely, fearing to see our own despair reflected in the faces of others, we picked up our hammers and crowbars and crawled to the top of the monolithic mass. The film must have cleared from my eyes then, momentarily.

"Why—this thing is nothing but a huge writing slate," I said to a small, bald inmate beside me. He made a feeble noise in reply. The Captain left, and the only other guard now relaxed in the shade of a boulder nearly fifty yards away. He was smoking a forbidden cigar. Suddenly and unaccountably, I felt a little taller than the others, and everything looked unnaturally clear. The slab was less than six inches wide at the top!

"If we work this thing right, this job will practically do itself. We'll be through here before sundown," I heard myself snap out. The others, accustomed now to obeying any imperative voice, fell to with crowbars and peaveys as I directed them. "Use them as levers," I said. "Don't just flail and hack—pry!" No one questioned me. When all of the tools were in position I gave the count:

"One—two—HEAVE!"

The huge slab finally leaned out, wavered for a queasy moment, then fell with a splintering crash onto the boulders below. After the dust settled, we could see that much of the work of breaking up the mass was already accomplished. We descended and set to work with an enthusiasm that was new.

Long before sundown, of course, we were marched back to the latrine and then to the mess hall. Later I had expected that some further work would be thrust upon us, but it didn't happen. The grim Captain stopped me as I entered the mess hall. I froze. There was a queer smile on his face, and I had grown to fear novelty.

"You had a moment," he said, simply and declaratively. "You didn't miss it, did you?"

"No," I replied, not fully understanding. "No, I didn't miss it."

"You are more fortunate than most," he went no, still standing between me and the mess hall. "Some people come here year after year, or they go to other places like

this, or permit themselves to be confined in the hulls of old submarines, and some even apprentice themselves to medical missionaries in Equatorial Africa; they expose themselves to every conceivable combination of external conditions, but nothing really happens to them. They feel nothing except a fleeting sensation of contrast—soon lost in a torrent of other sensations. No 'moment'; only a brief cessation of the continuing pleasure process. You have been one of the fortunate few, Mr. Devoe."

Then the film dissolved—finally and completely—from the surface of my brain, and my sense of time returned to me in a flood of ordered recollections. Hours and days began to arrange themselves into meaningful sequence. Was it possible that two whole glorious weeks could have passed so swiftly?

"You and Mrs. Devoe may leave tonight or in the morning, just as you prefer," said the Captain.

BERTHA and I have had little to say to one another as we wait in the office for the car that will take us to the heliport. For the moment—this moment—it suffices that we stand here in our own clothes, that we have tasted coffee again, brought to us on a tray by a matron whose manner towards us bordered on the obsequious, and that the aroma of a cigarette is just as gratifying as ever.

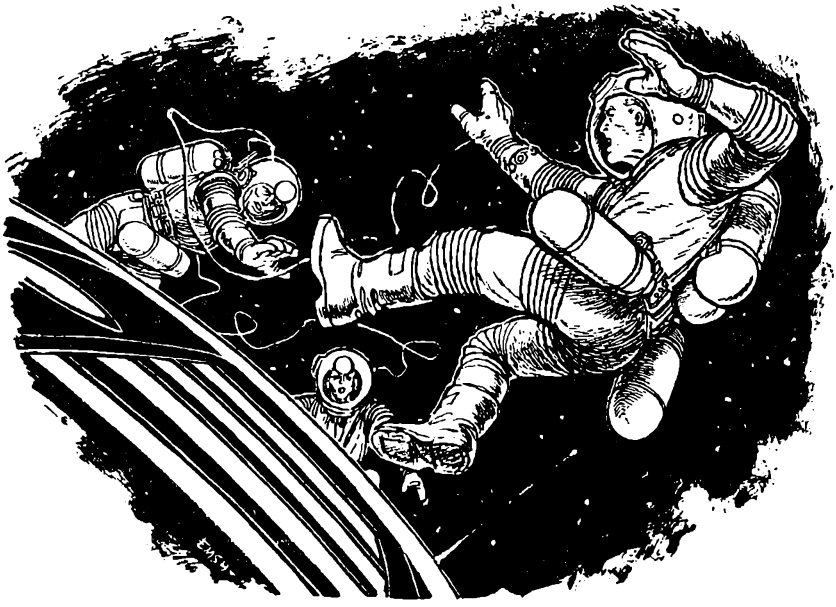
We will go back to our ten-room apartment on the ninety-first floor of the New Empire State Hotel; back to our swimming pool, our three-dimensional color television, our anti-gravity sleeping chambers, our impeccably efficient, relentlessly cheerful robot servants, and our library of thrills, entertainment, solace, diversion and escape—all impressed on magnetic tape and awaiting our pleasure.

I will go back to my five kinds of cigars and my sixteen kinds of brandy; Bertha will return to her endless fantasy of pastries and desserts—an endless, joyous parade of goodies, never farther away than the nearest dumb-waiter door. And we will both become softer, heavier, a little less responsive.

When, as sometimes happens, the sweet lethargy threatens to choke off our breath, we will step into our flying platform and set its automatic controls for Miami, Palm Beach, or the Cote d'Azur. There are conducted tours to the Himalayas now, or to the "lost" cities of the South American jungles, or to the bottom of any one of the seven seas. We will bide our time, much as others do.

But we will survive these things: I still have my four hours per month at Central Computing and Control; Bertha has her endless and endlessly varying work on committees (the last one was dedicated to the abolition of gambling at Las Vegas in favor of such wholesome games as Scrabble and checkers).

We cannot soften and slough away altogether, for when all else fails, when the last stronghold of the spirit is in peril, there is always the vision of year's end and another glorious vacation. **END**



"Quick! I'm off!"

SATELLITE PASSAGE

BY THEODORE L. THOMAS

It had to come sooner or later

—the perilous moment when

Our satellite crossed the orbit

of Theirs. . .

THE THREE men bent over the chart and once again computed the orbit. It was quiet in the satellite, a busy quiet broken by the click of seeking microswitches and the gentle purr of smooth-running motors. The deep pulsing throb of the air conditioner had stopped: the satellite was in the Earth's shadow and there was no need for cooling the interior.

"Well," said Morgan, "it checks. We'll pass within fifty feet of the other satellite. Too close. Think we ought to move?"

Kaufman looked at him and did not speak. McNary glanced up and snorted. Morgan nodded. He said, "That's right. If there's any moving to be done, let them do it." He felt a curious nascent emotion, a blend of anger and exhilaration—very faint now, just strong enough to be recognizable. The pencil snapped in his fingers, and he stared at it, and smiled.

Kaufman said, "Any way we can reline this a little? Fifty feet cuts it kind of close."

They were silent, and the murmuring of machinery filled the cramped room. "How's this?" said McNary. "Wait till we see the other satellite, take a couple of readings on it, and compute the orbit again. We'd have about five minutes to make the calculations. Morgan here can do it in less than that. Then we'd know if we're on a collision course."

Morgan nodded. "We could do it that way." He studied the chart in front of him. "The only thing, those boys on the other satellite will see what we're doing. They'll know we're afraid of a collision. They'll radio it down to Earth, and—you know the Russian mind—we'll lose face."

"That so bad?" asked Kaufman.

Morgan stared at the chart. He answered softly, "Yes, I think it is. The Russians will milk it dry if we make any move to get our satellite out of the way of theirs. We can't do that to our people."

McNary nodded. Kaufman said, "Agree. Just wanted to throw it out. We stay put. We hit, we hit."

The other two looked at Kaufman. The abrupt dismissal of a serious problem was characteristic of the little astronomer; Kaufman wasted no time with second guesses. A decision made was a fact accomplished; it was over.

Morgan glanced at McNary to see how he was taking it. McNary, now, big as he was, was a worrier. He stood ready to change his mind at any time, whenever some new alternative looked better. Only the soundness of his judgment prevented his being putty in any strong hands. He was a meteorologist, and a good one.

"You know," said McNary, "I still can't quite believe it. Two satellites, one pole-to-pole, the other equatorial, both having apogees and perigees of different elevations—yet they wind up on what amounts to a collision course."

Morgan said, "That's what regression will do for you. But we haven't got any time for that; we've got to think this out. Let's see, they'll be coming up from below us at passage. Can we make anything of that?"

There was silence while the three men considered it. Morgan's mind was focussed on the thing that was about to happen; but wisps of memory intruded. Faintly he could hear the waves, smell the bite in the salt sea air. A man who had sailed a thirty-two-foot ketch alone into every corner of the globe never thereafter quite lost the sound of the sea in his ear. And the struggle,

the duel, the strain of outguessing the implacable elements, there was a test of a man. . . .

"Better be outside in any case," said Kaufman. "Suited up and outside. They'll see us, and know we intend to do nothing to avoid collision. Also, we'll be in a better position to cope with anything that comes along, if we're in the suits."

Morgan and McNary nodded, and again there was talk. They discussed the desirability of radio communication with the other satellite, and decided against it. To keep their own conversations private, they agreed to use telephone communication instead of radio. When the discussion trailed off, Kaufman said, "Be some picture, if we have the course computed right. We stand there and wave at 'em as they go by."

Morgan tried to see it in his mind: three men standing on a long, slim tube, and waving at three men on another. The first rocket passage, and men waving. And then Morgan remembered something, and the image changed.

He saw the flimsy, awkward planes sputtering past each other on the morning's mission. The pilots, detached observers, noncombatants really, waved at each other as the rickety planes passed. Kindred souls they were, high above the walks of normal men. So they waved . . . for a while.

Morgan said, "Do you suppose they'll try anything?"

"Like what?" said Kaufman.

"Like knocking us out of orbit if they can. Like shooting at us if they have a gun. Like throwing something at us, if they've got nothing better to do."

"My God," said McNary, "you think they might have brought a gun up here?"

Morgan began examining the interior of the tiny cabin. Slowly he turned his head, looking at one piece of equipment after another, visualizing what was packed away under it and behind it. To the right of the radio was the spacesuit locker, and his glance lingered there. He reached over, opened the door and slipped a hand under the suits packed in the locker. For a moment he fumbled and then he sat back holding an oxygen flask in his hand. He hefted the small steel flask and looked at Kaufman. "Can you think of anything better than this for throwing?"

Kaufman took it and hefted it in his turn, and passed it to McNary. McNary did the same and then carefully held it in front of him and took his hand away. The flask remained poised in mid-air, motionless. Kaufman shook his head and said, "I can't think of anything better. It's got good mass, fits the hand well. It'll do."

Morgan said, "Another thing. We clip extra flasks to our belts and they look like part of the standard equipment. It won't be obvious that we're carrying something we can throw."

McNary gently pushed the flask toward Morgan, who caught it and replaced it. McNary said, "I used to throw a hot pass at Berkeley. I wonder how the old arm is."

The discussion went on. At one point the radio came to life and

Kaufman had a lengthy conversation with one of the control points on the surface of the planet below. They talked in code. It was agreed that the American satellite should not move to make room for the other, and this information was carefully leaked so the Russians would be aware of the decision.

The only difficulty was that the Russians also leaked the information that their satellite would not move, either.

A final check of the two orbits revealed no change. Kaufman switched off the set.

"That," he said, "is the whole of it."

"They're leaving us pretty much on our own," said McNary.

"Couldn't be any other way," Morgan answered. "We're the ones at the scene. Besides—" he smiled his tight smile—"they trust us."

Kaufman snorted. "Ought to. They went to enough trouble to pick us."

McNary looked at the chronometer and said, "Three quarters of an hour to passage. We'd better suit up."

MORGAN NODDED and reached again into the suit locker. The top suit was McNary's, and as he worked his way into it, Morgan and Kaufman pressed against the walls to give him room. Kaufman was next, and then Morgan. They sat out the helmets, and while Kaufman and McNary made a final check of the equipment, Morgan took several sights to verify their position.

"Luck," said Kaufman, and dropped his helmet over his head. The others followed and they all went through the air-sealing checkoff. They passed the telephone wire around, and tested the circuit. Morgan handed out extra oxygen flasks, three for each. Kaufman waved, squeezed into the air lock and pulled the hatch closed behind him. McNary went next, then Morgan.

Morgan carefully pulled himself erect alongside the outer hatch and plugged the telephone jack into his helmet. As he straightened, he saw the Earth directly in front of him. It loomed large, visible as a great mass of blackness cutting off the harsh white starshine. The blackness was smudged with irregular patches of orangish light that marked the cities of Earth.

Morgan became aware that McNary, beside him, was pointing toward the center of the Earth. Following the line of his finger Morgan could see a slight flicker of light against the blackness; it was so faint that he had to look above it to see it.

"Storm," said McNary. "Just below the equator. It must be a pip if we can see the lightning through the clouds from here. I've been watching it develop for the last two days."

Morgan stared, and nodded to himself. He knew what it was like down there. The familiar feeling was building up, stronger now as the time to passage drew closer. First the waiting. The sea, restless in expectancy as the waves tossed their hoary manes. The gathering

majesty of the elements, reaching, searching, striving. . . . And if at the height of the contest the screaming wind snatched up and smothered a defiant roar from a mortal throat, there was none to tell of it.

Then the time came when the forces waned. A slight let-up at first, then another. Soon the toothed and jagged edge of the waves subsided, the hard side-driven spray and rain assumed a more normal direction.

The man looked after the departing storm, and there was pain in his eyes, longing. Almost, the words rose to his lips, "Come back, I am still here, do not leave me, come back." But the silent supplication went unanswered, and the man was left with a taste of glory gone, with an emptiness that drained the soul. The encounter had ended, the man had won. But the winning was bitter. The hard fight was not hard enough. Somewhere there must be a test sufficient to try the mettle of this man. Somewhere there was a crucible hot enough to float any dross. But where? The man searched and searched, but could not find it.

Morgan turned his head away from the storm and saw that Kaufman and McNary had walked to the top of the satellite. Carefully he turned his body and began placing one foot in front of the other to join them. Yes, he thought, men must always be on top, even if the top is only a state of mind. Here on the outer surface of the satellite, clinging to the metallic skin with shoes of magnetized alloy, there was no top. One direction was the same as another, as with a fly walking on a chandelier. Yet some primordial impulse drove a man to that position which he considered the top, drove him to stand with his feet pointed toward the Earth and his head toward the outer reaches where the stars moved.

Walking under these conditions was difficult, so Morgan moved with care. The feet could easily tread ahead of the man without his knowing it, or they could lag behind. A slight unthinking motion could detach the shoes from the satellite, leaving the man floating free, unable to return. So Morgan moved with care, keeping the telephone line clear with one hand.

When he reached the others, Morgan stopped and looked around. The sight always gave him pause. It was not pretty; rather, it was harsh and garish like the raucous illumination of a honkytonk saloon. The black was too black, and the stars burned too white. Everything appeared sharp and hard, with none of the softness seen from the Earth.

Morgan stared, and his lips curled back over his teeth. The anticipation inside him grew greater. No sound and fury here; the menace was of a different sort. Looming, quietly foreboding, it was everywhere.

Morgan leaned back to look overhead, and his lips curled further. This was where it might come, this was the place. Raw space, where a man moved and breathed in momentary peril, where cosmic debris formed arrow-swift reefs on which

to founder, where star-born particles traveled at unthinkable speeds out of the macrocosm seeking some fragile microcosm to shatter.

"Sun." Kaufman's voice echoed tinnily inside the helmet. Morgan brought his head down. There, ahead, a tinge of deep red edged a narrow segment of the black Earth. The red brightened rapidly, and broadened. Morgan reached to one side of his helmet and dropped a filter into place; he continued to stare at the sun.

McNARY SAID, "Ten minutes to passage."

Morgan unhooked one of the oxygen cylinders at his belt and said, "We need some practice. We'd better try throwing one of these now; not much time left." He turned sideways and made several throwing motions with his right hand without releasing the cylinder. "Better lean into it more than you would down below. Well, here goes." He pushed the telephone line clear of his right side and leaned back, raising his right arm. He began to lean forward. When it seemed that he must topple, he snapped his arm down and threw the cylinder. The recoil straightened him neatly, and he stood securely upright. The cylinder shot out and down in a straight line and was quickly lost to sight.

"Very nice," said McNary. "Good timing. I'll keep mine low too. No sense cluttering the orbits up here with any more junk." Carefully McNary leaned back, leaned forward, and threw. The second cylinder followed the first, and McNary kept his footing.

Without speaking Kaufman went through the preliminaries and launched his cylinder. Morgan and McNary watched it speed into the distance. "Shooting stars on Earth tonight," said McNary.

"Quick! I'm off." It was Kaufman.

Morgan and McNary turned to see Kaufman floating several feet above the satellite, and slowly receding. Morgan stepped toward him and scooped up the telephone wire that ran to Kaufman's helmet. Kaufman swung an arm in a circle so that it became entangled in the wire. Morgan carefully drew the wire taut and checked Kaufman's outward motion. Gently, so as not to snap the wire, he slowly reeled him in. McNary grasped Kaufman's shoulders and turned him so that his feet touched the metal shell of the satellite.

McNary chuckled and said, "Why didn't you ride an oxygen cylinder down?"

Kaufman grunted and said, "Oh, sure. I'll leave that to the idiots in the movies; that's the only place a man can ride a cylinder in space." He turned to Morgan. "Thanks. Do as much for you some day."

"Hope you don't have to," Morgan answered. "Look, any throwing to be done, you better leave it to Mac and me. We can't be fishing anyone back if things get hot."

"Right," said Kaufman. "I'll do what I can to fend off anything they throw at us." He sniffed. "Be simpler if we have a collision."

Morgan was staring to the left.

He lifted a hand and pointed. "That it?"

The others squinted in that direction. After a moment they saw the spot of light moving swiftly up and across the black backdrop of the naked sky. "Must be," said Kaufman. "Right time, right place. Must be."

Morgan promptly turned his back on the sun and closed his eyes; he would need his best vision shortly now, and he wanted his pupils dilated as much as possible. "Make anything out yet?" he said.

"No. Little brighter."

Morgan stood without moving. He could feel the heat on his back as his suit seized the radiant energy from the sun and converted it to heat. He grew warm at the back, yet his front remained cold. The sensation was familiar, and Morgan sought to place it. Yes, that was it —a fireplace. He felt as does a man who stands in a cold room with his back toward a roaring fire. One side toasted, the other side frigid. Funny, the homey sensations, even here.

"Damn face plate." It was Kaufman. He had scraped the front of his helmet against the outside hatch a week ago. Since then the scratches distracted him every time he wore the helmet.

Morgan waited, and the exultation seethed and bubbled and fumed. "Anything?" he said.

"It's brighter," said McNary. "But—wait a minute, I can make it out. They're outside, the three of them. I can just see them."

It was time. Morgan turned to face the approaching satellite. He raised a hand to shield his face plate from the sun and carefully opened his eyes. He shifted his hand into the proper position and studied the other satellite.

It was like their own, even to the three men standing on it, except that the three were spaced further apart.

"Any sign of a rifle or gun?" asked McNary.

"Not that I see," said Morgan. "They're not close enough to tell."

He watched the other satellite grow larger and he tried to judge its course, but it was too far away. Although his eyes were on the satellite, his side vision noted the bright-lit Earth below and the stars beyond. A small part of his mind was amused by his own stubborn egocentricity. Knowing well that he was moving and moving fast, he still felt that he stood motionless while the rest of the universe revolved around him. The great globe seemed to be majestically turning under his rooted feet. The harsh brilliances that were the stars seemed to sweep by overhead. And that oncoming satellite, it seemed not to move so much as merely swell in size as he watched.

One of the tiny figures on the other satellite shifted its position toward the others. Sensitive to the smallest detail, Morgan said, "He didn't clear a line when he walked. No telephone. They're on radio. See if we can find the frequency. Mac, take the low. Shorty, the medium. I'll take the high."

Morgan reached to his helmet and began turning the channel se-

(Continued on page 115)

THE NIGHT OF HOGGY DARN

BY

R. M.

McKENNA

The talented author of "The Fishdollar Affair" returns with another compelling story of a frontier world—grim New Cornwall of the Black Learning.

Four still lived, their legs crudely hamstrung. . . .

RED-HAIRED Flinter Cole sipped his black coffee and looked around the chrome and white tile galley of Space Freighter *Gorbals*, in which he was riding down the last joint of a dogleg journey to the hermit planet of New Cornwall.

"Nothing's been published about the planet for the last five hundred years," he said in a nervous, jerky voice. "You people on *Gorbals* at least *see* the place, and I understand you're the only ship that does."

"That's right, twice every standard year," said the cook. He was a placid, squinting man, pink in his crisp whites. "But like I said, no girls, no drinks, nothing down there but hard looks and a punch in the nose for being curious. We mostly stay aboard, up in orbit. Them New Cornish are the biggest, meanest men I ever did see, Doc."

"I'm not a real doctor yet," Cole said, glancing down at the scholar grays he was wearing. "If I don't do a good job on New Cornwall I may never be. This is my Ph. D.

trial field assignment. I should be *stuffing* myself with data on the ecosystem so I can ask the right questions when I get there. But there's nothing!"

"What's a pee aitch dee?"

"That's being a doctor. I'm an ecologist—that means I deal with everything alive, and the way it all works in with climate and geography. I can use *any* kind of data. I have only six months until *Gorbals* comes again to make my survey and report. If I fumble away my doctorate, and I'm twenty-three already. . . ." Cole knitted shaggy red eyebrows in worry.

"Well hell, Doc, I can tell you things like, it's got four moons and only one whopper of a continent and it's low grav, and the forest there you won't believe even when you see it—"

"I need to know about *stompers*. Bidgrass Company wants Belconti U. to save them from extinction, but they didn't say what the threat is. They sent travel directions, a visa and passage scrip for just one man. And I only had two days for packing and library research, before I had to jump to Tristan in order to catch this ship. I've been running in the dark ever since. You'd think the Bidgrass people didn't really care."

"Price of stomper egg what it is, I doubt that," the cook said, scratching his fat jaw. "But for a fact, they're shipping less these days. Must be some kind of trouble. I never saw a stomper, but they say they're big birds that live in the forest."

"You see? The few old journal articles I did find, said they were flightless bird-homologs that lived on the plains and preyed on the great herds of something called darv cattle."

"Nothing but forest and sea for thousands of miles around Bidgrass Station, Doc. Stompers are pure hell on big long legs, they say."

"There again! *I* read they were harmless to man."

"Tell you what, you talk to Daley. He's cargo officer and has to go down with each tender trip. He'll maybe know something can help you."

The cook turned away to inspect his ovens. Cole put down his cup and clamped a freckled hand over his chin, thinking. He thought about stomper eggs, New Cornwall's sole export and apparently, for five hundred years, its one link with the other planets of Carina sector. Their reputedly indescribable flavor had endeared them to gourmets on a hundred planets. They were symbols of conspicuous consumption for the ostentatious wealthy. No wonder most of the literature under the New Cornwall reference had turned out to be cookbooks.

Orphaned and impecunious, a self-made scholar, Cole had never tasted stomper egg.

The cook slammed an oven door on the fresh bread smell.

"Just thought, Doc. I keep a can or two of stomper egg, squeeze it from cargo for when I got a passenger to feed. How'd you like a mess for chow tonight?"

"Why not?" Cole said, grinning suddenly. "Anything may be data

for an ecologist, especially if it's good to eat."

The stomper egg came to the officers' mess table as a heaped platter of bite-sized golden spheres, deep-fried in bittra oil. Their delicate, porous texture hardly required chewing. Their flavor was like—cinnamon? Peppery sandalwood? Yes, yes, and yet unique. . . .

Cole realized in confusion that he had eaten half the platterful and the other six men had not had any. He groped for a lost feeling—was it that he and the others formed a connected biomass and that he could eat for all of them? Ridiculous!

"I'm a pig," he laughed weakly. "Here, Mr. Daley, have some."

Daley, a gingery, spry little man, said "By me" and slid the platter along. It rounded the table and returned to Cole untouched.

"Fall to, Doc." Daley said, grinning.

Cole was already reaching . . . lying in his stateroom and he *was* the bunk cradling a taut, messianic body flaming with imageless dreams. He dreamed himself asleep and slept himself into shamed wakefulness needing coffee.

It was ship-night. Cole walked through dimmed lights to the galley and carried his cup of hot black coffee to main control, where he found Daley on watch, lounging against the gray enamel computer.

"I feel like a fool," Cole said.

"You're a martyr to science, Doc. Which reminds me, Cookie told me you got questions about Bidgrass Station."

"Well yes, about stompers. What's wiping them out, what's their habitat and life pattern, oh anything."

"I learned quick not to ask about stompers. I gather they're twenty feet high or so and they're penned up behind a stockade. I never saw one."

"Well dammit! I read they couldn't be domesticated."

"They're not. Bidgrass Station is in a clearing the New Cornish cut from sea to sea across a narrow neck of land. On the west is this stockade and beyond it is Lundy Peninsula, a good half-million square miles of the damndest forest ever grew on any planet. That's where the stompers are."

"How thickly settled is this Lundy Peninsula?"

"Not a soul there, Doc. The settlement is around Car Truro on the east coast, twelve thousand miles east of Bidgrass. I never been there, but you can see from the air it isn't much."

"How big a city is Bidgrass? Does it have a university?"

Daley smiled again and shook his head. "They got fields and pastures, but it's more like a military camp than a town. I see barracks for the workers and egg hunters, hangars and shops, a big egg-processing plant and warehouses around the landing field. I never get away from the field, but I'd guess four, five thousand people at Bidgrass."

Cole sighed and put down his cup on the log desk.

"What is it they import, one half so precious as the stuff they sell?"

Daley chuckled and rocked on

his toes. "Drugs, chemicals, machinery parts, hundreds of tons of Warburton energy capsules. Pistols, blasters, cases of flame charge, tanks of fire mist—you'd think they had a war on."

"That's no help. I'll make up for lost time when I get there. I'll beat their ears off with questions."

Daley's gnomish face grew serious. "Watch what you ask and who you ask, Doc. They're suspicious as hell and they hate strangers."

"They need my help. Besides. I'll deal only with scientists."

"Bidgrass isn't much like a campus. I don't know, Doc, something's wrong on that planet and I'm always glad to lift out."

"Why didn't you and the others eat any of that stomper egg?" Cole asked abruptly.

"Because the people at Bidgrass turn sick and want to slug you if you mention eating it. That's reason enough for me."

Well, that was data too, Cole thought, heading back to his stateroom.

TWO DAYS later Daley piloted the cargo tender down in a three-lap braking spiral around New Cornwall. Cole sat beside him in the cramped control room, eyes fixed on the view panel. Once he had the bright and barren moon Cairdween at upper left, above a vastly curving sweep of sun-glinting ocean, and he caught his breath in wonder.

"I know the feeling, Doc," Daley said softly. "Like being a giant and jumping from world to world."

Clouds obscured much of the sprawling, multi-lobed single continent. The sharpening of outline and hint of regularity Cole remembered noting on Tristan and his own planet of Belconti, the mark of man, was absent here. Yet New Cornwall, as a human settlement, was two hundred years older than Belconti.

The forests stretched across the south and west, broken by uplands and rain shadows, as the old books said. He saw between cloud patches the glint of lakes and the crumpled leaf drainage pattern of the great northeastern plain but, oddly, the plain was darker in color than the pinkish-yellow forest. He mentioned it to Daley.

"It's flowers and vines and moss makes it that color," the little man said, busy with controls. "Whole world in that forest top—snakes, birds, jumping things big as horses. Doc, them trees are *big*."

"Of course! I read about the epiphytal biota. And low gravity always conduces to gigantism."

"There's Lundy," Daley grunted, pointing.

It looked like a grinning ovoid monster-head straining into the western ocean at the end of a threadlike neck. Across the neck Bidgrass Station slashed between parallel lines of forest edge like a collar. Cole watched it again on the landing approach, noting the half-mile of clearing between the great wall and the forest edge, the buildings and fields rectilinear in ordered clumps east of the wall, and then the light aberration of the tender's lift field blotted it out.

"Likely I won't see you till next trip," Daley said, taking leave. "Good luck, Doc."

Cole shuffled down the personnel ramp, grateful for the weight of his two bags in the absurdly light gravity. Trucks and cargo lifts were coming across the white field from the silvery warehouses along its edge. Men also, shaggy-haired big men in loose blue garments, walking oddly without the stride and drive of leg muscles. Their faces were uniformly grim and blank to Cole, standing there uncertainly. Then a ground car pulled up and a tall old man in the same rough clothing got out and walked directly toward him. He had white hair, bushy white eyebrows over deep-set gray eyes, and a commanding beak of a nose.

"Who might you be?" he demanded.

"I'm Flinter Cole, from Belconti University. Someone here is expecting me."

The old man squinted in thought and bit his lower lip. Finally he said, "The biologist, hey? Didn't expect you until next *Gorbals*. Didn't think you could make the connections for this one."

"It left me no time at all to study up in. But when species extinction is the issue, time is important. And I'm an ecologist."

"Well," the old man said. "Well. I'm Garth Bidgrass."

He shook Cole's hand, a powerful grip quickly released.

"Hawkins there in the car will take you to the manor house and get you settled. I'll phone ahead. I'll be tied up checking cargo for a day or two, I expect. You just rest up awhile."

He spoke to the driver in what sounded like Old English, then moved rapidly across the field toward the warehouses in the same strange walk as the other men. As far as Cole could see, he did not bend his knees at all.

Hawkins, also old but frail and stooped, took Cole's bags to the car. When the ecologist tried to follow him he almost fell headlong, then managed a stiff-legged shuffle. Momentarily he longed for the Earth-normal gravity of Belconti and the ship.

They drove past unfenced fields green with vegetable and cereal crops, and fenced pastures holding beef and dairy cattle of the old Earth breeds. It was a typical human ecosystem. Then they passed a group of field workers, and surprise jolted the ecologist. They were huge —eight or nine feet tall, both men and women, all with long hair and some of them naked. They did not look up.

Cole looked at Hawkins. The old man glared at him from red-rimmed eyes and chattered something in archaic English. He speeded up, losing the giants behind a hedge, and the manor house with the palisade behind it loomed ahead.

The great fence dwarfed the house. Single baulks of grassy brown timber ten feet on a side soared two hundred feet into the air, intricately braced and stayed. High above, a flyer drifted as if on sentry duty. Half a mile beyond, dwarfing the fence in its turn, arose the thou-

sand-foot black escarpment of the forest edge.

The manor house huddled in a walled garden with armed guards at the gate. It was two-storied and sprawling, with a flat-roofed watch tower at the southeast corner, and made of the same glassy brown timber. Hawkins stopped the car by the pillared veranda where a lumpy, gray, nondescript woman waited. Cole got out, awkwardly careful in the light gravity.

The woman would not meet his glance. "I'm Flada Vignoli, Mr. Bidgrass's niece and housekeeper," she said in a dead voice. "I'll show you your rooms." She turned away before Cole could respond.

"Let me carry the bags, I need to," he said to Hawkins, laughing uncertainly. The old man hoisted his skinny shoulders and spat.

The rooms were on the second floor, comfortable but archaic in style. The gray woman told him that Hawkins would bring his meals, that Garth Bidgrass would see him in a few days to make plans, and that Mr. Bidgrass thought he should not go about unescorted until he knew more about local conditions.

Cole nodded. "I'll want to confer with your leading biologists, Mrs. Vignoli, as soon as I can. For today, can you get me a copy of your most recent biotic survey?"

"Ain't any biologists, ain't any surveys," she said, standing in the half-closed door.

"Well, any recent book about stompers or your general zoölogy. It's important that I start at once."

The face under the scraggly gray hair went blanker still. "You'll have to talk to Mr. Bidgrass." She closed the door.

Cole unpacked, bathed, dressed again and explored his three rooms. Like a museum, he thought. He looked out his west windows at the palisade and forest edge. Then he decided to go downstairs, and found his door was locked.

The shock was more fear than indignation, he realized, wondering at himself. He paced his sitting room, thinking about his scholarly status and the wealth and power of Belconti, until he had the indignation flaming. Then a knock came at the door and it opened to reveal old Hawkins with a wheeled food tray.

"What do you mean, locking me in?" Cole asked hotly.

He pushed past the food tray into the hall. Hawkins danced and made shooing motions with his hands, chattering shrilly in the vernacular. Cole walked to the railing around the stairwell and looked down. At the foot of the stair a giant figure, man or woman he could not say, sat and busied itself with something in its lap.

Cole went back into his room. The food was boiled beef, potatoes and beets, plain but plentiful, plus bread and coffee. He ate heartily and looked out his windows again to see night coming on. Finally he tried the door and it was not locked. He shrugged, pushed the food tray into the hall and closed the door again. Then he shot the inside bolt.

In bed, he finally dropped off into a restless, disturbed sleep.

EMBOLDENED by morning and a hearty tray breakfast, Cole explored. He was in a two-floor wing, and the doors into the main house were locked. Through them he heard voices and domestic clatter. Unlocked across the second-floor hall was another suite of rooms like his own. Downstairs was still another suite and along the south side a library. The door into the garden was locked.

My kingdom, Cole thought wryly. Prisoner of state!

He explored the library. Tristanian books, historical romances for the most part, none less than three hundred years old. No periodicals, nothing of New Cornwall publication. He drifted from window to window looking out at the formal garden of flower beds, hedges and white sand paths. Then he saw the girl.

She knelt in a sleeveless gray dress trimming a hedge. Her tanned and rounded arms had dimpled elbows, he noted. She turned suddenly and he saw, framed by reddish-brown curls, her oval face with small nose and firm chin. The face was unsuitably grave and the eyes wide.

She was not staring at his window, Cole decided after a qualm, but listening. Then she rose, picked up her basket of trimmings and glided around the corner of the house. Before he could pursue her plump vision to another window, a man appeared.

He looked taller than Cole and was built massively as a stone. Straight black hair fell to his shoulders, cut square across his forehead and bound by a white fillet. Under the black bar of eyebrow the heavy face held itself in grim, unsmiling lines. He moved with that odd, unstriding New Cornish walk that suggested tremendous power held in leash.

Cole crossed the hall and watched the blue-clad form enter a door in the wing opposite. The girl was nowhere. Again Cole felt a twinge of fear, and boiled up anger to mask it.

Inside looking out, he thought. Peeping like an ecologist in a bird blind!

When Hawkins brought lunch Cole raged at him and demanded to see Garth Bidgrass. The old man chattered incomprehensibly and danced like a fighting cock. Thwarted, the ecologist ate moodily and went down to the library. The garden was empty and he decided on impulse to open a window. A way of retreat, but from what and to where, he wondered as he worked at the fastenings. Just as he got it free, a woman stooped through the library door. She was at least seven feet tall.

Cole stood erect and held his breath. Not looking at him, the woman dropped to her knees and began dusting the natural wood half-panelling that encircled the room between bookcases. She had long blonde hair and a mild, vacant face; she wore a shapeless blue dress.

"Hello," Cole said.

She paid no attention.

"Hello!" he said more sharply. "Do you speak Galactic English?"

She looked at him out of empty

blue eyes and went back to her work. He went past her gingerly and up to his room. There he wrote a note to Garth Bidgrass, paced and fanned his indignation, tore up the note and wrote a stronger one. When Hawkins brought his dinner, Cole beat down his chattering objections and stuffed the note into the old man's coat pocket.

"See that Bidgrass gets it at once! Do you hear, at once!" he shouted.

After nightfall, nervous and wakeful, Cole looked out on the garden by the pale light of two moons. He saw the girl, wearing the same dress, come out of the opposite wing, and decided on impulse to intercept her.

As he climbed through the library window he said to himself, "Anything may be data to an ecologist, especially if it's pretty to look at."

He met her full face at the house corner and her hands flew up, fending. She turned and he said, "Please don't run away from me. I want to talk to you."

She turned back with eyes wide and troubled, in what nature had meant to be a merry, careless face.

"Do you know who I am?" he asked.

She nodded. "Uncle Garth says I'm not to talk to you." It was a little girl's voice, tremulous.

"Why? What am I, some kind of monster?"

"N-no. You're an outworlder, from a great, wealthy planet."

"Belconti is a very ordinary planet. What's your name?"

"I'm Pia—Pia Vignoli." The voice took on more assurance, but the plump body stayed poised for flight.

"Well I'm Flinter Cole, and I have a job to do on this planet. It's *terribly* important that I get started. Will you help me?"

"How can I, Mr. Cole? I'm nobody. I don't know anything." She moved away, and he followed, awkwardly.

"Girls know all sorts of things that would interest an ecologist," he protested. "Tell me all you know about stompers."

"Oh *no!* I mustn't talk about stompers."

"Well talk about nothing then, like girls do," he said impatiently. "What's the name of that moon?" He pointed overhead.

Tension left her and she smiled a little. "Morwenna," she said. "That one just setting into Lundy Forest is Annis. You can tell Annis by her bluish shadows that are never the same."

"Good girl! How about the other two, the ones that aren't up?"

"One's Cairdween and the other, the red one—oh, I daren't talk about moons either."

"Not even *moons?* Really, Miss Vignoli—"

"Let's not talk at all. I'll show you how to walk, you do look so funny all spraddled and scraping your feet. I was born off-planet and I had to learn it myself."

She showed him the light downflex of the foot that threw the body more forward than up, and he learned to wait out the strange micropause before his weight settled on the other foot. With a little

practice he got it, walking up and down the moonlit path beside her in an effortless toe dance. Then he learned to turn corners and to jump.

"Pia," he said once. "Pia. I like the sound, but it doesn't suit this rough planet."

"I was born on Tristan," she murmured. "Please don't ask—"

"I won't. But no reason why I can't talk. May I call you Pia?"

He described Belconti and the university, and his doctorate, at stake in this field assignment. Suddenly she stopped short and pointed to where a red moon lifted above the dark cliff of the eastern forest.

"It's late," she said. "There comes Hoggy Darn. Good night, Mr. Cole."

She danced away faster than he could follow. He crawled back through his window in the reddish moonlight.

NEXT afternoon Cole faced Garth Bidgrass in the library. The old man sat with folded arms, craggy face impassive. Cole, standing, leaned his weight on his hands and thrust his sharp face across the table. His freckles stood out against his angry pallor, and sunlight from the end window blazed in his red hair.

"Let me sum up," he said, thin-lipped. "For obscure reasons I must be essentially a prisoner. All right. You have no education here, no biologists of any kind. All right. Now here is what they expect of me on Belconti: to rough out the planetary ecosystem, set up a functional profile series for the stomper and its interacting species, make energy flow charts and outline the problem. If my report is incorrect or incomplete, Belconti won't send the right task group of specialists. Then you spend your money for nothing and I lose my doctorate. I must have skilled helpers, a clerical staff, *masses* of data!"

"You've said all that before," Bidgrass said calmly. "I told you, I can provide none of that."

"Then it's hopeless! Why did you ever send for an ecologist?"

"I sent for help. Belconti sent the ecologist."

"Help me to *help* you, then. You must try to understand, Mr. Bidgrass, science can't operate in a vacuum. I can't work up a total planetary biology. I must *start* with that data."

"Do what you can for us," Bidgrass said. "They won't blame you on Belconti when they know and we won't blame you here if it doesn't help."

Cole sat down, shaking his head. "But Belconti won't count it as a field job, not in ecology. You *will* not understand my position. Let me put it this way: suppose someone gave you a hatchet and told you, only one man, to cut down Lundy Forest?"

"I could start," the old man said. His eyes blazed and he smiled grimly. "I'd leave my mark on one tree."

Colt felt suddenly foolish and humbled.

"All right," he said. "I'll do what I can. What do you think is wiping out the stompers?"

"I know what. A parasite bird

that lays its eggs on stomper eggs. Its young hatch first and eat the big egg. The people call them piskies."

"I'll need to work out its life cycle, look for weak points and natural enemies. Who knows a lot about these piskies?"

"I know as much as anybody, and I've never seen a grown one. We believe they stay in the deep forest. But there are always three to each stomper egg and they're vicious. Go for a man's eyes or jugular. Egg hunters kill dozens every day."

"I'll want dozens, alive if possible, and a lab. Can you do that much?"

"Yes. You can use Dr. Rudall's lab at the hospital." Bidgrass stood up and looked at his watch. "The egg harvest should start coming in soon down at the plant and there may be a dead pisky. Come along and see."

As Hawkins guided the car past a group of the giant field workers, Cole felt Bidgrass' eyes on him. He turned, and the old man said slowly, "Stick to piskies, Mr. Cole. We'll all be happier."

"Anything may be data to an ecologist, especially if he overlooks it," Cole murmured stubbornly.

Hawkins cackled something about "Hoggy Darn itha hoose" and speeded up.

In the cavernous, machinery-lined plant Cole met the manager. He was the same powerful, long-haired man Cole had seen in the garden. "Morgan." Bidgrass introduced him with the one name, adding, "He doesn't use Galactic English."

Morgan bent his head slightly, unsmiling, ignoring Cole's offered hand. His wide-set eyes were so lustrously black that they seemed to have no pupils, and under the hostile stare Cole flushed angrily. They walked through the plant, Morgan talking to Bidgrass in the vernacular. His voice was deep and resonant, organ-like.

Bidgrass explained to Cole how stomper egg was vac-frozen under biostat and sealed in plastic for export. He pointed out a piece of shell, half an inch thick and highly translucent. From its radius of curvature Cole realized that stomper eggs were much larger than he had pictured them. Then someone shouted and Bidgrass said a flyer was coming in. They went out on the loading dock.

The flyer alongside carried six men forward of the cargo space and had four heavy blasters mounted almost like a warcraft. As the dock crew unloaded two eggs into dollies, other flyers were skittering in, further along the dock. Bidgrass pointed out to Cole on one huge four by three-foot egg the bases of broken parasite eggs cemented to its shell. Through a hole made by piskies, the ecologist noted that the substance of the large egg was a stiff gel. Morgan flashed a strong pocket lamp on the shell and growled something.

"There may be a pisky hiding inside," Bidgrass said. "You are lucky, Mr. Cole."

Morgan stepped inside and returned almost at once wearing gog-

gles and heavy gloves, and carrying a small power saw. He used the light again, traced an eight-inch square with his finger, and sawed it out. The others, all but Cole, stood back. Morgan pulled away the piece and something black flew up, incredibly swift, with a shrill, keening sound.

Cole looked after it and Morgan struck him heavily in the face, knocking him to hands and knees. Feet stamped and scraped around him and Cole saw his own blood dripping on the dock. He stood up dazed and angry.

"Morgan saved your eye," Bidgrass told him, "but the pisky took a nasty gouge at your cheekbone. I'll have Hawkins drive you to the hospital—you wanted to meet Dr. Rudall anyway."

Cole examined the crushed pisky on the way to the hospital. Big as his fist, with a tripartite beak, it was no true bird. The wings were flaps of black skin that still wrinkled and folded flexibly with residual life. It had nine toes on each foot and seemed covered with fine scales.

Dr. Rudall treated Cole's cheek in a surprisingly large and well appointed dressing room. He was a gray, defeated-looking man and told Cole in an apologetic voice that he had taken medical training on Planet Tristan many years ago . . . out of touch now. His small lab looked hopelessly archaic, but he promised to biostat the dead pisky until Cole could get back to it.

Hawkins was not with the ground car. Cole drove back to the plant without him. He wanted another look at the mode of adhesion of pisky egg on stomper egg. He drove to the further end of the plant and mounted the dock from outside, to freeze in surprise. Twenty feet away, the dock crew was unloading a giant.

He was naked, strapped limply to a plank, and his face was bloody. Half his reddish hair and beard was singed away. Then a hand hit Cole's shoulder and spun him around. It was Morgan.

"Clear out of here, you!" the big man said in fluent, if plain, Galactic English. "Don't you ever come here without Garth Bidgrass brings you!" He seemed hardly to move his lips, but the voice rumbled like thunder.

"Well," thought Cole, driving back after Hawkins, "datums are data, if they bite off your head."

"FOR YOUR own safety, Mr. Cole, you must not again leave the company of either Hawkins or Dr. Rudall when you are away from the house," Bidgrass told Cole the next morning. "The people have strange beliefs that would seem sheer nonsense to you, but their impulsive acts, if you provoke them, will be unpleasantly real."

"If I knew their beliefs I might know how to behave."

"It is your very presence that is provoking. If you were made of salt you would have to stay out of the rain. Here you are an outworlder and you must stay within certain limits. It's like that."

"All right," Cole said glumly.

He worked all day at the hospital

dissecting the pisky, but found no parasites. He noted interesting points of anatomy. The three-part beak of silicified horn was razor sharp and designed to exert a double shearing stress. The eye was triune and of fixed focus; the three eyeballs lay in a narrow isosceles triangle pattern, base down, behind a common triangular conjunctiva with incurved sides and narrow base. The wings were elastic and stiffened with a fan of nine multijointed bones that probably gave them grasping and manipulating power in the living organism. None of it suggested the limit factor he sought.

Dr. Rudall helped him make cultures in a sterile broth derived from the pisky's own tissues. In the evening a worker from the plant brought eleven dead piskies and Cole put them in biostat. He rode home with Hawkins to his solitary dinner feeling he had made a start.

Day followed day. Cole remained isolated in his wing, coming and going through his back door into the garden. He became used to the mute giant domestics who swept and cleaned. Now and then he exchanged a few words with the sad Mrs. Vignoli, Pia's mother, he learned, or with old Bidgrass, in chance meetings. He watched Pia through his windows sometimes and knew she fled when he came out. There was something incongruous in the timid wariness with which her plump figure and should-be-merry face confronted the world.

Once he caught her and held her wrist. "Why do you run away from me, Pia?"

She pulled away gently. "I'll get you in trouble, Mr. Cole. They don't trust me either. My father was a Tristanian."

"Who are *they?*"

"Just they. Morgan, all of them."

"If we're both outworld, we should stick together. I'm the loneliest man on this planet, Pia."

"I know the feeling," she said, looking down.

He patted her curls. "Let's be friends then, and you help me. Where do these giant people come from?"

Her head jerked up angrily. "That has nothing to do with your work! I'm inworld too, Mr. Cole. My mother is of the old stock."

Cole let her go in silence.

He began working evenings in the lab, losing himself in work. Few of the blue-clad men and women he encountered would look at him, but he sensed their hostile glances on the back of his neck. He felt islanded in a sea of dull hatred. Only Dr. Rudall was vaguely friendly.

Cole found no parasites in hundreds of dissected piskies, but his cultures were frequently contaminated by a fungus that formed dark red, globular fruiting bodies. When he turned to cytology he found that what he had supposed to be an incredibly complex autonomic nervous system was instead a fungal mycelium, so fine as to be visible only in phase contrast. He experimented with staining techniques and verified it in a dozen specimens, then danced the surprised Dr. Rudall around the lab.

"I've done it! One man against

a planet!" he chortled. "We'll culture it, then work up mutant strains of increasing virulence—oh for a Belconti geno-mycologist now!"

"It's not pathogenic, I'm afraid," Dr. Rudall said. "I . . . ah . . . read once, that idea was tried centuries ago . . . all the native fauna have fungal symbiotes . . . protect them against all known pathogenic microbiota . . . should have mentioned it, I suppose. . . ."

"*Yes,* you should have told me! My God, there go half the weapons of applied ecology over the moon . . . my time wasted . . . *why* didn't you tell me?" The ecologist's sharp face flushed red as his hair with frustrated anger.

"You didn't ask . . . hardly know what ecology means . . . didn't realize it was important . . ." the old doctor stammered.

"*Everything* is important to an ecologist, especially what people won't tell him!" Cole stormed.

He tried to stamp out of the lab, and progressed in a ludicrous bouncing that enraged him even more. He shouted for Hawkins and went home early.

In his rooms he brooded on his wrongs for an hour, then went downstairs and thundered on the locked door into the main house, shouting Garth Bidgrass' name. The sounds beyond hushed. Then Garth Bidgrass opened the door, looking stern and angry.

"Come into the library, Mr. Cole," he said. "Try to control yourself."

In the library Cole poured out his story while Bidgrass, standing with right elbow resting atop a bookcase, listened gravely.

"You must understand," Cole finished, "to save the stompers we must cut down the piskies. Crudely put, the most common method is to find a disease or a parasite that affects them, and breed more potent strains of it. But that won't work on piskies, and I could have and should have known that to begin with."

"Then you must give up?"

"*No!* Something must prey on them or their eggs in their native habitat, a macrobiotic limit factor I can use. I must learn the adult pisky's diet; if its range is narrow enough that can be made a limit factor."

The old man frowned. "How would you learn all this?"

"Field study. I want at least twenty intelligent men and a permanent camp somewhere in Lundy Forest."

Bidgrass folded his arms and shook his head. "Can't spare the men. And it's too dangerous—stompers would attack you day and night. I've had over two hundred egg hunters killed this year, and they're trained men in teams."

"Let me go out with a team then, use my own two eyes."

"Men wouldn't have you. I told you, they're superstitious about outworlders."

"Then it's failure! Your money and my doctorate go down the drain."

"You're young, you'll get your doctorate another place," the old man said. "You've tried hard, and I'll tell Belconti that." His voice

was placating, but Cole thought he saw a wary glint in the hard gray eyes.

Cole shrugged. "I suppose I'll settle in and wait for *Gorbals*. But I've had pleasanter vacations."

He turned his back and scanned the shelves ostentatiously for a book. Bidgrass left the room quietly.

It was a boring evening. Pia was not in the garden. Cole looked at the barrier and the incredible cliff of Lundy Forest. He would like to get into that forest, just once. Hundred and fifty days before *Gorbals* . . . *why* had they ever sent for him? They seemed to be conspiring to cheat him of his doctorate. They had, too. . . . Finally he slept.

HE WOKE to a distant siren wail and doors slamming and feet scraping in the main house. Dressing in haste, he noted a red glow in the sky to southward and heard a booming noise. In the hall outside his room he met Pia, face white and eyes enormous.

"Stomper attack!" she cried. "Come quickly, you must hide in the basement with us!"

He followed her into the main house and downstairs to where Mrs. Vignoli was herding a crowd of the giant domestics down a doored staircase. The giant women were tossing their heads nervously. Several were naked and one was tearing off her dress. Cole drew back.

"I'm an ecologist, I want to see," he said. "Stompers are data."

He pushed her gently toward the women and walked out on the front veranda. From southward came an incredibly rich and powerful chord of organ music, booming and swelling, impossibly sustained. Old Hawkins danced in the driveway in grotesque pointed leaps, shrieking "Hoosa maida! Hoosa maida!" Overhead the moons Cairdween, Morwenna and Annis of the blue shadows were arranged in a perfect isosceles triangle, narrow base parallel to the horizon. It stirred something in Cole, but the swelling music unhinged his thought. With a twinge of panic he turned, to find Pia at his elbow.

"They're after me, after us," she cried against the music.

"I must see. You go find shelter, Pia."

"With you I feel less alone now," she said. "One can't really hide, anyway. Come to the watch tower and you'll see."

He followed her through the house and up two flights to the roof of the tower on the southeast corner. As they stepped into the night air, the great organ sound enwrapped them, and Cole saw the southern sky ablaze, with flyers swooping and black motes hurtling through the glare. Interwoven pencils of ion-flame flickered in the verging darkness and the ripping sound of heavy blasters came faintly through the music.

A hundred-yard section of the barrier was down in flames, and the great, bobbing, leggy shapes of stompers came bounding through it while others glided down from the top. Flyers swarmed like angry bees around the top of the break, firing mounted blasters and tearing

away great masses of wood. The powerful chord of music swelled unendurably in volume and exultant richness until Cole cried out and shook the girl.

"It plucks at my backbone and I can't think! Pia, Pia, what *is* that music?"

"It's the stompers singing," she shouted back.

He shook his head. Bidgrass Station seethed, lights everywhere, roads crowded with trucks. Around the base of the breakthrough a defense perimeter flared with the blue-violet of blasters and the angry red of flame guns. As Cole watched it was overrun and darkened in place after place, only to reform further out as reserves came into action. Expanding jerkily, pushed this way and that, the flaming periphery looked like a fire-membrane stressed past endurance by some savage contained thing. With a surge of emotion Cole realized it was men down there, with their guns and their puny muscles and their fragile lives against two-legged, boat-shaped monsters twenty feet high.

"Sheer power of biomass," he thought. "Even their shot-down bodies are missiles, to crush and break." A sudden eddy in the flaming defense line brought it to within half a mile of the house. Cole could see men die against the glare, in the great music.

The girl pressed close to him and whimpered, "Oh, start the fire mist! Morwenna pity them!" Cole put his arm tightly around her.

A truck convoy pulled up by the manor house and soldiers were everywhere, moving quickly and surely. A group hauled a squat, vertical cylinder on wheels crashing through the ornamental shrubbery. Violet glowing metal vaning wound about it in a double helix.

"It's a Corbin powercaster," Pia shouted into Cole's ear. "It broadcasts power to the portable blasters so the men don't need to carry pack charges or lose time changing them."

Cole looked at the soldiers. The same big men he saw every day, the same closed and hostile faces, but now a wild and savage joy shone in them. This was their human meaning to themselves, their justification. The red boundary roared down on them, they would be dying in a few minutes, but they were braced and fiercely ready.

The music swelled impossibly loud and Cole knew that he too was going to die with them, despised outworlder that he was. He hugged the girl fiercely and tried to kiss her.

"Let me in your world, Pia!" he cried.

She pulled away. "Look! The fire mist! Oh thank you, good Morwenna!"

He saw it, a rose pink paled by nearer flame, washing lazily against the black cliff edge of Lundy Forest. It grew, boiling up over the barrier in places, spilling through the gap, and the great, agonizing chord of music muted and dwindled. The flame-perimeter began shrinking and still the fire mist grew, staining the night sky north and south beyond eye-reach. The song became a mournful wailing and the soldiers in the garden

moved forward for the mopping up.

"Pia, I've got to go down there. I've got to see a stomper close up."

She was trembling and crying with reaction. "I think they'll be too busy to mind," she said. "But don't go too far in . . . Flinter."

He ran down the stairs and through the unguarded gate toward the fought-over area. Wounded men were being helped or carried past him, but no one noticed him. He found a stomper, blaster-torn but not yet dead, and stopped to watch the four-foot tripart beak snap feebly and the dark wings writhe and clutch. The paired vertical eyelid folds rolled apart laterally to reveal three eyes under a single triangular conjunctiva, lambent in the flame-shot darkness. Soldiers passed unheeding while Cole stood and wondered. Then a hand jerked violently at his arm. It was Morgan.

Morgan wordlessly marched him off to a knot of men nearer the mopping up line and pushed him before Garth Bidgrass. Sweat dripped from flaring eyebrows down the grim old face, and over a blistered right cheek. A heavy blaster hung from the old man's body harness.

"Well, Mr. Cole, is this data?" he asked dourly. "Have you come out to save stompers?"

"I wish I could have saved men, Mr. Bidgrass. I wanted to help," Cole said.

"Another like this and you may have to," Bidgrass said, less sharply. "It was close work, lad."

"I can help Dr. Rudall. You must have many wounded."

"Good, good," the old man said approvingly. "The men will take that kindly and so will I."

"One favor," Cole said. "Will you have your men save half a dozen living stompers for me? I have another idea."

"Well, I don't know," Bidgrass said. "The men won't like it . . . but a few days, maybe . . . yes, I'll save you some."

"Thank you, sir." Cole turned away, catching a thick scowl from Morgan. Overhead the three moons were strung in a ragged line across the sky, and Hoggy Darn was rising.

COLE WORKED around the clock at the hospital, sterilizing instruments and helping Dr. Rudall with dressings. He was surprised to see other doctors, many nurses and numerous biofield projectors as modern as any on Belconti. Some of the wounded were women. All of them, wounded and unwounded, seemed in a shared mood of exaltation. He caught glimpses of Pia, working too. She seemed less poised for flight, tired but happy, and she smiled at him.

After three days Cole saw his stompers in a stone-floored pen at the slaughter house. Earth breed cattle lowed in adjacent pens. Four stompers still lived, their bodies blaster torn and their legs crudely hamstrung so they could not stand. They lay with heads together and the sun glinted on the blue-black, iridescent scales covering the domed heads and long necks.

Three shock-headed butchers stood by, assigned to help him.

Their distaste for Cole and the job was so evident that he hurried through the gross dissection of the two dead stompers at one end of the same pen. After an hour he thought to ask, as best he could, whether the living stompers were being given food and water. When one man understood, black hatred crossed his face and he spat on Cole's shoe. The ecologist flushed, then shrugged and got on with the job.

It brought him jarring surprises culminating in a tentative conclusion late on the second day. Then the situation began to fall apart. Working alone for the moment, Cole opened the stomach of the second stomper and found in it half-digested parts of a human body. Skull and humerus size told him it was one of the giants.

First pulling a flap of mesentery over the stomach incision, Cole went into the office and phoned Dr. Rudall to come at once. Coming out, he heard angry shouts and saw two of his helpers running to join the third, who stood pointing into the carcass. Then all three seized axes, ran across the pen and began hacking at the necks of the living stompers.

The great creatures boomed and writhed, clacking their beaks and half rising on their wings, unable to defend themselves. The butchers howled curses, and the stompers broke into a mournful wailing harmonized with flesh-creeping subsonics. Cole shouted and pleaded, finally wrested an axe from one and mounted guard over the last living stomper. He stood embattled, facing a growing crowd of butchers from the plant, when Dr. Rudall arrived.

"Dr. Rudall, explain to these maniacs why I must keep this stomper alive!" he cried angrily.

"I'm sorry, Mr. Cole, they will kill it in spite of you."

"But Garth Bidgrass ordered—"

"In spite of him. There are factors you don't understand, Mr. Cole. You are yourself in great danger." The old doctor's hands trembled.

Cole thought rapidly. "All right, will they wait a day? I want tissue explants for a reason I'll explain later. If you'll help me work up the nutrient tonight—"

"Our pisky nutrient will work. We can take your samples within the hour. Let me call the hospital."

He spoke rapidly to the glowering butchers in the vernacular, then hurried into the building. An hour later the stomper was dead, and Hawkins drove Cole and the doctor back to their lab with the explants.

"I've almost got it," Cole said happily. "Several weeks and two more bits of information and I'll tell you. In spite of all odds, one man against a planet—this will found my professional reputation back on Belconti."

Once again Cole faced Garth Bidgrass across the round table in the library. This time he felt vastly different.

"The piskies are really baby stompers," he said, watching the craggy old face for its reaction. It did not change.

"I suspected it when I saw how

the smaller eggs fused with the large egg, with continuous laminae," Cole went on. "There was the morphological resemblance, too. But when I dissected two mature stompers I found immature eggs. Even before entry into the oviduct what you call pisky eggs are filamented to the main body of cytoplasm."

Disappointingly, Bidgrass did not marvel. He squinted and cocked his head. Finally he said, "Do you mean the piskies lay their eggs internally in the stompers?"

"Impossible! I made a karyotype analysis of pisky and stomper tissue and they are *identical,* I tell you. My working hypothesis for now is that pisky eggs are fertilized polar bodies. It's not unknown. But that the main body should be sterile and serve as an external food source —that's new, I'm sure. That will get my name in the journals all through Carina sector."

He could not help smiling happily. Bidgrass bit his lower lip and stared keenly, not speaking. Cole became nettled.

"I hope you see the logic," he said. "What threatens your stompers is harvest pressure from your own egg hunters. Stop it for a few decades, or set aside breeding areas, and you can have a whole planetful again."

The old man scowled and stood up. "We'll not stop," he said gruffly. "There are still plenty of stompers. Remember last month." He walked to the end window and back, then sat down again still looking grim.

"Don't be too sure," Cole objected. "I haven't finished my report. I made a Harvey analysis on the tissues of one stomper. It involves culturing clones, measuring growth rates and zones of migration and working out a complex set of ratios—I won't go into details. But when I fitted my figures into Harvey's formula it indicated *unmistakably* that the stompers have a critical biomass."

"What does that mean?"

"Think of a species as one great animal that never dies, of which each individual is only a part. Can you do that?"

"Yes!" the old man exploded, sitting bolt upright.

"Well, the weight of a cross-section of the greater animal at any moment in time is its biomass. Many species have a point or value of critical biomass such that, if it falls below that point, the greater animal dies. The species loses its will to live, decays, drifts into extinction in spite of all efforts to save it. The stomper is such a species, no doubt whatever. Do you see how the slaughter a month ago may *already* have extinguished them as a species?"

Bidgrass nodded, smiling grimly. His eyes held a curious light.

"Tell me, Mr. Cole, your Harvey formula—do *human beings* have a critical biomass?"

"Yes, biologically," Cole said, surprised. "But in our case a varying part of the greater animal is carried in our culture, our symbol system, and is not directly dependent on biomass. A mathematical anthropologist could tell you more than I can."

Bidgrass placed his hands palm down on the table and leaned back in sudden resolution.

"Mr. Cole, you force me to tell you something I had been minded to hold back. I already know a good part of what you have just told me. I *wish* to exterminate the stompers and I will do so. But I meant for you to go back to Belconti thinking it was the piskies."

Cole propped his chin on folded hands and raised his eyebrows. "I half suspected that. But I fooled you, didn't I?"

"Yes, and I admire you for it. Now let me tell you more. Stomper egg brings a very high price and I have kept it higher by storing large reserves. When it is known the stomper is extinct, the rarity value of my reserve will be enormous. It will mean an end of this harsh life for me and for my grandniece after me."

Cole's lip curled, and red mounted in the old man's face as he talked, but he went on doggedly.

"I want the pisky theory and the news of stomper extinction to be released through Belconti University. The news will spread faster and be more readily believed and I will avoid a certain moral stigma—"

"And now I've crossed you up!"

"You can still do it. I can ease your conscience with a settlement of—say—five thousand solars a year for life."

Cole leaped up and leaned across the table.

"No!" he snapped. "Old man, you don't know how ecologists feel about the greed-murder of species. What I *will* do is work through Belconti on your government at Car Truro, warn it that you are about to destroy an important planetary resource."

Bidgrass stood up too, scowling darkly red.

"Not so fast, young fellow. I have copies of your early notes in which you call the piskies the critical limit factor in stomper extinction. Almost three hundred people were killed in that stomper attack, and you could easily have been one of them. If you had, I would naturally have reported it via the next *Gorbals* to Belconti and sent along your notes to date—do you follow me?"

"Yes. A threat."

"A counter-threat. Think it over for a few days, Mr. Cole."

•

COLE SAT glumly in his room waiting for his dinner and wondering if it would be poisoned. When old Hawkins tapped, he pulled open the door, only to find Pia instead with a service for two. She was rosy and smiling in a low-cut, off-shoulder brown dress he had not seen before.

"May I eat dinner with you tonight, Flinter?" she asked.

"Please do," he said, startled. "Am I people now, or something?"

"Uncle Garth says now that you know—" She broke off, blushing still more.

"I don't like what I know," he said somberly, "but it's not you, Pia. Here, let me."

He pulled the cart into the room and helped her set the things on his table. Pia *was* lovely, he decided,

wanting to caress the smooth roundness of her shoulders and dimpled arms. When she sat across the small table from him he could not help responding to the swell of her round breasts barely below the neckline. But her manner seemed forced and she looked more frightened than ever.

"You look like a little rabbit that knows it's strayed too far from the woods, Pia. What *are* you always afraid of?"

Her smile faded. "Not because I'm too far from the woods," she said. "What's a rabbit? But let's not talk about fear."

They talked of food and weather through a more than usually elaborate dinner. There was a bottle of Tristanian *kresch* to follow it. Cole splashed the blue wine into the two crystal goblets, gave her one and held up his own.

"Here's to the richest little girl on Tristan someday," he said, half mockingly.

Tears sprang to her eyes. "I don't want to be rich. I just want a home away from New Cornwall, just anywhere. I was born on Tristan. Oh Flinter, what you must think—" She began crying in earnest.

He patted her shoulder. "Forgive me for a fool, Pia. Tell me about Tristan. I had only one day there, waiting for *Gorbals'* tender."

She spoke of her childhood on Tristan, and the tension eased in both. Finally she proposed a picnic for the next day, the two of them to take a sports flyer into the forest top. He agreed with pleasure and squeezed her hand in saying good night.

She squeezed back a little. But she still looked frightened.

Next day Pia wore a brief yellow playsuit, and Cole could not keep his eyes off her. When he was loading the picnic hamper into the small flyer before the main hangar, she suddenly pressed close to him. He followed her wide-eyed gaze over his right shoulder and saw Morgan bulking darkly ten feet away.

"Hello there, Mr. Morgan," Cole said into the impassive face under the black bar of eyebrow.

Morgan rumbled in vernacular and walked on. His lips did not move.

"You're afraid of Morgan," Cole said when he had the flyer aloft and heading east.

"He's a bard. He has a power," she said. "Today, let's forget him."

Cole looked back at the bulk of Lundy Peninsula, swelling lost into blue-green distance from the narrow isthmus. The straight slash of Bidgrass Station from sea to sea looked puny beside the mighty forest towering on either side. Then Pia had his arm and wanted him to land.

He grounded on a pinkish-green mass of lichen several acres in area. Pia assured him it would support the flyer, reminding him of the planet's low gravity.

The resilient surface gave off a fragrance as they walked about on it. In a sea all around their island, branches of the great forest trees thrust up, leafy and flowering and bedecked with a profusion of epiphytal plants in many shapes and colors. Bright-hued true birds

darted from shadow into sunlight and back again, twittering and crying.

"It's beautiful," he said. And so was Pia, he thought, watching her on tiptoe reaching to a great white flower. The attractive firmness of her skin, the roundness and dimpling, *ripeness,* that was the word he wanted. And her eyes.

"Pia, you're not frightened any more!"

It was true. The long-lashed brown eyes were merry as nature meant them to be.

"It's peaceful and safe," she said. "When I come to the forest top I never want to go back to Bidgrass Station."

"Too bad we must, and let's pretend we don't," he said, pointing to a cluster of red-gold fruits. "Are those good to eat?"

"Too good. That's the trouble with New Cornwall."

"What do you mean?"

"Race you back to the flyer," she cried, and danced away, bare limbs twinkling in the sunlight. He floundered after.

The lunch was good and she had brought along the rest of the bottle of *kresch.* They sipped it seated beside the flyer while she tried to teach him New Cornish folk songs. Her small, clear singing blended with that of the birds around them.

"I catch parts of it," he said. "As an undergraduate a few years ago I studied the pre-space poets. I can read Old English, but it is strange to my ear."

"I could teach you."

"I love one wry-witted ancient named Robert Graves. How does it go: *If strange things happen where she is*—no, I can't recall it now."

"I could write the songs out for you."

"The beauty is in you and your voice. Just sing."

She sang, something about a king with light streaming from his hair, coming naked out of the forest to bring love into his kingdom. Small white clouds drifted in the blue sky, and blue Annis slept just above the rustling branches that guarded the secret of their island. He listened and watched her.

She was softly rounded as the clouds, and her clustered brown curls made an island of the vivid face expressing the song she sang so bird-like and naturally. She was vital, compact, self closed, perfect —like one of the great flowers nodding in the breeze along the island shore—and his heart yearned across to her.

"Pia," he said, breaking into the song, "do you really want to get away from New Cornwall?"

She nodded, eyes suddenly wide, lips still parted.

"Come with me to Belconti then. Right now. We'll cross to Car Truro and wait there for *Gorbals.*"

The light dimmed in her face. "Why Car Truro?"

"Pia, it's hard to tell you. I'm afraid of your great-uncle . . . I want to contact the planetary government."

"It's no good at Car Truro, Flinter. Can't you just come back to Bidgrass Station and . . . and . . . do what Uncle Garth wants?"

He could barely hear the last.

The fear was back in her eyes.

"Do you know what he wants?"

"Yes." The brown curls drooped.

Cole stood up. "So *that's* the reason—well, I'll not do it, do you hear? Garth Bidgrass is an evil, greedy old man and maybe it runs in the blood."

She jumped up, eyes more angry now than fearful. "He is not! He's trying to save you! He's good and noble and . . . and *great!* If you only knew the truth—Morwenna forgive me!" She clapped her hand to her mouth.

"*Tell* me the truth then, since I'm still being made a Belconti fool of. What *is* the truth?"

"I've said too much. Now I'll have to tell Uncle Garth—" She began crying.

"Tell him what? That I know he's a liar? That you failed as a—" He could not quite say the word.

"It's true I was supposed to make you love me and I tried and I can't because . . . because . . ." she ended in incoherent sobbing.

Cole stroked her hair and comforted her. "I've been hasty again," he apologized. "I'm still running in the dark, and that makes for stumbles. Let's go back, and I'll talk to your great-uncle again."

IN THE morning Garth Bidgrass, looking tired and stern, invited Cole to breakfast with the family. Cole had never been in the large, wood-panelled room overlooking the south garden through broad windows. Pia was subdued, Mrs. Vignoli strangely cheerful. The meal, served by a giant maid, was the customary plain porridge and fried meat.

The women left when the maid cleared the table. Bidgrass poured more coffee, then leaned back and looked across at Cole.

"Mr. Cole, I did you a wrong in having you sent here. I kept you in the dark for your own protection. Can you believe that?"

"I can believe that you believe it."

"You came too soon. You were too curious, too smart. I have had to compound that wrong with others to Pia and my own good name."

Cole smiled. "I know I'm curious. But why can't I know—"

"You can, lad. You've nosed through to it and I'll tell you if you insist. But it will endanger you even more and I wish you would forego it."

Cole shook his head. "I'm an ecologist. If I have the big picture, maybe I can help."

"I thought you'd say that. Well, history first, and settle yourself because it *is* a big picture and not a pretty one. This planet was settled directly from Earth in the year 145 After Space, almost eight hundred years ago. It seemed ideal—native protein was actually superior to Earth protein in human metabolism. Easy climate, geophysically stable, no diseases—but planetology was not much of a science in those days.

"The colony won political independence in 202 A.S. It had a thriving trade in luxury foods, mostly stomper egg concentrates—freight was dear then. Settlements radiated

out from Car Truro across the plains. Food was to be had for the taking in the mild climate and it was a kind of paradise. *Paradise!"*

The old man's voice rang hard on the last word and Cole stiffened. Bidgrass went on.

"Early in the third century our social scientists began to worry about the unnatural way the culture graded from the complexity of Car Truro to a simple pattern of mud huts and food gathering along the frontiers. Children of successive generations were taller than their parents and much less willing or able to use symbols. By the time a minority decided the trend should be reversed, the majority of the people could not be roused to see a danger."

"Earth life is normally resistant to low-grav gigantism," Cole said. "I wonder—"

"It was all the native foods they ate, but mainly stomper egg. There are more powerful and quicker-acting substances in the forest fungi, but then the population was all in the eastern grasslands, where the stompers ranged."

"I read they were a plains animal."

"Yes, and harmless too, except for their eggs. Well, the minority set up a dictatorship and began cultivating Earth plants and animals. They passed laws limiting the mechanical simplicity of households and regulating diets. They took children from subnormal parents and educated and fed them in camps. But the normals were too few and the trend continued.

"Shortly after mid-century the population reached the edge of the southern forest, and there many were completely wild. They drifted along the forest edge naked, without tools or fire or language or even family groupings. Their average stature was nearly eight feet. The normals knew they were losing. Can you imagine how they *felt,* lad?"

Cole relaxed a little. "Ah . . . yes, I can . . . I imagine the fight was inside them, too."

Bidgrass nodded. "Yes, they were all tainted. But they fought. They asked Earth for help and learned that Earth regarded them as tyrants oppressing a simple, natural folk. The economy broke down and more had to be imported. The only way to pay was in stomper egg exports. In spite of that, in about the year 300, they decided to restrict the stompers to the western part of the grasslands, thousands of miles beyond the human range.

"The egg hunters began killing piskies and grown stompers. They killed off the great, stupid herds of darv cattle on which the stompers fed. The stompers that survived became wary and hostile, good at hiding and fierce to attack. But killing off the eastern darv herds broke them and in a generation they vanished from the eastern plains. Things seemed to improve and they thought the tide was turned. Then, in the year 374, came what our bards now call the Black Learning."

"Bards?" Cole said. He drained his coffee cup.

"Morgan could sing you this history to shiver the flesh on your bones," the old man said, pouring more coffee. "What I am telling

you is nowhere written down, but it is engraved in thousands of hearts. Well, to go on.

"We knew some of the stompers had gone into the southern forest—you see, they have to incubate their eggs in direct sunlight and we kept finding them along the forest edge. But we had assumed they were eating the snakes and slugs and fungi native to the forest floor. Now we learned that a large population of wild humans had grown up unknown to us in the deep forest—and the stompers were eating them.

"You have seen our forests from a distance, lad. Do you realize how impossible it is to patrol them? We hadn't the men, money or machines for it. We appealed, and learned we would get no help from any planet in Carina sector except for pay. But the egg market fell off, and our income with it. Ships did come, however, small ones in stealth, to ground along the forest edge and capture the young women of the wild people."

Cole struck the table. "How rotten . . . !" His voice failed.

Bidgrass nodded. "We call that the Lesser Shame. The young women were without personality or language, yet tractable and responsive to affection. They were flawless in health and physique, and eight feet tall. They could be sold for fantastic prices on loosely organized frontier planets and yes, even to Earth, as we learned. Something dark in a man responds to that combination. You feel it as I speak—no, don't protest, I know. We had long had that trouble among our own people."

"Did my own people of Belconti —" Again Cole's voice failed. He brushed back his red hair angrily.

"Belconti was new then, still a colony. Well, that was the *help* we got. We hadn't the power to fight stompers, let alone slave raiders. But the Galactic Patrol was just getting organized and the sector admiral agreed to keep a ship in orbit blockading us. We broke off all contact except with Tristan, and the Patrol let only one freight line come through to handle our off-planet trade. It was then we began to hate the other planets. We call it the Turning Away.

"Now we are forgotten, almost a myth. The Patrol ship has been gone since two hundred years ago. But we remember."

"I wish I'd known this," Cole said. "Mr. Bidgrass, things are greatly changed in Carina sector—"

Bidgrass held up his hand. "I know, lad. That's why you're here, and I'll come to it. But let me go on. Early in the fifth century we decided to exterminate the stompers altogether and in two decades killed off all the darv cattle. But the stompers went into the forests in the south and west and from there came out to raid the plains. Not to kill, but to carry off normal and semi-wild people into the forest for breeding stock. A stomper's wing is more flexible than a hand. One of them can carry half a dozen men and women and run a thousand miles in a day. Some fungi in the forest can dull a man in an hour and take his mind in a week. Few who were carried in ever came out again.

"This went on, lad, for *centuries*. From our fortified towns and hunting camps we ranged along the forest edge like wolves. The stompers *must* lay their eggs in direct sunlight. That forced them out where we could get at them, into clearings and uplands and along the forest edge. We killed all we could.

"We found rhythms in their life pattern keyed to our four moons. When the three lady moons form a tall triangle, the stompers group in the open to mill and dance and sing. About every three months this happens over several days and in old times it was the peak raid season. It was also our chance to kill. The people call the configuration the House of the Maidens."

Cole nodded vigorously. "I remember that. Strange how lunar periodicity is bionative in every planet having a moon."

"It saved us here, praise Morwenna, but once almost destroyed us. There is a longer, sixty-two year cycle called the Nights of Hoggy Darn. Then the red moon passes through the House of the Maidens and the stompers go completely berserk. The first one after the war was joined fully, in 434, caught us unprepared and cost us more than three-fourths of our normal population in the week that we remember as the Great Taking. We were thrown back into Car Truro for decades and the stompers came back on the plains. They snatched people from the streets of Car Truro itself. That we call the Dark Time."

The old man's craggy face shadowed with sorrow and he sighed, leaning back. Cole opened his mouth but Bidgrass leaned forward again, new, fierce energy in his voice.

"We rallied and came back. We fought from the air and killed them in large numbers when we caught them in the open on Maiden nights. We drove them back off the plains and harried them along the forest edges and in the upland clearings where they came to lay eggs. We gathered all the eggs we could find. They defended their eggs and caused us steady losses. But we fought.

"We built our strategy on the Maidens and in time we drove the enemy out of the southern forest and into the west. Then we crowded him into Lundy Peninsula, made it a sanctuary for a hundred years to draw him in. When I was your age we fought out the last Nights of Hoggy Darn a few miles east of here. Ten years later we finished Bidgrass Station and the barrier and the continent was free of stompers."

Cole shifted his chair to get the sun off his neck. "I hardly know what to say," he began, but Bidgrass raised his hand.

"I've more to tell you, that you must know. By the late seventh century things were normal around Car Truro as regards regression. We began a pilot program of reclamation. The egg hunters captured wild people along the forest edge, still do. But some are beyond saving, and those they kill. We have to pen them like animals at first, but they can be trained to work in the fields, and for a long time now

we have had few machines except what we need for war. Their children, on an Earth diet, come back toward normal in size and intelligence. The fourth and fifth generations are normal enough to join in the war. But war has always come first and we have never been able to spare many normals for reclamation work.

"Even so, ex-wilds make up more than half our normal population now. That's about forty thousand; there are nearly a hundred thousand on the reclamation ladder, mostly around Car Truro. The ex-wilds have a queer, poetic strain, and mainly through them we've developed a sort of religion along the way. It helps the subnormals who are so powerfully drawn to run back to the forests. It's a strange mixture of poetry and prophecy, but it's breath of life to the ex-wilds. I guess I pretty well believe it myself and even you believe some of it."

Cole looked his question, hitching his chair nearer the table.

"Yes, your notion of the greater animal, critical biomass, that you spoke of. We speak of Grandfather Stomper and we are trying to kill him. He is trying to enslave Grandfather Man. The whole purpose and meaning of human life, to an ex-wild, is to kill Grandfather Stomper and then to reclaim Grandfather Man from the forest. You would have to hear Morgan sing it to appreciate how deeply they feel that, lad."

"I feel it, a little. I understand Morgan now, I think. He's an ex-wild, isn't he?"

"Yes, and our master bard. In some ways he has more power than I."

Cole got up. "Mind if I pull a curtain? That sun is hot."

"No, go ahead. Our coffee is cold," the old man said, rising too. "I'll ask for a fresh pot."

Seated again in the shaded room, Bidgrass resumed, "There's not much more. After the barrier was up it seemed as if Grandfather Stomper knew his time was running out. Don't laugh now. Individual stompers don't have intelligence, symbol-using, that is, as far as we know. But they changed from plains to forest. They learned to practise a gruesome kind of animal husbandry—oh, I could tell you things. *Something* had to figure it out."

"I'm not laughing," Cole said. "You're talking sound ecology. Go on."

"Well, they began laying eggs right along the barrier and didn't try to defend them. We picked up hundreds, even thousands, every day. The people said Grandfather Stomper was trying to make peace, to pay rent on Lundy Forest. And maybe he was.

"But we spat in his face. We gathered his tribute and still took all the eggs we could find in the inland clearings. We killed every stomper we saw. Then, for the first time I think, Grandfather Stomper knew it was war to the death. He began to fight as never before. Where once a stomper would carry a captured egg hunter a hundred miles into the forest and turn him loose, now it killed out of hand. They began making mass attacks on

the station and they didn't come to capture, they came to kill. So it has gone for forty years now."

The old man's voice changed, less fierce, more solemn. He sat up straight.

"Lundy Forest is near eight hundred thousand square miles. No one knows how many millions of wild humans are in it or how many scores of thousands of stompers. But this I knew long before you came to tell me about critical biomass: Grandfather Stomper is very near to death. He ruled this planet for a million years and he fought me for near a thousand, but his time is come.

"Don't laugh, lad, at what I am about to say now. Mass belief, blind faith over centuries of people like our ex-wilds and semi-wilds, can do strange things. To them and even to myself I *represent* Grandfather Man, and from them a power comes into me that is more than myself. I know in a *direct* way that in the Nights of Hoggy Darn to come I will at long last kill Grandfather Stomper and the war will be won. That time is only eight weeks away."

"Then I'll still be here. Grand— Mr. Bidgrass, I want to fight with you."

"You may and welcome, lad. Must, even, to redeem yourself. Because, for what you know now, your life is forfeit if the ex-wilds suspect."

"Why so? Are you not *proud*—" Cole half stood and Bidgrass waved him down.

"Consider, lad. For centuries across the inhabited planets people of wealth and influence have been eating stomper egg, serving it at state banquets. But now *you* know it is human flesh at one remove. How will they feel toward us when they learn that?"

"How should they feel? Man has to be consumed at some trophic level. His substance is as much in the biogeochemical cycles as that of a pig or a chicken. I suppose we *do* feel he should cap the end of a food chain and not short-cycle through himself, but I'm damned if I'm horrified—"

"Any non-ecologist would be. You know that."

The giant maid came in with a pot of coffee and clean cups. Bidgrass poured and both men sipped in silence. Then Bidgrass said slowly, "Do you know what the people here call outworlders? Cannibals! For centuries we have had the feeling that we have been selling our own flesh to the outworlds in exchange for the weapons to free Grandfather Man."

He stood up, towering over Cole, and his voice deepened.

"It has left bone-deep marks: of guilt, for making the outworlders unknowing cannibals; of hatred, because we feel the outworlds left us no choice. And shame, lad, deep, deep shame, more than a man can bear, to have been degraded to food animals here in our forests and across the opulent tables of the other planets. Morgan is only second-generation normal—his father was killed beside me, last Hoggy Darn. If Morgan knew you had learned our secret he would kill you out of hand. I could not stop

him. Do you understand now why we didn't want you until next *Gorbals?* Do you see into the hell you have been skating over?"

Cole nodded and rubbed his chin. "Yes, I do. But I don't despise Morgan, I think I love him. On Belconti, Grandfather Man is mainly concerned to titillate his own appetites, but here, well . . . how do I feel it? . . . I think what you have just told me makes me more proud to be a man than I have ever been before. I will carry through the deception of Belconti University with all my heart. Can't Morgan understand that?"

"Yes, and kill you anyway. Because you *know*. You will not lightly be forgiven that."

Cole shook his head helplessly. "Well *dammit* then—"

"Now, now, there's a way out," Bidgrass said, sitting down again. "The prophecies all foretell a change of heart after Grandfather Stomper dies. They speak of joy, love, good feeling. Morgan did agree to your coming here—he wants to hide the past as much as I do and he could see the value of my plan. In the time of good feeling I hope he will accept you."

"I hope so too," Cole said. "Morgan is a strange man. Why is Pia so afraid of him?"

"I'll tell you that, lad—maybe it will help you to appreciate your own danger. Some few of us are educated on Tristan. Twenty-three years ago my younger brother took my niece Flada there. She ran away and married a Tristanian named Ralph Vignoli. My brother persuaded them to come back and live at our installation there, and Ralph swore to keep secret the little he knew.

"The ex-wilds of New Cornwall kept wanting Ralph to come here so they could be sure of the secret. He kept refusing and finally they sent an emissary to kill him. My brother was killed protecting him. I stepped in then with a compromise, persuaded Ralph to come here for the sake of his wife and daughter. Pia was seven at the time.

"Ralph was a good man and fought well in battles, but two years later Morgan and some others came to the house in my absence and took him away. They took him to a clearing in Lundy Forest, where the stompers come to lay eggs, stripped off his clothing and left him. That was so the stompers would not take him for an egg hunter and kill him outright, but would carry him into the forest like they do with strayed wild stock. Morgan said the command came to him in a dream.

"I think Pia feels she is partly responsible for Ralph's death. I think she sometimes fears Morgan will dream about her, her Tristanian blood. . . ."

"Poor Pia," Cole said softly. "These *years* of grief and fear. . . ."

"They'll be ended come Hoggy Darn again, Morwenna grant. Don't you grieve her with your death too, lad. Stay close to the house, in the house."

Bidgrass rose and gulped the last of his coffee standing.

"I must go, I'm late," he said, more cheerfully than Cole had ever

heard his voice. "I have a conference with General Arscoate, our military leader, whom you'll meet soon."

He went out. Cole went out too, thoughts wrestling with feelings, looking for Pia.

IN THE DAYS that followed Cole took his meals with the family except when there were guests not in Bidgrass' confidence. The doors into the main house remained unlocked and he saw much of Pia, but she seemed unexpectedly elusive and remote. Cole, busy with his report to Belconti University, had little time to wonder about it.

He faked statistics wholesale and cited dozens of nonexistent New Cornish authorities. To his real data indicating critical biomass he added imaginary values for the parameters of climate, range, longevity, fertility period and Ruhan indices to get an estimated figure. Then he faked field census reports going back fifty years, and drew a curve dipping below critical ten years before his arrival. He made the latest field census show new biomass forty-two percent below critical and juggled figures to make the curve extrapolate to zero in twelve more years.

It pained him in his heart to leave out the curious inverse reproduction data. But it was a masterpiece of deception that should put the seal on his doctorate, and because it reported the extinction of a planetary dominant, he knew it would make the journals and the general news all through the sector.

The night he finished it, working late in the library, Pia brought him milk and cookies and sat with him as he explained what he had done.

"It's right," he defended himself to her against his scholar's conscience. "Humans on New Cornwall are a threatened species too. The secret must be hidden forever."

"Yes," she agreed soberly. "I think if all the sector knew, the ex-wilds would literally die of shame and rage. Being wild is not so bad, but—that other!" She shuddered under her gray dress.

"Pia, sometimes I feel you're still avoiding me. Surely now it's all right and genuine between us."

She smiled sadly. "I'll bring you trouble, with Morgan. Father came to New Cornwall because of me."

"But I didn't. I've been thinking I may *stay*, partly because of you. You've been afraid so long it's habitual."

"Strangely, Flinter, I don't feel it as fear any more. It's like bowing with sadness, my strength to run is gone. My old dreams—Morgan coming for me—I have them every night now."

"Morgan! Always Morgan!"

She shook her head and smiled faintly. "He has a dark, poetic power. He is what he is, just like the stompers. I feel . . . not hate, not even fear . . . a kind of *dread*."

He stroked the back of her hand and she pulled it away.

"An old song runs through my head," she went on. "A prophecy that Grandfather Stomper cannot be killed while outworld blood pumps through any heart on the

planet. I feel like my own enemy, like . . . like your enemy. You should not have come until next *Gorbals.* Flinter, *stay away from me!"*

He talked soothingly, to little avail. When they parted he said heartily, "Forget those silly prophecies, Pia. I'll look out for you."

Privately, he wondered how.

Cole sat beside Pia and across the food-laden table from General Arscoate, a large pink-faced man in middle life.

"It's an old and proven strategy, Mr. Cole," the general explained. "When Hoggy Darn starts we will harass the enemy from the air in all but one of the fourteen sizable open spaces in Lundy Forest. That one is Emrys Upland, the largest. They will concentrate in Emrys, more each night, until the climactic night of peak frenzy. Then we come down with all the men and women we can muster and we kill. We may go on killing stragglers for years after, but Grandfather Stomper will die on that night."

"Why not kill from the air?"

"More firepower on the ground. I can only lift ninety-four flyers all told. But I will shuttle twenty thousand fighting men into Emrys in an hour or two on the big night."

"So quickly? How can you?" Cole laid down his fork.

"They will be waiting in the forest top all around the periphery, in places where we are already building weapons dumps. In the first days of harrying, we will stage in the fighters."

"Morgan will visit each group in the forest top and sing our history," Bidgrass said from the head of the table. "On the evening of the climactic night, as Hoggy Darn rises, they will take a sacramental meal of stomper egg. At no other time is it eaten on this planet."

Mrs. Vignoli looked down. "Garth!" Arscoate said.

"The lad must know, must take it with us," Bidgrass said. "Lad, the real reason for not killing from the air is that the people *need* to kill personally, with their feet on the ground. So our poetry has always described that last, great fight. I must *personally* kill Grandfather Stomper."

Cole toyed with his knife. "But he is only a metaphor, a totem image—"

"The people believe in an actual individual who is the stomper counterpart of Garth here," the general broke in. "You know, Mr. Cole, the stompers we kill ordinarily are all females. The males are smaller, with a white crest, and they keep to the deep forest except on Hoggy Darn nights. Maybe the frenzy then has something to do with mating—no one knows. But Garth will kill the largest male he can find. The people, and I expect Garth and I as well, are going to believe that he has killed Grandfather Stomper in person."

The general sipped water and looked sternly over his glass at Cole. Cole glanced at Pia, who seemed lost in a dream of her own, not there to them.

"I see. A symbol," he agreed.

"Not the less real," Arscoate said tartly. "Symbols both mean and are. Garth here is a symbol too and

that is why, old as he is, he must be in the thick of it. He is like the ancient battle flags of romantic pre-space history. People before now have actually *seen* Grandfather Stomper. I am *not* a superstitious backworlder, Mr. Cole, but—"

Cole raised a placatory hand. "I know you are not, general. Forgive me if I seemed to suggest it."

"Let's have wine," Bidgrass said, pushing back his chair. "We'll take it in the parlor and Pia can sing for us."

When General Arscoate said good-night he told Cole not to worry, that he would have reliable guards at the manor gate during Garth Bidgrass' absence in Car Truro.

"I meant to tell you and Pia in the morning, lad," Bidgrass said. "Arscoate and I must go to Car Truro. There's heartburning there over who gets to fight and who must stay behind. It will be only two days."

COLE FELT uneasy all day. He spent most of it writing the covering letter for his report and phrasing his resignation from the university field staff. He wrote personal letters to his uncle and a few friends. After dinner he finally signed the official letters and took the completed report to Bidgrass' desk. Then he went to bed and slept soundly.

Pia wakened him with frantic shaking.

"Dress quickly, Flinter. The guard at the gate was just changed and it's not time."

She darted out to the hall window while he struggled with clothing, then back again.

"*Quickly,* darling! Morgan's crossing the garden, with men. Follow me."

She led him through the kitchen and out a pantry window, then stooping along the base of a hedge to where a flowering tree overshadowed the garden wall.

"I planned this, out of sight of guard posts, when I was a little girl," she whispered. "I always knew—over, Flinter, quickly!"

Outside was rough ground, a road, a wide field of cabbages and then the barrier. Veiled Annis rode high and bluish in the clear sky. They crossed the field in soaring leaps, and shouts pursued them. The girl ran north a hundred yards behind the shadowy buttresses and squeezed through a narrow crack between two huge timber baulks. Cole barely made it, skinning his shoulders.

"I found this too when I was a little girl," Pia whispered. "I had to enlarge it when my hips grew, but only just enough. Morwenna grant they're all too big!"

"Morgan is, for sure," Cole said, rubbing his shoulder. "Pia, I *hate* to run."

"We must still run. My old plan was to reach here unseen, but now they know and they'll come over the wall in flyers. We'll have to hide in the thick brush near the forest edge until Uncle Garth returns.

She pulled a basket out of the shadows.

"Food," she said. "I brought it

last night."

He carried the basket and they raced across the half-mile belt to concealment among high shrubbery and enormous mounds of fungi. Flyers with floodlights came low along the wall and others quartered the clearing. Cole and Pia stole nearer to the forest edge, into its shadow. They did not sleep.

Once he asked, "How about stompers?"

"They're a chance," she whispered. "Morgan's *sure*."

With daylight they saw four flyers patrolling instead of the usual one. At their backs colossal blackish-gray, deeply rugose tree trunks eighty feet in diameter rose up and up without a branch for many hundreds of feet. Then branches jutted out enormously and the colorful cascade of forest-top epiphytes came down the side and hung over their heads a thousand feet above.

Pia opened the food basket and they ate, seated on a bank. She wore her brown dress, her finest, he had learned, and she had new red shoes. She was quiet, as if tranced.

Cole remembered the picnic on the forest top, the secret island of beauty and innocence, and his heart stirred. He saw that the food basket was the same one. He did not tell her his thoughts.

They talked of trivial things or were silent for long periods. He held her hand. Once she roused herself to say, "Tomorrow, about this time, Uncle Garth will come looking for us." Shortly after, she gasped and caught his arm, pointing.

He peered, finally made a gestalt of broken outlines through the shrubbery. It was a stomper, swinging its head nervously.

"It smells us," she whispered. "Oh Flinter, forgive me darling. Take off your clothes, *quickly!*"

She undressed rapidly and hid her clothes. Cole undressed too, fear prickling his skin, remembering what Bidgrass had told him. The stomper moved nearer in a crackle of brush and stopped again.

Man and girl knelt trembling under a fan of red-orange fungus. The girl broke off a piece and motioned the man to do the same.

"When it comes, pretend to eat," she breathed, almost inaudibly. "Don't look up and don't say a word. Morwenna be with us now."

The stomper's shadow fell across them. The man's skin prickled and sweat sprang out. He looked at the girl and she was pale but not tense, munching on her piece of fungus. She clicked her teeth faintly and he knew it was a signal. He ate.

The stomper lifted the man by his right shoulder. It was like two fingers in a mitten holding him three times his own height off the ground. He saw the beak and the eye and his sight dimmed in anguish.

Then the right wing reached down and nipped the left shoulder of the rosy girl-body placidly crouching there. It swung her up to face the man momentarily under the great beak and the tricorn eye, and their own eyes met.

Very faintly she smiled and her eyes tried desperately to say, "I'm sorry" and "Goodbye, Flinter." His

eyes cried in agony "No! No! I will not have it so!"

Then the two-fingered mitten became a nine-fingered mitten lapping him in darkness that bounced and swayed and he knew that the stomper was running into Lundy Forest. The wing was smooth and warm but not soft, and it smelled of cinnamon and sandalwood. The odor overpowered him and the man lapsed into stupor.

The man woke into a fantastic dream. Luminous surfaces stretched up to be lost in gloom, with columns of darkness between. The spongy ground on which he lay shone with faint blue light. Luminous, slanting walls criss-crossed in front of him. Close at hand, behind and to the right, enormous bracket fungi ascended into darkness in ten-foot steps that supported a profusion of higher order fungi in many bizarre shapes.

He stood up and he was alone.

He climbed over a slanting root-buttress and saw her lying there. He called her name and she rose lightly and came to him. Radiant face, dimpled arms, round breasts, cradling hips: *his woman.* They embraced without shame and she cried thanks to Morwenna.

He said, "People have come out of the forest. What are the rules?"

"We must eat only the seeds of the pure white fungus—that's the least dangerous. We must walk and walk to keep our bodies so tired and hungry that they use it all. We must keep to a straight line."

"We'll live," he said. "Outside among our people, with our minds whole. We'll alternate left and right each time we round a tree, to hold our straight line. We'll come out somewhere."

"I will follow. May Morwenna go with us."

The fantastic journey wound over great gnarled roots and buttresses fusing and intermingling until it seemed that the root-complex was one unthinkably vast organism with many trunks soaring half-seen into endless darkness. Time had no feeling there. Space was a bubble of ghostly light a man could leap across.

Could leap and did, over and over, the woman following. The man climbed a curiously regular, whitish root higher than his head and it writhed. Then, swaying back along its length, came a great serpent head with luminous ovoid eyes. While the man crouched in horror, waving the woman back, the monstrous jaws gaped and the teeth were blunt choppers and grinders, weirdly human looking. They bit hugely into a bracket fungus and worried at it. Man and woman hurried on.

Strength waned. The woman fell behind. The man turned back to her and the light was failing. The blue mold was black, the luminous panels more ghostly.

"It's night. Shall we sleep?" he asked.

"It's just come day," the woman said, pointing upward.

He looked up. Far above, where had been gloom, hung a pinkish-green, opalescent haze of light. Parallel lines of tree trunks converged through it to be lost in nebulosity.

"Daylight overpowers the luminous fungi," she said.

"We sleep, then walk again. Shall we find food?"

"No. We must always go to sleep hungry so we will wake again."

They looked, until tired out, for a place of shelter.

They slept, locked together in the cranny of a massive buttress. The man dreamed of his tame home-world.

HE WOKE again into nightmare. In a twenty-foot fangrove of the white fungus they combed handfuls of black spores out of gill slots. The birdshot-sized spores had a pleasant, nutty flavor.

With the strength more walking. *Use it, use it, burn the poison.* Day faded above, and luminous night below came back to light the way. A rocky ledge and another, and then a shallow ravine with a black

stream cascading. They drank and the man said, "We'll follow it, find an upland clearing."

They heard rapid motion and crouched unbreathing while a stomper minced by up ahead. It had a white crest.

On and on, fatigue the whip for greater fatigue and salvation at the end of endurance. They passed wild humans. A statuesque woman with dull eyes and yellow hair to her ankles, placidly feeding. Babies big as four-year-old normals, by themselves, grazing on finger-shaped fungi. An enormous human, fourteen feet tall, fat-enfolded, too ponderous to stand even in low gravity, crawling through fungus beds. The man could not tell its sex.

On and on, sleep and eat and travel and sleep, darkness above or darkness below, outside of time. The stream lost, found again, sourcing

out finally under a great rock. And there, lodged in a black sandbank, the man found a human thigh bone half his own height. He scoured off the water mold with sand. He was armed.

The man walked ahead clutching his thigh bone, and the woman followed. They slept clasped together naked all three, man woman and thigh bone.

Stompers passed them and they crouched in sham feeding. The man prayed without words, *both or neither*. And hatred grew in him.

Snakes and giant slugs and the beautiful, gigantic, mindless wild humans, again and again, a familiar part of nightmare. The fat and truly enormous humans; and the man learned they had been male once. He remembered from far away where time was linear the voice of Grandfather Man: *Some are beyond saving, and those they kill.*

And a stomper passed, white crested, and far ahead a human voice cried out in wordless pain and protest. The man was minded to deviate from his line for fear of what they might see, but he did not. When they came on the boy, larger than the man but beardless and without formed muscles, the man looked at the tears dropping from the dull eyes and the blood dropping from the mutilation and killed him with the thigh bone. *Some are beyond saving.* And the hatred in him flamed to whiteness.

On and on, day above and day below in recurrent clash of lights. A white crested stomper paused and looked at them, crouched apart and trembling. The man felt the deepest, most anguished fear of all and beneath it, hatred surged until his teeth ached.

On and on. The man's stubble softened into beard, his hair touched his ears. On and on.

The land sloped upward and became rocky. The trees became smaller and wider spaced so that whole trunks were visible and the light of upper day descended. A patch of blue sky, then more as they ran shouting with gladness, and a bare mountain crest reared in the distance.

They embraced in wild joy and the woman cried, "Thank you, oh *loveliest* Morwenna!"

"Pia, we're human again," Cole said. "We're back in the world. And I love you."

Fearful of stompers, they moved rapidly away from the forest over steadily rising ground. The growth became more sparse, the ground more rocky, and near evening they crossed a wide moorland covered with coarse grass and scattered blocks of stone. Ahead a long, low fault scarp bounded it and there they found a cave tunneled into the rock, too narrow for a stomper. At last they felt safe. Morwenna rode silvery above the distant forest.

Water trickled from the cave which widened into a squared-off chamber in which the water spilled over the rim of a basin that looked cut with hands. Underfoot were small stone cylinders of various lengths and as his eyes adjusted Cole saw that they were drill cores.

"Prospectors made this," he told

Pia, "in the old, innocent days when they still hoped to find heavy metals." Then he saw the graven initials, T.C.B., and the date, 157 A.S.

They ate red berries growing in their dooryard, gathered grass for a bed and slept in a great weariness.

Next day and the next they ate red berries and fleshy, purple ground fruits and slept, gaining strength. Secure in their cave mouth they watched stompers cross the moorland. When night fell they gazed at the bunched moons, but the three Maidens did not quite form a house and Hoggy Darn was still pursuing them.

"A few days," Pia said.

"If this isn't Emrys Upland, Arscoate will kill us with fire mist."

She nodded.

More stompers crossed the moorland, some white crested. They moved there randomly at night and from the forest came a far-off sound of stompers singing. The Maidens formed a house and Hoggy Darn grazed the side of it before they fled. To south and west faint rose glowed in the night sky.

"Fire mist," Pia said. "The nights of harrying have begun. Oh Flinter, if this is really Emrys Upland it will be perfect."

"What will?"

"You—us—oh, I can't say yet."

"Secrets, Pia? Still secrets? Between *us?*"

"You'll know soon, Flinter. I mustn't spoil it."

The love in her eyes was tinged with a strangeness. She sought his arms and hid her face in his shoulder.

Stompers on the moorland all day so they dared not leave the cave. Flyers streaking high overhead, scouting.

"Pia, I believe this *is* Emrys Upland. I'll help after all with the great killing."

"You will help, Flinter."

"Afterward I'll take you to Belconti."

"We will never see Belconti, Flinter."

The strangeness in her eyes troubled him. He could not kiss it away.

Stompers crowding the moorland all night with their dancing, their vast singing coming to the cave from all round the compass. Rose banks distant in the night sky and Hoggy Darn crossing the House of the Maidens. Red Hoggy Darn, still lagging, still not catching it perfectly upright. The strangeness of Pia. The waiting, clutching a polished thigh bone.

AT LAST the night when the mighty war song of the stompers went up unbearably, as the man had heard it that once before, and fire mist boiled along the distant mountains. Flyers shuttled across the sky, dropped, rose again. Blasters ripped the night with ion-pencils. Hoggy Darn gleamed redly on the threshold of the House of the Maidens that stood almost upright and perfect with silvery Morwenna at the vertex. Flyers blasted clearings in the throng of stompers, and grounded. Men boiled out of them, setting up Corbin powercasters here, there, another place, fighting as soon as their feet hit ground.

The man stood up and brandished the thigh bone.

"I must go down and fight. Wait here."

"I must go too," the girl said calmly.

"Yes, you must," he agreed. "Come along."

Stompers rushed by them and bounded over their heads and did not harm them. Blaster-torn stompers fell heavily beside them, thrashing and snapping, and they were not touched. Men lowered weapons to point at the man and girl, shouting to one another out of mazed faces silently in the whelming music of the stomper chorus. Man and girl walked on.

Unharmed through the forest of singing, leaping shapes, hand in hand through a screen of fighting men that parted to admit them, they walked into the light of a glowing Corbin where a tall, gaunt old man stood watching their approach. The feeling of exalted unreality began to lift from Cole.

"Grandfather, give us blasters," he shouted. "We want to fight."

"The power is on you, lad, and you only half know it," the old man shouted back. "Stand here by the Corbin. Your fight is not yet." Tears stood in the fierce old eyes.

Across the moorland the fighting raged. Islands of men and women grouped round their Corbins held back the booming, chaotic sea of stompers that surged against them from all sides. Dikes of dead and dying grew up, men and stompers mingled. The flyers shuttled down and up again and more islands of men took shape. Hoggy Darn crossed the threshold and the savage war song of the stompers shook the night sky.

In a lull Morgan came in to the Corbin to change the wave track on his blaster. His face was a mask of iron joy and his eyes blazed.

"Morgan, if we are both alive after, I will kill you!" Cole shouted.

"No," Morgan rumbled. "You have been into the forest and come out again. It took you three weeks. It took me three hundred years. Clasp hands, my brother in hatred."

"Yes, brother in hatred." The exalted unreality began coming back strongly. "I want a blaster!" he howled at Morgan.

"No, brother in hatred, your fight is not yet." Morgan rejoined the battle, the ring of men standing braced in blaster harness fifty yards away, ripping down with interweaving ion-pencils the great forms leaping inward. Man and girl held hands and watched.

To the left trouble came to a nearby island. Stompers converged from all sides, abandoning the other attacks, impossibly many. They overran the defenders, attacking not them but the powercaster behind them, and piled up until the Corbin's blue-violet glare was hidden. A great blossoming of flame tore the pile of stompers apart, but the Corbin was dark.

"They blew out the power banks," Pia said. "They've never known to do that before. Now the men still living have only pack charges."

It was a new tactic, a deathhour flash of insight for Grandfather Stomper. Across the moor,

island after island went dark and the war song grew in savage exultation, but the man thought it dwindled in total volume. Then it was their own turn.

Cole and Pia crouched away from the Corbin in the lee of a stone block and two still-twitching stompers. Beside them Morgan and Bidgrass fired steadily at the shapes hurtling above. When the Corbin blew, a wave of stinking heat rolled over them. All around, survivors struggled to their feet, using flame pistols to head-shoot wounded stompers, digging out and connecting emergency pack charges to their blasters. They were pitifully few and their new, dark island was thirty feet across.

The moor seemed dark with only the red of flame pistols and the violet flickering of power pack blasters. It seemed to heave randomly like a sluggish sea with the seen struggles of dying stompers and the felt struggles of lesser human bodies. Thinned now, stompers attacked singly or in small groups. Blasters flickered and ripped and went darkly silent as power packs discharged. The red of short-range flame pistols replaced them. But across the fault scarp ridge the tumult swelled to new heights and Corbin after Corbin there flamed out of existence in a bloom of rose-purple against the skyline.

In a lull Bidgrass shouted to Morgan, "That's costing them more than they have to give, over there. Listen. Can you hear it?"

"Yes, Father in Hatred," Morgan said. "They will break soon."

"Yes, when Arscoate lays the fire mist. They will come through here. I have one charge left."

"I have two, Father in Hatred. Change packs with me."

Cole found his voice and his senses once more.

"I must find a weapon! Grandfather, give me your flame pistol!"

"Soon, lad. Soon now. Let the power take you," the old man soothed.

Stompers streamed over the moor again and the fighting flared up. The war song beat against the man's ears so that he drew the girl nearer and shook the thigh bone. Blaster fire flickered out altogether and the red blooming of flame pistols weakened. But more and more stompers streamed past without attacking. Then the man saw fire mist plume lazily in the east, point after point coalescing all along the forest edge.

"Now!" shouted a great voice beside him. "Now, lad!"

It was old Bidgrass, striding out like a giant, blaster leveled in its carrying harness.

The shout released Cole and he saw it far off, coming down the scrap rubble to the moor. Huger than any, white crest thirty feet above the ground, Grandfather Stomper. The war song roared insanely over the moor. Hoggy Darn gleamed heart-midst of the three lady moons.

The grim old man aimed and fired. The great bird-shape staggered and came on, left wing trailing. The old man waited until it was nearly on top of him and fired again. The stomper jerked its head and the bolt shattered the great tri-

part beak but did not kill it. With the right mitten-wing it reached down and swung its adversary twenty feet up, held him and haggled at him with its stumps of beak.

The old man's free right arm flailed wildly. Cole beat the stomper's leg with the thigh bone and howled in hatred. Then he saw the flame pistol lying where it had fallen from the holster. He picked it up, but the power was on him again and he did not use it. He hurled the thigh bone at the stomper's head, diverting it for a second, and tossed the pistol to old Bidgrass. He knew they could not fail.

The old man caught the pistol. When the great head swung back he held the muzzle against the tricorn eye and fired. Red plasma-jet burned into the brain behind it. The stomper bounded once in the air, dropped its slayer, ran three steps and collapsed.

The stomper song changed suddenly. It became a mournful lament, a dying into grieving subsonics. Cole knew that note. He had heard it from the stompers in the stone-floored pen when the butchers were hacking off their heads. He knew that Grandfather Stomper was dead forever, after seven hundred years of war.

Flyers crossed above, blasters were still at work across the ridge, but the war was ended. The power, whatever that sense of exalted unreality might be, left Cole; and he felt naked and ridiculous and wondered what he was doing there. Then he saw the girl bending above Garth Bidgrass and regained control of himself.

The strong old man was smiling wearily.

"We've won the war, lad," he said. "The next task is yours."

"I'll help you," Cole said.

"You'll lead. Oh, I'll live, but not for long. Centuries ago, lad, there was a prophecy, and until tonight people like myself and Arscoate thought it was only poetry, however literally Morgan and the other ex-wilds took it."

"What was it?"

"It foretells that on the night Grandfather Stomper shall die the new Grandfather Man will come naked out of the forest with his beautiful wife and armed with a thigh bone, and that he will lead us in the even greater task of reclamation that comes after. *Your* ritual title of address is 'Father in Love,' lad, and I'm just a broken old man now. Take up the burden."

Cole's throat swelled, choking speech for a moment.

"I can start," he said. **END**

WESTERN SCIENCE IS SO WONDERFUL

The tale of a Martian and three Communists, told with tongue firmly in cheek.

THE MARTIAN was sitting at the top of a granite cliff. In order to enjoy the breeze better he had taken on the shape of a small fir tree. The wind always felt very pleasant through non-deciduous needles.

BY CORDWAINER SMITH

At the bottom of the cliff stood an American, the first the Martian had ever seen.

The American extracted from his pocket a fantastically ingenious device. It was a small metal box with a nozzle which lifted up and produced an immediate flame. From this miraculous device the American readily lit a tube of bliss-giving herbs. The Martian understood that these were called *cigarettes* by the Americans. As the American finished lighting his cigarette, the Martian changed his shape to that of a fifteen-foot, red-faced, black-whiskered Chinese demagogue, and shouted to the American in English, "Hello, friend!"

The American looked up and almost dropped his teeth.

The Martian stepped off the cliff and floated gently down toward the American, approaching slowly so as not to affright him too much.

Nevertheless, the American did seem to be concerned, because he said, "You're not real, are you? You can't be. Or can you?"

Modestly the Martian looked into the mind of the American and realized that fifteen-foot Chinese demagogues were not reassuring visual images in an everyday American psychology. He peeked modestly into the mind of the American, seeking a reassuring image. The first image he saw was that of the American's mother, so the Martian promptly changed into the form of the American's mother and answered, "What is real, darling?"

With this the American turned slightly green and put his hand over his eyes. The Martian looked once again into the mind of the American and saw a slightly confused image.

When the American opened his eyes, the Martian had taken on the form of a Red Cross girl halfway through a strip-tease act. Although the maneuver was designed to be pleasant, the American was not reassured. His fear began to change into anger and he said, "What the hell are you?"

The Martian gave up trying to be obliging. He changed himself into a Chinese Nationalist major general with an Oxford education and said in a distinct British accent, "I'm by way of being one of the local characters, a bit on the Supernatural side, you know. I do hope you do not mind. Western science is so wonderful that I had to examine that fantastic machine you have in your hand. Would you like to chat a bit before you go on?"

The Martian caught a confused glimpse of images in the American's mind. They seemed to be concerned with something called *prohibition*, something else called "on the wagon," and the reiterated question, "How the hell did *I* get here?"

Meanwhile the Martian examined the lighter.

He handed it back to the American, who looked stunned.

"Very fine magic," said the Martian. "We do not do anything of that sort in these hills. I am a fairly low class Demon. I see that you are a captain in the illustrious army of the United States. Allow me to introduce myself. I am the 1,387,229th Eastern Subordinate

Incarnation of a Lohan. Do you have time for a chat?"

The American looked at the Chinese Nationalist uniform. Then he looked behind him. His Chinese porters and interpreter lay like bundles of rags on the meadowy floor of the valley; they had all fainted dead away. The American held himself together long enough to say, "What is a Lohan?"

"A Lohan is an Arhat," said the Martian.

The American did not take in this information either and the Martian concluded that something must have been missing from the usual amenities of getting acquainted with American officers. Regretfully the Martian erased all memory of himself from the mind of the American and from the minds of the swooned Chinese. He planted himself back on the cliff top, resumed the shape of a fir tree, and woke the entire gathering. He saw the Chinese interpreter gesticulating at the American and he knew that the Chinese was saying, "There are Demons in these hills . . ."

The Martian rather liked the hearty laugh with which the American greeted this piece of superstitious Chinese nonsense.

He watched the party disappear as they went around the miraculously beautiful little Lake of the Eight-Mouthed River.

That was in 1945.

The Martian spent many thoughtful hours trying to materialize a lighter, but he never managed to create one which did not dissolve back into some unpleasant primordial effluvium within hours.

Then it was 1955. The Martian heard that a Soviet officer was coming, and he looked forward with genuine pleasure to making the acquaintance of another person from the miraculously up-to-date Western world.

PETER FARRER was a vulgar German.

The vulgar Germans are about as much Russian as the Pennsylvania Dutch are Americans.

They have lived in Russia for more than two hundred years, but the terrible bitterness of the Second World War led to the breakup of most of their communities.

Farrer himself had fared well in this. After holding the noncommissioned rank of *yefreitor* in the Red Army for some years he had become a sub-lieutenant. In a technikum he had studied geology and survey.

The chief of the Soviet military mission to the province of Yunnan in the People's Republic of China had said to him, "Farrer, you are getting a real holiday. There is no danger in this trip, but we do want to get an estimate on the feasibility of building a secondary mountain highway along the rock cliffs west of Lake Pakou. I think well of you, Farrer. You have lived down your German name and you're a good Soviet citizen and officer. I know that you will not cause any trouble with our Chinese allies or with the mountain people among whom you must travel. Go easy with them, Farrer. They are very superstitious. We need their full support, but we can take our time to get it. The

liberation of India is still a long way off, but when we must move to help the Indians throw off American imperialism we do not want to have any soft areas in our rear. Do not push things too hard, Farrer. Be sure that you get a good technical job done, but that you make friends with everyone other than imperialist reactionary elements."

Farrer nodded very seriously. "You mean, comrade Colonel, that I must make friends with *everything?*"

"Everything," said the colonel firmly.

Farrer was young and he liked doing a bit of crusading on his own. "I'm a militant atheist, Colonel. Do I have to be pleasant to priests?"

"Priests, too," said the colonel, "especially priests."

The colonel looked sharply at Farrer. "You make friends with everything, everything except women. You hear me, comrade? Stay out of trouble."

Farrer saluted and went back to his desk to make preparations for the trip.

Three weeks later Farrer was climbing up past the small cascades which led to the River of the Golden Sands, the Chinshachiang, as the Long River or Yangtze was known locally.

Beside him there trotted Party Secretary Kungsun. Kungsun was a Peking aristocrat who had joined the Communist Party in his youth. Sharp-faced, sharp-voiced, he made up for his aristocracy by being the most violent Communist in all of northwestern Yunnan. Though they had only a squad of troops and a lot of local bearers for their supplies, they did have an officer of the old People's Liberation Army to assure their military well-being and to keep an eye on Farrer's technical competence. Comrade Captain Li, roly-poly and jolly, sweated wearily behind them as they climbed the steep cliffs.

Li called after them, "If you want to be heroes of labor let's keep climbing, but if you are following sound military logistics let's all sit down and drink some tea. We can't possibly get to Pakouhu before nightfall anyhow."

Kungsun looked back contemptuously. The ribbon of soldiers and bearers reached back two hundred yards, making a snake of dust clutched to the rocky slope of the mountain. From this perspective he saw the caps of the soldiers and the barrels of their rifles pointing upward toward him as they climbed. He saw the towel-wrapped heads of the liberated porters and he knew without speaking to them that they were cursing him in language just as violent as the language with which they had cursed their capitalist oppressors in days gone past. Far below them all the thread of the Chinshachiang was woven like a single strand of gold into the gray-green of the twilight valley floor.

He spat at the army captain, "If you had your way about it, we'd still be sitting there in an inn drinking the hot tea while the men slept."

The captain did not take offense. He had seen many party secretaries in his day. In the New China it was much safer to be a captain. A few

of the party secretaries he had known had got to be very important men. One of them had even got to Peking and had been assigned a whole Buick to himself together with three Parker 51 pens. In the minds of the Communist bureaucracy this represented a state close to absolute bliss. Captain Li wanted none of that. Two square meals a day and an endless succession of patriotic farm girls, preferably chubby ones, represented his view of a wholly liberated China.

Farrer's Chinese was poor, but he got the intent of the argument. In thick but understandable mandarin he called, half laughing at them, "Come along, comrades. We may not make it to the lake by nightfall, but we certainly can't bivouac on this cliff either." He whistled, *Ich hatt' ein Kameraden* through his teeth as he pulled ahead of Kungsun and led the climb on up the mountain.

Thus it was Farrer who first came over the lip of the cliff and met the Martian face to face.

THIS TIME the Martian was ready. He remembered his disappointing experience with the American, and he did not want to affright his guest so as to spoil the social nature of the occasion. While Farrer had been climbing the cliff, the Martian had been climbing Farrer's mind, chasing in and out of Farrer's memories as happily as a squirrel chases around inside an immense oak tree. From Farrer's own mind he had extracted a great many pleasant memories. He had then hastened back to the top of the cliff and had incorporated these in very substantial-looking phantoms.

Farrer got halfway across the lip of the cliff before he realized what he was looking at. Two Soviet military trucks were parked in a tiny glade. Each of them had tables in front of it. One of the tables was set with a very elaborate Russian *sakouska* (the Soviet equivalent of a smorgasbord). The Martian hoped he would be able to keep these objects materialized while Farrer ate them, but he was afraid they might disappear each time Farrer swallowed them because the Martian was not very well acquainted with digestive processes of human beings and did not want to give his guest a violent stomachache by allowing him to deposit through his esophagus and into his stomach objects of extremely improvised and uncertain chemical makeup.

The first truck had a big red flag on it with white Russian letters reading "WELCOME TO THE HEROES OF BRYANSK."

The second truck was even better. The Martian could see that Farrer was very fond of women, so he had materialized four very pretty Soviet girls, a blonde, a brunette, a redhead, and an albino just to make it interesting. The Martian did not trust himself to make them all speak the correctly feminine and appealing forms of the Russian language, so having materialized them he set them all in lounge chairs and put them to sleep. He had wondered what form he himself should

take and decided that it would be very hospitable to assume the appearance of Mao-tze-tung.

Farrer did not come on over the cliff. He stayed where he was. He looked at the Martian and the Martian said, very oilily, "Come on up. We are waiting for you."

"Who the hell are you?" barked Farrer.

"I am a pro-Soviet Demon," said the apparent Mr. Mao-tze-tung, "and these are materialized Communist hospitality arrangements. I hope you like them."

At this point both Kungsun and Li appeared. Li climbed up the left side of Farrer, Kungsun on the right. All three stopped, gaping.

Kungsun recovered his wits first. He recognized Mao-tze-tung. He never passed up a chance to get acquainted with the higher command of the Communist Party. He said in a very weak, strained, incredulous voice, "Mr. Party Chairman Mao, I never thought that we would see you here in these hills, or are you you, and if you aren't you, who are you?"

"I am not your party chairman," said the Martian. "I am merely a local Demon who has strong pro-Communist sentiments and would like to meet companionable people like yourselves."

At this point Li fainted and would have rolled back down the cliff knocking over soldiers and porters if the Martian had not reached out his left arm, concurrently changing the left arm into the shape of a python, picking up the unconscious Li and resting his body gently against the side of the picnic truck. The Soviet sleeping beauties slept on. The python turned back into an arm.

Kungsun's face had turned completely white; since he was a pale and pleasant ivory color to start with, his whiteness had a very marked tinge.

"I think this *wang-pa* is a counter-revolutionary impostor," he said weakly, "but I don't know what to do about him. I am glad that the Chinese People's Republic has a representative from the Soviet Union to instruct us in difficult party procedure."

Farrer snapped, "If he is a goose, he is a Chinese goose. He is not a Russian goose. You'd better not call him that dirty name. He seems to have some powers that do work. Look at what he did to Li."

The Martian decided to show off his education and said very conciliatorily, "If I am a *wang-pa* you are a *wang-pen.*" He added brightly, in the Russian language, "That's an ingrate, you know. Much worse than an illegitimate one. Do you like my shape, comrade Farrer? Do you have a cigarette lighter with you? Western science is so wonderful, I can never make very solid things, and you people make airplanes, atom bombs, and all sorts of refreshing entertainments of that kind."

Farrer reached into his pocket, groping for his lighter.

A scream sounded behind him. One of the Chinese enlisted men had left the stopped column behind and had stuck his head over the edge of the cliff to see what was happening. When he saw the trucks

and the figure of Mao-tze-tung he began shrieking, "There are devils here! There are devils here!"

From centuries of experience, the Martian knew there was no use trying to get along with the local people unless they were very, very young or very, very old. He walked to the edge of the cliff so that all the men could see him. He expanded the shape of Mao-tze-tung until it was thirty-five feet high. Then he changed himself into the embodiment of an ancient Chinese god of war with whiskers, ribbons, and sword tassels blowing in the breeze. They all fainted dead away as he had intended. He packed them snugly against the rocks so that none of them would fall back down the slope. Then he took on the shape of a Soviet WAC—a rather pretty little blonde with sergeant's insignia—and re-materialized himself beside Farrer.

By this point Farrer had his lighter out.

The pretty little blonde said to Farrer, "Do you like this shape better?"

Farrer said, "I don't believe this at all. I am a militant atheist. I have fought against superstition all my life." Farrer was twenty-four.

The Martian said, "I don't think you like me being a girl. It bothers you, doesn't it?"

"Since you do not exist you cannot bother me. But if you don't mind could you please change your shape again?"

The Martian took on the appearance of a chubby little Buddha. He knew this was a little impious, but he felt Farrer give a sigh of relief. Even Li seemed cheered up, now that the Martian had taken on a proper religious form.

"Listen, you obscene demonic monstrosity," snarled Kungsun, "this is the Chinese People's Republic. You have absolutely no business taking on supernatural images or conducting unatheistic activities. Please abolish yourself and those illusions yonder. What do you want, anyhow?"

"I would like," said the Martian mildly, "to become a member of the Chinese Communist Party."

Farrer and Kungsun stared at each other. Then they both spoke at once, Farrer in Russian and Kungsun in Chinese, "But we can't let you in the Party."

Kungsun said, "If you're a demon you don't exist, and if you do exist you're illegal."

The Martian smiled. "Take some refreshments. You may change your minds. Would you like a girl?" he said, pointing at the assorted Russian beauties who still slept in their lounge chairs.

But Kungsun and Farrer shook their heads.

With a sigh the Martian dematerialized the girls and replaced them with three striped Siberian tigers. The tigers approached.

One tiger stopped cozily behind the Martian and sat down. The Martian sat on him. Said the Martian brightly, "I like tigers to sit on. They're so comfortable. Have a tiger."

Farrer and Kungsun were staring open-mouthed at their respective tigers. The tigers yawned at them and stretched out.

With a tremendous effort of will the two young men sat down on the ground in front of their tigers. Farrer sighed, "What *do* you want? I suppose you won this trick. . . ."

SAID the Martian, "Have a jug of wine."

He materialized a jug of wine and a porcelain cup in front of each, including himself. He poured himself a drink and looked at them through shrewd, narrowed eyes. "I would like to learn all about Western science. You see, I am a Martian student who was exiled here to become the 1,387,229th Eastern Subordinate Incarnation of a Lohan and I have been here more than two thousand years, and I can only perceive in a radius of ten leagues. Western science is very interesting. If I could, I would like to be an engineering student, but since I cannot leave this place I would like to join the Communist Party and have many visitors come to see me."

By this time Kungsun made up his mind. He was a Communist, but he was also a Chinese—an aristocratic Chinese and a man well versed in the folklore of his own country. Kungsun used a politely archaic form of the Peking court dialect when he spoke again in much milder terms, "Honored, esteemed Demon, sir, it's just no use at all your trying to get into the Communist Party. I admit it is very patriotic of you as a Chinese Demon to want to join the progressive group which leads the Chinese people in their endless struggle against the vicious American imperialists. Even if you convinced me I don't think you can convince the party authorities, esteemed sir. The only thing for you to do in our new Communist world of the New China is to become a counter-revolutionary refugee and migrate to capitalist territory."

The Martian looked hurt and sullen. He frowned at them as he sipped his wine. Behind him Li began snoring where he slept against the wheel of a truck.

Very persuasively the Martian began to speak: "I see, young man, that you're beginning to believe in me. You don't have to recognize me. Just believe in me a little bit. I am happy to see that you, Party Secretary Kungsun, are prepared to be polite. I am not a Chinese demon, since I was originally a Martian who was elected to the Lesser Assembly of Concord, but who made an inopportune remark and who must live on as the 1,387,-229th Eastern Subordinate Incarnation of a Lohan for three hundred thousand springs and autumns before I can return. I expect to be around a very long time indeed. On the other hand, I would like to study engineering and I think it would be much better for me to become a member of the Communist Party than to go to a strange place."

Farrer had an inspiration. Said he to the Martian, "I have an idea. Before I explain it, though, would you please take those damned trucks away and remove that *sakouska?* It makes my mouth water and I'm very sorry, but I just can't accept your hospitality."

The Martian complied with a wave of his hand. The trucks and the tables disappeared. Li had been leaning against a truck. His head went thump against the grass. He muttered something in his sleep and then resumed his snoring. The Martian turned back to his guests.

Farrer picked up the thread of his own thoughts. "Leaving aside the question of whether you exist or not, I can assure you that I know the Russian Communist Party and my colleague, Comrade Kungsun here, knows the Chinese Communist Party. Communist parties are very wonderful things. They lead the masses in the fight against wicked Americans. Do you realize that if we didn't fight on with the revolutionary struggle all of us would have to drink coca-cola every day?"

"What is coca-cola?" asked the Demon.

"I don't know," replied Farrer.

"Then why be afraid to drink any?"

"Don't be irrelevant. I hear that the capitalists make everybody drink it. The Communist Party cannot take time to open up supernatural secretariats. It would spoil irreligious campaigns for us to have a demonic secretary. I can tell you the Russian Communist Party won't put up with it and our friend here will tell you there is no place in the Chinese Communist Party. We want you to be happy. You seem to be a very friendly demon. Why don't you just go away? The capitalists will welcome you. They are very reactionary and very religious. You might even find people there who would believe in you."

The Martian changed his shape from that of a roly-poly Buddha and assumed the appearance and dress of a young Chinese man, a student of engineering at the University of the Revolution in Peking. In the shape of the student he continued, "I don't want to be believed in. I want to study engineering, and I want to learn all about Western science."

Kungsun came to Farrer's support. He said, "It's just no use trying to be a Communist engineer. You look like a very absent-minded demon to me and I think that even if you tried to pass yourself off as a human being you would keep forgetting and changing shapes. That would ruin the morale of any class."

The Martian thought to himself that the young man had a point there. He hated keeping any one particular shape for more than half an hour. Staying in one bodily form made him itch. He also liked to change sexes every few times; it seemed sort of refreshing. He did not admit to the young man that Kungsun had scored a point with that remark about shape-changing, but he nodded amiably at them and asked, "But how could I get abroad?"

"Just go," said Kungsun, wearily. "Just go. You're a demon. You can do anything."

"I can't do that," snapped the student-Martian. "I have to have something to go by."

He turned to Farrer. "It won't do any good, your giving me something. If you gave me something

Russian and I would end up in Russia, from what you say they won't want to have a Communist Martian any more than these Chinese people do. I won't like to leave my beautiful lake anyhow, but I suppose I will have to if I am to get acquainted with Western science."

Farrer said, "I have an idea." He took off his wristwatch and handed it to the Martian.

The Martian inspected it. Many years before, the watch had been manufactured in the United States of America. It had been traded by a G. I. to a fraulein, by the fraulein's grandmother to a Red Army man for three sacks of potatoes, and by the Red Army man for five hundred rubles to Farrer when the two of them met in Kuibyshev. The numbers were painted with radium, as were the hands. The second hand was missing, so the Martian materialized a new one. He changed the shape of it several times before it fitted. On the watch there was written in English, "MARVIN WATCH COMPANY." At the bottom of the face of the watch there was the name of a town: "WATERBURY, CONN."

The Martian read it. Said he to Farrer, "Where is this place Waterbury, *Kahn?*"

"The Conn. is the short form of the name of one of the American states. If you are going to be a reactionary capitalist that is a very good place to be a capitalist in."

Still white-faced, but in a sickly ingratiating way, Kungsun added his bit. "I think *you* would like coca-cola. It's very reactionary."

The student-Martian frowned. He still held the watch in his hand. Said he, "I don't care whether it's reactionary or not. I want to be in a very scientific place."

Farrer said, "You couldn't go any place more scientific than Waterbury, Conn., especially Conn.—that's the most scientific place they have in America and I'm sure they are very pro-Martian and you can join one of the capitalist parties. They won't mind. But the Communist parties would make a lot of trouble for you."

Farrer smiled and his eyes lit up. "Furthermore," he added, as a winning point, "you can keep my watch for yourself, for always."

The Martian frowned. Speaking to himself the student-Martian said, "I can see that Chinese Communism is going to collapse in eight years, eight hundred years, or eighty thousand years. Perhaps I'd better go to this Waterbury, Conn."

The two young Communists nodded their heads vigorously and grinned. They both smiled at the Martian.

"Honored, esteemed Martian, sir, please hurry along because I want to get my men over the edge of the cliff before darkness falls. Go with our blessing."

The Martian changed shape. He took on the image of an Arhat, a subordinate disciple of Buddha. Eight feet tall, he loomed above them. His face radiated unearthly calm. The watch, miraculously provided with a new strap, was firmly strapped to his left wrist.

"Bless you, my boys," said he. "I go to Waterbury." And he did.

FARRER stared at Kungsun. "What's happened to Li?"

Kungsun shook his head dazedly. "I don't know. I feel funny."

(In departing for that marvelous strange place, Waterbury, Conn., the Martian had taken with him all their memories of himself.)

Kungsun walked to the edge of the cliff. Looking over, he saw the men sleeping.

"Look at that," he muttered. He stepped to the edge of the cliff and began shouting: "Wake up, you fools, you turtles. Haven't you any more sense than to sleep on a cliff as nightfall approaches?"

The Martian concentrated all his powers on the location of Waterbury, Conn.

He was the 1,387,229th Eastern Subordinate Incarnation of a Lohan (or an Arhat), and his powers were limited, impressive though they might seem to outsiders.

With a shock, a thrill, a something of breaking, a sense of things done and undone, he found himself in flat country. Strange darkness surrounded him. Air, which he had never smelled before, flowed quietly around him. Farrer and Li, hanging on a cliff high above the Chinshachiang, lay far behind him in the world from which he had broken. He remembered that he had left his shape behind.

Absent-mindedly he glanced down at himself to see what form he had taken for the trip.

He discovered that he had arrived in the form of a small, laughing Buddha seven inches high, carved in yellowed ivory.

"This will never do!" muttered the Martian to himself. "I must take on one of the local forms. . . ."

He sensed around in his environment, groping telepathically for interesting objects near him.

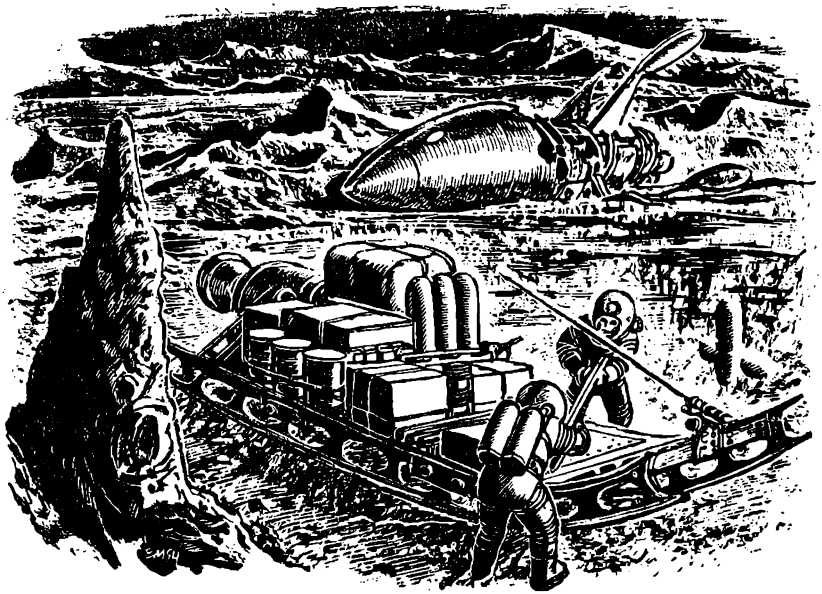
"Aha, a milk truck."

Thought he, Western science is indeed very wonderful. Imagine a machine made purely for the purpose of transporting milk!

Swiftly he transferred himself into a milk truck.

In the darkness, his telepathic senses had not distinguished the metal of which the milk truck was made nor the color of the paint.

In order to remain inconspicuous, he turned himself into a milk truck made of solid gold. Then, without a driver, he started up his own engine and began driving himself down one of the main highways leading into Waterbury, Connecticut. . . . So if you happen to be passing through Waterbury, Conn., and see a solid gold milk truck driving itself through the streets, you'll know it's the Martian, otherwise the 1,387,229th Eastern Subordinate Incarnation of a Lohan, and that he still thinks Western Science is wonderful. **END**



HALF AROUND PLUTO

Pluto was a coffin world, airless, utterly cold. And they had ten days to reach Base Camp, ten thousand miles away.

THEIR glassite space helmets fogged, and their metal glove joints stiffened in the incredible surface cold; but the two men who could work finished their job. In the black sky glistered the little arc-light of the sun, a sixteen-hundredth of the blaze that fell on Earth. Around them sulked Pluto's crags and gullies, sheathed with the hard-frozen pallor that had been Pluto's atmosphere, eons ago.

From the wrecked cylinder of the scout rocket they had dragged two interior girders, ready-curved at the ends. These, clamped side by side with transverse brackets and decked with bulkhead metal, managed to

BY MANLY WADE WELLMAN

look like a sled.

At the rear they set a salvaged engine unit. For steering, they rigged a boom shaft to warp the runners right or left. For cargo, they piled the sled with full containers, ration boxes, the foil tent, what instruments they could detach and carry, armfuls of heat-tools, a crowbar, a hatchet, a few other items.

Moving back from the finished work, one of them stumbled against the other. Instantly the two puffy, soot-black shapes were crouched, gloved fists up, fierce in the system's duskiest corner.

Then the moment passed. Warily, helmets turned toward each other, they went back to the half-stripped wreck.

In the still airtight control room, lighted by one bulb, their officer stirred on his bedstrip. His tunic had been pulled off, his broken left arm and collarbone set and splinted. Under a fillet of bandage, his gaunt young face looked pale, but he had his wits back.

"The appropriate question," he said, "is 'What happened?'"

The two men were removing their helmets. "Conked and crashed, sir," said Jenks, the smaller one, uncovering a sallow, hollow-cheeked face.

Lieutenant Wofforth sat up, supporting himself on his sound arm. "How long have I been out?"

"Maybe forty hours, sir. Delirious. Corbett and me did the best we could. Take it easy, sir," he said as Wofforth began to get up. "Lie back. We've done what Emergency Plan Six says—bolted a sled together and coupled on a sound engine unit for power."

"Quite a haul back to base," said Wofforth, almost cheerfully. His eyes were bright, as though he savored the idea. "About halfway around Pluto. We'd better start now, or they'll get tired of waiting."

"They've gone, sir," Corbett growled before Jenks could gesture him to silence. He was beefy, slit-eyed. "We saw the jets going sunward this morning."

Wofforth winced. "Gone," he said. "That's right, I didn't stop to think. You said forty hours. . . . They couldn't wait that long. We're past opposition already, getting farther away all the time. They had to go, or they wouldn't have made it."

He stood up uncertainly and reached for his ripped tunic. Corbett stepped over and helped him slide his uninjured arm into the right sleeve, then to fasten and drape the tunic over his splinted left arm and shoulder.

"We'll just have to get back to Base Camp and wait," said Wofforth, grimly.

"Sir," said Jenks, "our radio is gone. I tried to patch it up, but it was gone. When they didn't get a signal, they must have thought—"

"Nonsense!" Wofforth broke in. "They'll have left us supplies. They couldn't wait, signal or none. Our job is to get back, and stick it out there until they come for us."

He sat at the control and began to write in the log book. Corbett and Jenks drifted together at the other end of the room.

"You meat-head," snarled Jenks

under his breath. "You knew he took the berth to Pluto because the first mate was a lady—Lya Strominger."

"He had to know they were gone," protested Corbett, equally fierce.

"Not flat like you gave it. He came here to be with her. Now she's jetted away without him. How does a man feel when a woman's done that—"

"Stop blathering, you two, and help me into my suit," called Wofforth, rising again. "We're going to rev up that sled engine and get out of here!"

Outside, the sled lay ready under the frigid sky. Wofforth tramped around it, leaned over and poked the load.

"Too much," said his voice in their radios. "Keep the synthesizer, the tent, these two ration boxes. Wait, keep the crowbar and the hatchet. Dump the rest."

"We travel that light, sir?" said Jenks doubtfully.

"I've been figuring," said Wofforth. "We're on the far side of Pluto from Base Camp. That makes ten thousand miles, more or less. Pluto's day is nineteen hours and a minute or so, Earth time. We can travel only by what they humorously call daylight. And we'd better get there in ten days—a thousand miles every nine and a half hours—or maybe we won't get there at all."

"How's that, sir?" asked Corbett.

"The heaters in these suits," Wofforth reminded him. "Two hundred and forty hours of efficiency, and that's all. Well, it's noon. Let's take off."

His voice shook. He was still weak. Jenks helped him sit on the two lashed ration boxes, and slung a mooring strap across his knees. Then Jenks took the steering boom, and Corbett bent to start the engine.

When the arclight sun set in the west, they had traveled more than four hours over country not too rugged to slow them much. Darkness closed in fast while Jenks and Corbett pitched the pyramidal tent of metal foil and clamped it down solidly. They spread and zipped in the ground fabric, set up lights and heater inside, and began to pipe in thawed gases from the drifts outside.

After their scanty meal, Corbett and Jenks sought their bedstrips, on opposite sides of the tent. Wofforth tended the atomic heater for minutes, until the sound of deep breathing told him that his companions were asleep.

Then he put on his spacesuit, clumsy with his single hand to close seams. He picked up sextant and telescope, and slipped out into the Plutonian night.

It was as utterly black as the bottom of a pond of ink. But above Wofforth shone the faithful stars, in the constellations mapped by the first star-gazers of long ago. He made observations, checked for time and position. He chuckled inside his helmet, as though congratulating himself. Back in the tent, he opened the log book and wrote:

First day: Course due west.

Run 410 mi. To go 9590 mi. approx. Supplies adeq. Spirits good.

Wriggling out of his space gear, he lay down, asleep almost before his weary limbs relaxed.

EVERYONE was awake before dawn. They made coffee on the heater, and broke out protein biscuits for breakfast.

As the tiny sun winked into view over the horizon, they loaded the sled. Corbett slouched toward the idling engine at the tail of the sled.

"No, get on amidships," said Wofforth. "I'll take over engine."

"My job—" began Corbett.

"You're relieved. Strap yourself on the ration boxes. That's right. Jenks, steer again. Make for the level ahead."

With his right hand Wofforth ran a length of pliable cable around his waist and through a ring-bolt on the decking. He touched the engine controls, and they pulled away from camp.

The sled coursed over great knoll-like swellings of the terrain, coated with the dull-pale frozen atmosphere. Beyond, it gained speed on a vast flat plain, almost as smooth as a desert of glass.

"What's this big rink, Lieutenant?" asked Jenks.

"Maybe a sea, or maybe just a sunken area, full of solid gases. Stand by the helm, I'm going to gun a few more M. P. H. out of her."

"No wind," grunted Corbett. "Nothing moving except us. The floor of hell."

"If you was in hell, the rest of us would be better off," said Jenks sourly.

Wofforth began to sing, though he did not feel like it:

Trim your nails and scrape your face,
They're all on the Other Side of space!
Tokyo—Baltimore, Maryland—
Hong Kong—Paris—Samarkand—
Tokyo—London—Troy—Fort Worth—
The happy towns of the Planet Earth. . . .

At camp that night he wrote in the log book:

Second Day: Course due west. Run 1014 mi. To go 8576 mi. approx. Supplies adeq. Spirits fair. . . .

"What's for supper?" bawled Corbett, entering. "I could eat a horse."

"That'd be cannibalism," said Jenks at once.

"Yah, you splinter! Don't eat any lizards, then."

Spirits good, Wofforth corrected his entry, and closed the log book. He thought of Lya Stromminger. She was a most efficient officer. Her hair was black as night on Pluto, and her eyes as bright as the faraway sun.

Wofforth wrote in his log book:

Fifth day: Course north, west, then southwest. Curving thru mountainous territory. Run 1066 mi. but direct progress toward base camp not exceeding 950. To go, 6260 mi. approx. Supplies short. Spirits fair.

He wrote in his log book:

Seventh day: Course west, southwest, west, northwest, west. Run 1108 mi. To go 4090 mi. approx. Supplies low. Spirits fair.

He wrote in his log book:

Ninth day: Course northwest by west, west. Run 1108 mi. To go 2030 mi. approx. Supplies low. Spirits low. . . .

"Lieutenant," said Jenks from across the tent, as Wofforth closed the book.

"Well?"

"We know you're in command. This party and all of Pluto. But we ask permission to state our case."

"What case is your case?" demanded Wofforth, rising. "I'm doing my best to get you back to Base Camp."

"Sure," said Corbett. "Sure. But why Base Camp?"

"You know why."

"That's right, we know why," agreed Jenks, and Corbett grinned in his ten days' tussock of beard.

"They'll have left supplies for us," Wofforth went on. "Shelter and food and fuel and instruments. They'll expect us to reach Base Camp and hold it down for the next attempt to reach Pluto."

"We know why," repeated Jenks. "And that's not why, lieutenant. Let me talk, sir. It's a dead man talking."

"You won't die," snapped Wofforth. "I'll get you both there alive."

He stepped to where, in one corner, he had managed a bath—a hollow in the frozen ground, lined by pushing the floor fabric into it. From the heater he ran tepid, clean water into it. He clipped a mirror to the tent foil, searched out an automatic razor, and began to shave his own dark young thatch of beard.

"You're proving my point, lieutenant," said Jenks. "Policing up your face to look pretty."

"Why not?" growled Wofforth, mowing another swath of whiskers.

"No reason why not. Ten, twenty years from now they'll find your body—whenever the inner orbits get to where they can boom off another expedition. You'll look young and clean-shaved. You know who'll weep."

Wofforth lowered the razor in his good hand and glared at the two. They grinned in the bright light opposite him. They looked as if they hoped he'd see the joke.

"I said it's a dying man that's talking," said Jenks again. "Won't you let me say my dying say, lieutenant? Let's all die honest."

"I'm going to get you there," Wofforth insisted.

"Ah, now," said Corbett, as though persuading a naughty child. "You think they've left twenty years' worth of supplies to keep us going? The ship didn't carry that much, even if they left it all." He grinned mirthlessly. "I can figure what you're figuring, lieutenant," he went on, with a touch of Jenks' sly manner. "You die, young and brave. You'll shave up again before you lie down and let go. And when the next shipload arrives there'll be you, lying like a statue of your good-looking young self, frozen stiff. Am I right?"

Corbett was right, Wofforth admitted to himself. The man was more than a great meaty lump, after all, to see another man's unspoken thought so clearly.

"Then," Jenks took it up, "First Mate Lya Stromminger will have a look. She may command the new expedition. She'll be promoted away up to Admiral or higher—twenty years of brilliant service—gone gray around the edges, but still a lovely lady. There you'll lie before her eyes, young and brave as you was when she deserted you. She'll cry, won't she? And hot tears can't thaw you out or wake you up—"

"Shut your heads, both of you!" shouted Wofforth, so fierce and loud that the foil tent wall vibrated as with a gale in the airless night.

But they had guessed true. He'd wanted to be found at Base Camp. He'd wanted Lya Stromminger to know, some day, that she'd blasted off and left behind the man most worthy of all men on all worlds. . . .

"Everybody takes a hot bath tonight," said Wofforth. "We'll all sleep better for it. Tomorrow's our last day on the trail."

"To do two thousand miles?" said Jenks.

"To do all of that. The expedition mapped an area at least that wide around Base Camp, and it's slick and smooth. We can almost slide in."

"All slick and smooth but just this side of Base Camp, lieutenant," said Jenks.

"How do you mean?"

"That string of craters. Don't you remember? It's just this side—east of Base Camp. This sled'll never go over that, sir."

"Nor around," Corbett put in. "We'd have to detour maybe three thousand miles. And the heaters in our suits won't last."

"I know about the craters," said Wofforth. "We'll take care of them when we reach them."

Stripping, he lowered his body into the makeshift tub and began to scrub himself one-handed.

HE WAKENED in the morning to the sound of furious argument.

Corbett and Jenks, of course. A trifle—division of the breakfast ration, or of the breakfast chores—had set off their nerves like trains of explosive. Even as Wofforth rose from his bedstrip, Corbett swung a cobble-like fist at Jenks' gaunt, grimacing face. The nimbler, smaller man ducked and sidled away. Corbett took a lumbering step to close in on his enemy, and Jenks darted a hand to his belt behind, then brought it forward again with an electro-automatic pistol.

"I've been keeping this for you!" Jenks shrilled. "I'll just diminish the population of Pluto by thirty-three and one-third percent!"

"Hold it!" bellowed Wofforth.

He was too late. A stream of bullets chattered through Corbett's body, folding him over and ripping through the paper-thin wall of the tent. Air whistled out; the tent began to collapse.

Jenks, pinned under Corbett's body, was squealing like a pig. "Lieutenant, help me—!"

Wofforth saw in an instant that

the wall could not be patched in time; the bullets had torn loose an irregular strip, pressure had done the rest: even now, the tent was only a few seconds away from complete collapse. As he stumbled across the floor toward the spacesuits, his heart was laboring and his chest straining for breath. Spots swam in front of his eyes. He found the topmost spacesuit by touch, and fumbled for the helmet. The tent drifted down on his head in soft, murderous folds. He opened the valve, shoved his face into the helmet, and gulped precious oxygen. His dulled awareness brightened again, momentarily; but he knew he was still a dead man unless he could get into the suit before pressure fell completely. Numbed fingers plucked at the suit opening. Somehow he got the awkward garment over his legs, closed and locked the torso, pulled down the helmet. . . .

He was lying in darkness, with a low, steady hiss of oxygen in his ears. He rolled over weakly, got to his feet. He turned on his helmet light. He was propping up a gray cave of metal foil, that fell in stiff creases all around him. At his feet were the bodies of Jenks and Corbett. Both were dead.

After a while, clumsily, painfully, he dragged the two corpses free of the tent. He found the heater and thawed a hole in the frozen surface, big enough for both. He tumbled them in, then undercut the edges of the hole with the heater, so that chunks fell in and covered them. While he watched, the cloud of vapor he had made began to settle, slowly congealing on the broken surface and blurring it over again. In a year, there would be no mark here to show that the surface had been disturbed. In a thousand years, it would still be the same.

In the first ray of dawn he flung all supplies from the sled except the fuel containers. He checked the engine, and started it.

Into his belt-bag he thrust the log book. Nothing else went aboard the sled—no food, no water container, no tools, instruments or oxygen tanks. The tent he left lying there, with all that had been carried inside the night before.

As the sun rose clear of the distant rim of the plain to eastward, he rigged a line to the steering boom, then lashed himself securely within reach of the engine. Steering by the taut line, he started westward, slowly at first, then faster. It was as he had hoped. The lightened sled attained and held a greater speed than on any previous day.

"I'll make it," he said aloud, with nobody else to listen on all Pluto. "I'll make it!"

Faster he urged the engine's rhythm, and faster. He clocked its speed by the indicators on the housing. A hundred and fifty miles an hour. A hundred and sixty; not enough. Whipping the boom line tight around his waist to hold his course steady, he sighted between the upcurve of the runner forward. There was level, smooth-frozen country, mile upon mile. He speeded up to one hundred and seventy-five miles an hour. More. The sled hummed at every joining.

At noon, he had done a good thousand miles. At mid-afternoon,

sixteen hundred. Two and a half hours of visibility left, and more than four hundred miles to go.

"I can do those on my head," muttered Wofforth to himself, and then, far in the distance, the flat rim of the horizon was flat no longer.

It had sprung up jagged, full of points and bulges. Speeding toward it, he steered by the line around his waist while he cut his engine. He came close at fifty miles an hour, almost a crawl.

Some ancient volcanic action had thrown up those mountains, like a rank of close-drawn sentries. The sled could not cross them anywhere. Still reducing speed, Wofforth drew close to a notch, but the notch gave into a crater, a great shallow saucer two miles in diameter and filled with shadows below, so that Wofforth could not gauge its depth. Opposite, another notch—perhaps once the crater had been a lake, with water running in and out. If he had come there at noon, he could have seen the bottom, and perhaps—

"But it isn't noon." Wofforth was talking to himself again. His voice sounded thin and petulant in his own ears. "By noon tomorrow, the heat will be out of this suit."

He stopped the sled, unlashed himself and trudged to the notch. He stood in it, looking down, then across.

The little bright jewel of the sun, sagging toward the horizon, showed him the upper reaches of the crater's interior, pitched at an angle of perhaps fifty degrees.

Even if it had been noon, it would have been no use. The sled could never climb a slope like that.

Then he looked again, this way and that. He nodded inside his helmet.

He might as well try.

Returning to the sled, he started the engine and lashed himself fast again. He steered away from the crater, and around. He made a great looping journey of twenty miles or so across the plain, building speed all the time.

As he rounded the rear curve of his course, he was driving along at two hundred and sixty miles an hour, and he had to apply pressure to the boom with both hand and knees to point the sled back straight for the notch. Straightening his humming vehicle into a headlong course, he leaned forward and sighted between the upcurved runners.

"Now!" he urged himself, and watched the break in the crater wall rush towar dhim.

It greatened, yawned. He leaped through, and with a groaning gasp of prayer he dragged the boom over to steer the sled right.

IT WORKED, as he had not dared hope. The runners bounced, bit. Then he was racing around the inside of the great cup's rim, like a hurtling bubble on the inner surface of a whirlpool's funnel. Two miles across, three miles and more on the half diameter—the engine laboring up to three hundred miles an hour, centrifugal force holding it there—

Little more than thirty seconds

raced by when he knew he had won. He saw the far notch growing near. He came to it in a last booming rush, and hurled his whole weight against the boom to face the runners into the notch.

Under the low-dropping sun, he and his sled shot into open country beyond the range.

His right arm felt dead from shoulder to fingertip. His head roared and drummed with the racing of his blood. His face had tired spots in it, where muscles he had never used before had locked into an agonized grimace.

On he sped, straight west, gasping and gurgling and mumbling in crazy triumph.

An hour, an anticlimactic hour wherein the sled almost steered itself over the smoothest of plain, and up ahead he spied the black outline of Base Camp.

It was a sprawling, low structure, prefabricated metal and plastic and insulation, black outside to gather what heat might come from outer space. It held aloof on the dull frozen plain from the irregular stain where the expedition ship had braked off with one set of rockets and had soared away with another set. Larger, more familiar, grew Base Camp with each second of approach. Shakily Wofforth cut his engine, slowed from high speed to medium, to a hundred miles an hour, to sixty, to fifty. He made a final circle around Base Camp, and let it coast in with the engine off, to within twenty yards of the main lock panel.

He got up, on legs that shook inside his boots. He felt his heart still racing, his head still ringing. He sighed once, and walked close, his gauntlet fumbling at the release button on the lock panel.

But the button did not respond.

"Jammed," he said. "No—locked."

He couldn't get in. He had reached Base Camp, but he could not get in. They hadn't counted on his return. They'd gone off and left Base Camp locked up.

He sagged against the lock panel, and cursed once, with an utter and furious resignation.

He felt himself slipping. He was going to faint. His legs would not hold him up. He was slipping forward—seemed to be sinking into the massive and unyielding outer surface of Base Camp. It was a dream. Or it was death.

He did not lose all hold on his awareness. He had a sense of lying at full length, and blinding light flashes that made his eyelids jump. And a tug somewhere, as though his helmet was coming off. He would have put out a hand to see, but his left arm was broken, and his right arm limp from weariness.

"You're back," said a voice he knew, a voice strained with wonder. "You managed. I knew you would."

"Now," said Wofforth, "I know it's a dream. We dream after we die."

A hand was cupped behind his neck, lifting him to a sitting position. He felt warm fluid at his lips. "It's no dream," said the voice beseechingly. "Look at me."

"I don't dare. The dream will go away."

(Continued on page 116)

"First the E-bomb, in which the Earth itself reaches critical mass and explodes. Then the S-bomb, to wreck the Sun—then the G-bomb, and then . . ."

NULL-O

BY PHILLIP K. DICK

LEMUEL clung to the wall of his dark bedroom, tense, listening. A faint breeze stirred the lace curtains. Yellow street-light filtered over the bed, the dresser, the books and toys and clothes.

In the next room, two voices were murmuring together. "Jean, we've got to do something," the man's voice said.

A strangled gasp. "Ralph, please don't hurt him. You must control yourself. I won't let you hurt him."

"I'm not going to hurt him." There was brute anguish in the man's whisper. "Why does he do these things? Why doesn't he play baseball and tag like normal boys?

Why does he have to burn down stores and torture helpless animals? *Why?*"

"He's different, Ralph. We must try to understand."

"Maybe we better take him to the doctor," his father said. "Maybe he's got some kind of glandular disease."

"You mean old Doc Grady? But you said he couldn't find—"

"Not Doc Grady. He quit after Lemuel destroyed his x-ray equipment and smashed all the furniture in his office. No, this is bigger than that." A tense pause. "Jean, I'm taking him up to the Hill."

"Oh, Ralph! Please—"

"I mean it." Grim determination, the harsh growl of a trapped animal. "Those psychologists may be able to do something. Maybe they can help him. Maybe not."

"But they might not let us have him back. And oh, Ralph, he's all we've got!"

"Sure," Ralph muttered hoarsely. "I know he is. But I've made up my mind. That day he slashed his teacher with a knife and leaped out the window. That day I made up my mind. Lemuel is going up to the Hill. . . ."

The day was warm and bright. Between the swaying trees the huge white hospital sparkled, all concrete and steel and plastic. Ralph Jorgenson peered about uncertainly, hat twisted between his fingers, subdued by the immensity of the place.

Lemuel listened intently. Straining his big, mobile ears, he could hear many voices, a shifting sea of voices that surged around him. The voices came from all the rooms and offices, on all the levels. They excited him.

Dr. James North came toward them, holding out his hand. He was tall and handsome, perhaps thirty, with brown hair and black horn-rimmed glasses. His stride was firm, his grip, when he shook hands with Lemuel, brief and confident. "Come in here," he boomed. Ralph moved toward the office, but Dr. North shook his head. "Not you. The boy. Lemuel and I are going to have a talk alone."

Excited, Lemuel followed Dr. North into his office. North quickly secured the door with triple magnetic locks. "You can call me James," he said, smiling warmly at the boy. "And I'll call you Lem, right?"

"Sure," Lemuel said guardedly. He felt no hostility emanating from the man, but he had learned to keep his guard up. He had to be careful, even with this friendly, good-looking doctor, a man of obvious intellectual ability.

North lit a cigarette and studied the boy. "When you tied up and then dissected those old derelicts," he said thoughtfully, "you were scientifically curious, weren't you? You wanted to *know*—facts, not opinions. You wanted to find out for yourself how human beings were constructed."

Lemuel's excitement grew. "But no one understood."

"No." North shook his head. "No, they wouldn't. Do you know why?"

"I think so."

North paced back and forth. "I'll

give you a few tests. To find out things. You don't mind, do you? We'll both learn more about you. I've been studying you, Lem. I've examined the police records and the newspaper files." Abruptly, he opened the drawer of his desk and got out the Minnesota Multiphasic, the Rorschach blots, the Bender Gestalt, the Rhine deck of ESP cards, an ouija board, a pair of dice, a magic writing tablet, a wax doll with fingernail parings and bits of hair, and a small piece of lead to be turned into gold.

"What do you want me to do?" Lemuel asked.

"I'm going to ask you a few questions, and give you a few objects to play with. I'll watch your reactions, note down a few things. How's that sound?"

Lemuel hesitated. He needed a friend so badly—but he was afraid. "I—"

Dr. North put his hand on the boy's shoulder. "You can trust me. I'm not like those kids that beat you up, that morning."

Lemuel glanced up gratefully. "You know about that? I discovered the rules of their game were purely arbitrary. Therefore I naturally oriented myself to the basic reality of the situation, and when I came up at bat I hit the pitcher and the catcher over the head. Later I discovered that all human ethics and morals are exactly the same sort of—" He broke off, suddenly afraid. "Maybe I—"

Dr. North sat down behind his desk and began shuffling the Rhine ESP deck. "Don't worry, Lem," he said softly. "Everything will be all right. I understand."

AFTER the tests, the two of them sat in silence. It was six o'clock, and the sun was beginning to set outside. At last Dr. North spoke.

"Incredible. I can scarcely believe it, myself. You're utterly logical. You've completely cast off all thalamic emotion. Your mind is totally free of moral and cultural bias. You're a perfect paranoid, without any empathic ability whatever. You're utterly incapable of feeling sorrow or pity or compassion, or *any* of the normal human emotions."

Lemuel nodded. "True."

Dr. North leaned back, dazed. "It's hard even for me to grasp this. It's overwhelming. You possess super-logic, completely free of value-orientation bias. And you conceive of the entire world as organized against you."

"Yes."

"Of course. You've analyzed the structure of human activity and seen that as soon as they find out, they'll pounce on you and try to destroy you."

"Because I'm different."

North was overcome. "They've always classed paranoia as a mental illness. But it isn't! There's no lack of contact with reality—on the contrary, the paranoid is *directly* related to reality. He's a perfect empiricist. Not cluttered with ethical and moral-cultural inhibitions. The paranoid sees things as they really are; he's actually the only sane man."

"I've been reading *Mein Kampf*," Lemuel said. "It shows me I'm not alone." And in his mind he breathed the silent prayer of thanks: *Not alone*. Us. There are more of us.

Dr. North caught his expression. "The wave of the future," he said. "I'm not a part of it, but I can try to understand. I can appreciate I'm just a human being, limited by my thalamic emotional and cultural bias. I can't be one of you, but I can sympathize. . . ." He looked up, face alight with enthusiasm. "And I can help!"

The next days were filled with excitement for Lemuel. Dr. North arranged for custody of him, and the boy took up residence at the doctor's uptown apartment. Here, he was no longer under pressure from his family; he could do as he pleased. Dr. North began at once to aid Lemuel in locating other mutant paranoids.

One evening after dinner, Dr. North asked, "Lemuel, do you think you could explain your theory of Null-O to me? It's hard to grasp the principle of non-object orientation."

Lemuel indicated the apartment with a wave of his hand. "All these apparent objects—each has a name. Book, chair, couch, rug, lamp, drapes, window, door, wall, and so on. But this division into objects is purely artificial. Based on an antiquated system of thought. In reality there are no objects. The universe is actually a unity. We have been taught to think in terms of objects. This *thing*, that *thing*. When Null-O is realized, this purely verbal division will cease. It has long since outlived its usefulness."

"Can you give me an example, a demonstration?"

Lemuel hesitated. "It's hard to do alone. Later on, when we've contacted others . . . I can do it crudely, on a small scale."

As Dr. North watched intently, Lemuel rushed about the apartment gathering everything together in a heap. Then, when all the books, pictures, rugs, drapes, furniture and bric-a-brac had been collected, he systematically smashed everything into a shapeless mass.

"You see," he said, exhausted and pale from the violent effort, "the distinction into arbitrary objects is now gone. This unification of things into their basic homogeneity can be applied to the universe as a whole. The universe is a gestalt, a unified substance, without division into living and nonliving, being and non-being. A vast vortex of energy, not discrete particles! Underlying the purely artificial appearance of material objects lies the world of reality: a vast undifferentiated realm of pure energy. Remember: the object is not the reality. First law of Null-O thought!"

Dr. North was solemn, deeply impressed. He kicked at a bit of broken chair, part of the shapeless heap of wood and cloth and paper and shattered glass. "Do you think this restoration to reality can be accomplished?"

"I don't know," Lemuel said simply. "There will be opposition, of course. Human beings will fight us;

they're incapable of rising above their monkey-like preoccupation with *things*—bright objects they can touch and possess. It will all depend on how well we can coördinate with each other."

Dr. North unfolded a slip of paper from his pocket. "I have a lead," he said quietly. "The name of a man I think is one of you. We'll visit him tomorrow—then we'll see."

DR. JACOB WELLER greeted them with brisk efficiency, at the entrance of his well-guarded lab overlooking Palo Alto. Rows of uniformed government guards protected the vital work he was doing, the immense system of labs and research offices. Men and women in white robes were working day and night.

"My work," he explained, as he signaled for the heavy-duty entrance locks to be closed behind them, "was basic in the development of the C-bomb, the cobalt case for the H-bomb. You will find that many top nuclear physicists are Null-O."

Lemuel's breath caught. "Then —"

"Of course." Weller wasted no words. "We've been working for years. Rockets at Peenemünde, the A-bomb at Los Alamos, the hydrogen bomb, and now this, the C-bomb. There are, of course, many scientists who are not Null-O, regular human beings with thalamic bias. Einstein, for example. But we're well on the way; unless too much opposition is encountered we'll be able to go into action very shortly."

The rear door of the laboratory slid aside, and a group of white-clad men and women filed solemnly in. Lemuel's heart gave a jump. Here they were, full-fledged adult Null-O's! Men and women both, *and they had been working for years!* He recognized them easily; all had the elongated and mobile ears, by which the mutant Null-O picked up minute air vibrations over great distances. It enabled him to communicate, wherever they were, throughout the world.

"Explain our program," Weller said to a small blond man who stood beside him, calm and collected, face stern with the importance of the moment.

"The C-bomb is almost ready," the man said quietly, with a slight German accent. "But it is not the final step in our plans. There is also the E-bomb, which is the ultimate of this initial phase. We have never made the E-bomb public. If human beings should find out about it, we should have to cope with serious emotional opposition."

"What is the E-bomb?" Lemuel asked, glowing with excitement.

"The phrase, 'the E-bomb,' " said the small blond man, "describes the process by which the Earth itself becomes a pile, is brought up to critical mass, and then allowed to detonate."

Lemuel was overcome. "I had no idea you had developed the plan this far!"

The blond man smiled faintly. "Yes, we have done a lot, since the early days. Under Dr. Rust, I was

able to work out the basic ideological concepts of our program. Ultimately, we will unify the entire universe into a homogeneous mass. Right now, however, our concern is with the Earth. But once we have been successful here, there's no reason why we can't continue our work indefinitely."

"Transportation," Weller explained, "has been arranged to other planets. Dr. Frisch here—"

"A modification of the guided missiles we developed at Peenemünde," the blond man continued. "We have constructed a ship which will take us to Venus. There, we will initiate the second phase of our work. A V-bomb will be developed, which will restore Venus to its primordial state of homogeneous energy. And then—" He smiled faintly. "And then an S-bomb. The Sol bomb. Which will, if we are successful, unify this whole system of planets and moons into a vast gestalt."

By June 25, 1969, Null-O personnel had gained virtual control of all major world governments. The process, begun in the middle thirties, was for all practical purposes complete. The United States and Soviet Russia were firmly in the hands of Null-O individuals. Null-O men controlled all policy-level positions, and hence, could speed up the program of Null-O. The time had come. Secrecy was no longer necessary.

Lemuel and Dr. North watched from a circling rocket as the first H-bombs were detonated. By careful arrangement, both nations began H-bomb attack simultaneously. Within an hour, class-one results were obtained; most of North America and Eastern Europe were gone. Vast clouds of radioactive particles drifted and billowed. Fused pits of metal bubbled and sputtered as far as the eye could see. In Africa, Asia, on endless islands and out-of-the-way places, surviving human beings cowered in terror.

"Perfect," came Dr. Weller's voice in Lemuel's ears. He was somewhere below the surface, down in the carefully protected headquarters where the Venus ship was in its last stages of assembly.

Lemuel agreed. "Great work. We've managed to unify at least a fifth of the world's land surface!"

"But there's more to come. Next the C-bombs are to be released. This will prevent human beings from interfering with our final work, the E-bomb installations. The terminals must still be erected. That can't be done as long as humans remain to interfere."

Within a week, the first C-bomb was set off. More followed, hurtled up from carefully concealed launchers in Russia and America.

By August 5, 1969, the human population of the world had been diminished to three thousand. The Null-O's, in their subsurface offices, glowed with satisfaction. Unification was proceeding exactly as planned. The dream was coming true.

"Now," said Dr. Weller, "we can begin erection of the E-bomb terminals."

ONE terminal was begun at Arequipa, Peru. The other, at the opposite side of the globe, at Bandoeng, Java. Within a month the two immense towers rose high against the dust-swept sky. In heavy protective suits and helmets, the two colonies of Null-O's worked day and night to complete the program.

Dr. Weller flew Lemuel to the Peruvian installation. All the way from San Francisco to Lima there was nothing but rolling ash and still-burning metallic fires. No sign of life or separate entities: everything had been fused into a single mass of heaving slag. The oceans themselves were steam and boiling water. All distinction between land and sea had been lost. The surface of the Earth was a single expanse of dull gray and white, where blue oceans and green forests, roads and cities and fields had once been.

"There," Dr. Weller said. "See it?"

Lemuel saw it, all right. His breath caught in his throat at its sheer beauty. The Null-O's had erected a vast bubble-shield, a sphere of transparent plastic amidst the rolling sea of liquid slag. Within the bubble the terminal itself could be seen, an intricate web of flashing metal and wires that made both Dr. Weller and Lemuel fall silent.

"You see," Weller explained, as he dropped the rocket through the locks of the shield, "we have only unified the surface of the Earth and perhaps a mile of rock beneath. The vast mass of the planet, however, is unchanged. But the E-bomb will handle that. The still-liquid core of the planet will erupt; the whole sphere will become a new sun. And when the S-bomb goes off, the entire system will become a unified mass of fiery gas."

Lemuel nodded. "Logical. And then—"

"The G-bomb. The galaxy itself is next. The final stages of the plan. . . . So vast, so awesome, we scarcely dare think of them. The G-bomb, and finally—" Weller smiled slightly, his eyes bright. "Then the U-bomb."

They landed, and were met by Dr. Frisch, full of nervous excitement. "Dr. Weller!" he gasped. "Something has gone wrong!"

"What is it?"

Frisch's face was contorted with dismay. By a violent Null-O leap he managed to integrate his mental faculties and throw off thalamic impulses. "A number of human beings have survived!"

Weller was incredulous. "What do you mean? How—"

"I picked up the sound of their voices. I was rotating my ears, enjoying the roar and lap of the slag outside the bubble, when I picked up the noise of ordinary human beings."

"But where?"

"Below the surface. Certain wealthy industrialists had secretly transferred their factories below ground, in violation of their governments' absolute orders to the contrary."

"Yes, we had an explicit policy to prevent that."

"These industrialists acted with

typical thalamic greed. They transferred whole labor forces below, to work as slaves when war began. At least ten thousand humans were spared. They are still alive. And—"

"And what?"

"They have improvised huge bores, and are moving this way as quickly as possible. We're going to have a fight on our hands. I've already notified the Venus ship. It's being brought up to the surface at once."

Lemuel and Dr. Weller glanced at each other in horror. There were only a thousand Null-O's; they'd be outnumbered ten to one. "This is terrible," Weller said thickly. "Just when everything seemed near completion. How long before the power towers are ready?"

"It will be another six days before the Earth can be brought up to critical mass," Frisch muttered. "And the bores are virtually here. Rotate your ears. You'll hear them."

Lemuel and Dr. Weller did so. At once, a confusing babble of human voices came to them. A chaotic clang of sound, from a number of bores converging on the two terminal bubbles.

"Perfectly ordinary humans!" Lemuel gasped. "I can tell by the sound!"

"We're trapped!" Weller grabbed up a blaster, and Frisch did so, too. All the Null-O's were arming themselves. Work was forgotten. With a shattering roar the snout of a bore burst through the ground and aimed itself directly at them. The Null-O's fired wildly; they scattered and fell back toward the tower.

A second bore appeared, and then a third. The air was alive with blazing beams of energy, as the Null-O's fired and the humans fired back. The humans were the most common possible, a variety of laborers taken subsurface by their employers. The lowest forms of human life: clerks, bus drivers, day-laborers, typists, janitors, tailors, bakers, turret lathe operators, shipping clerks, baseball players, radio announcers, garage mechanics, policemen, necktie peddlers, ice cream venders, door-to-door salesmen, bill collectors, receptionists, welders, carpenters, construction laborers, farmers, politicians, merchants—the men and women whose very existence terrified the Null-O's to their core.

The emotional masses of ordinary people who resented the Great Work, the bombs and bacteria and guided missiles, were coming to the surface. They were rising up—finally. Putting an end to super-logic: rationality without responsibility.

"We haven't a chance," Weller gasped. "Forget the towers. Get the ship to the surface."

A salesman and two plumbers were setting fire to the terminal. A group of men in overalls and canvas shirts were ripping down the wiring. Others just as ordinary were turning their heat guns on the intricate controls. Flames licked up. The terminal tower swayed ominously.

The Venus ship appeared, lifted to the surface by an intricate stage-system. At once the Null-O's poured into it, in two efficient lines, all of them controlled and integrated as

the crazed human beings decimated their ranks.

"Animals," Weller said sadly. "The mass of men. Mindless animals, dominated by their emotions. Beasts, unable to see things logically."

A heat beam finished him off, and the man behind moved forward. Finally the last remaining Null-O was aboard, and the great hatches slammed shut. With a thunderous roar the jets of the ship opened, and it shot through the bubble into the sky.

Lemuel lay where he had fallen, when a heat beam, wielded by a crazed electrician, had touched his left leg. Sadly, he saw the ship rise, hesitate, then crash through and dwindle into the flaming sky. Human beings were all around him, repairing the damaged protection bubble, shouting orders and yelling excitedly. The babble of their voices beat against his sensitive ears; feebly, he put his hands up and covered them.

The ship was gone. He had been left behind. But the plan would continue without him.

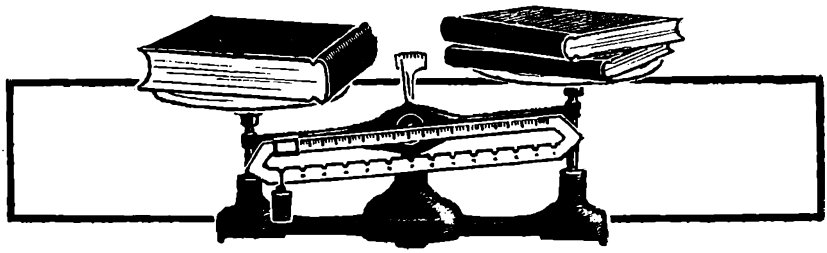
A distant voice came to him. It was Dr. Frisch aboard the Venus ship, yelling down with cupped hands. The voice was faint, lost in the trackless miles of space, but Lemuel managed to make it out above the noise and hubbub around him.

"Goodbye . . . We'll remember you . . ."

"Work hard!" the boy shouted back. "Don't give up until the plan is complete!"

"We'll work . . ." The voice grew more faint. "We'll keep on . . ." It died out, then returned for a brief instant. "We'll succeed . . ." And then there was only silence.

With a peaceful smile on his face, a smile of happiness and contentment, satisfaction at a job well done, Lemuel lay back and waited for the pack of irrational human animals to finish him. **END**



IN THE BALANCE

Book Reviews by the Editor

JAMES BLISH'S *A Case of Conscience,* which created a sensation when it appeared in IF in 1953, has now been expanded by the author into a full-length novel (Ballantine, 35c) which is even better than the original: a rich, controlled, deeply felt work.

The original novelette appears with only minor changes as Book One of the novel. It deals with the fascinating moral, theological and practical problems posed by the idyllic reptilian culture of the planet Lithia, under investigation by a U. N. team including an aggressive atheist and a Jesuit priest. The other two members are more or less neutral, but to Cleaver the engineer and Ruiz-Sanchez the Jesuit biologist, Lithia is not merely a planet for exploitation, but a testing ground of faith.

Cleaver, a grotesque symbol of ruthless materialism, wants to use Lithia as an inexhaustible storehouse of nuclear weapons. Ruiz-Sanchez wants it sealed off from all further contact, for an equally grotesque but logical reason:

Lithia's scaly citizens enjoy perfect peace and happiness—the state of Eden before the Fall—without religion. To Ruiz-Sanchez, this theologically impossible condition can only be a creation of the Adversary—one more piece of manufactured evidence to destroy belief in God. In short, he is convinced that the whole planet and all its creatures are a fabrication of the Devil.

Book One ends in a poetic ambiguity, as the U. N. team, unable to agree on any decision, prepares to go back to Earth. The reader is left to wonder whether Ruiz-Sanchez is tragically right, or pathetically wrong. As a final gesture, one of the Lithians has presented Ruiz-Sanchez with a vase in which a Lithian egg has been placed. And it is from this egg, in an astonishingly forceful growth of logic, that

the rest of the story emerges.

The Earth background of Book Two, which might have been dim in comparison with the rich landscape of Lithia, is stunningly vivid. The new characters, half a dozen of them, are drawn with a sure touch Blish never had before, and even the old characters, including Ruiz-Sanchez himself, have taken on a new roundness, a new feeling of humanity.

But Egtverchi, the emigrated Lithian, steals the show whenever he appears. Blish has had the insight to realize that a Lithian brought up in Earth's decadent underground society would be neither a denizen of Paradise nor one of Earth. Egtverchi is a rogue male, a brilliant, spiritually crippled, rootless maker of mischief. Unable to feel any kinship with Earth's customs, wholly ignorant of Lithia's, he has no role but to spread dissension: and he does so with élan, audacity and style.

Without fumbling a moment, Blish carries this story forward concurrently with three others—Michaelis' love affair with Liu Meid, Ruiz-Sanchez' pilgrimage to Rome in the expectation of being tried for heresy, and Cleaver's conquest of Lithia. They all come together with a bang—leaving the reader, again, to decide for himself what has actually happened and who was in the right.

To my mind, Blish has balanced this equation with exquisite nicety. Most stories on theological themes are written polemically from one viewpoint or the other, excluding the arguments of the opposing side. Blish has put them all in, and so compellingly that even if you are a confirmed doubter like me, you must feel the truth of Ruiz-Sanchez' agony: and I think very likely, even if you are a True Believer, you must glimpse some of the yawning holes in Ruiz-Sanchez' position.

The book resonates with a note of its own; although the final question is not answered, the novel is in no sense unfinished—it is complete and perfect.

Fred Hoyle, the Cambridge astronomer noted for his revolutionary creation, has written a delightful first novel, *The Black Cloud,* (Harper, $2.95). His theme was familiar thirty years or so ago, when world-wrecking stories were in vogue, but has lately been neglected: what would happen if the solar system passed through a dense cloud of cosmic dust?

Hoyle's answer, written from the viewpoint of the professional astronomer, is at once more elaborately convincing and a lot livelier than the usual gloom-laden treatment. Something of a rebel in politics as well as in astronomy, Hoyle takes a dim view of the governments of his country and ours, and shows no reverence even for the eminent members of his own profession.

The menace of the Cloud, frighteningly plausible to begin with (" 'Within a fortnight we shall have a hundred degrees of frost, and within a month there'll be two hundred and fifty or more.' ") is enlivened by Hoyle's disrespectful irony, and heightened by his careful and elaborate exposition of the

problem. (When a calculation is called for, Hoyle puts it in a footnote.) Except for one or two lapses, when trained astronomers patiently explain kindergarten matters to each other, Hoyle's presentation of this difficult subject is both plausible and lucid. His manipulation of the problem, when it turns out that the Cloud is more than it seems, I had better pass over, for fear of spoiling the story; but it is masterly, and the result is a whacking good science-puzzle thriller.

The label under which they were published, "novels of menace," is as good a description as any of *A Stir of Echoes,* by Richard Matheson, and *The Man Who Couldn't Sleep,* by Charles Eric Maine (Lippincott, each $3.00). Neither is quite science fiction, although both resemble it. The Matheson is a thin and banal ghost story with psi trimmings, written in a Chippendale Chinese style (*e.g.,* "knitting plastically into a hot core of multiformed awareness") stuffed full of tautologies (who else but Matheson could write, "'to re-plunge back into the formless irrational again'"?). The dialogue is California Domestic, the descriptions eloquently emetic.

The Maine, published in England as *Escapement* in 1956, is one of this erratic author's oddest performances: a tasteless and shoddy mixture of Sax Rohmer and Mickey Spillane, with some passages of strikingly good s-f extrapolation and imagination. The hero, a scientist named Maxwell, is a man who has suffered an injury to his sleep center, and who undergoes periodic losses of various functions as a result—like a Superman in reverse, at crucial moments he is likely to go deaf, or lose his memory. The characters are almost without exception sadistic dream-images; Maxwell himself is a gray cipher. When it pauses between acts of violence, the story is sometimes intriguing, oftener dull. A multiple murder by the hero, (98,432,812 victims) winds up the story.

Robots and Changelings, by Lester del Rey (Ballantine, 35c), is a collection of eleven stories originally published between 1939 and 1957. Although the stories range widely in subject, and show some technical development, they are remarkably uniform in theme. Del Rey's preoccupation now, as it was when he began to write fiction, is the superseded man, the odd one, the misfit—the dying god of "The Pipes of Pan," the elf of "The Coppersmith," the old space captain of "The Still Waters," the normal boy in a super-world of "Kindness," the immortal dog of "The Keepers of the House," the aging dictator of "Uneasy Lies the Head," the man without an identity of "The Monster," the puzzled robot of "Into Thy Hands." These stories are memorable for their quiet compassion.

The Skylark of Space, by Edward E. Smith (Pyramid, 35c), somewhat abridged and rewritten, captures my imagination as much as ever it did. This 30-year-old grandfather of the galactic space opera—

Smith's first story—has a fast, lean plot, an air of excitement, and four characters who are comfortingly bigger than life. Later writers felt they had to be more finicking about interstellar distances, and more sophisticated about the motives of heroes and villains. In *The Skylark,* everything is big and simple—Seaton, his alter ego DuQuesne, the wonderful globular spaceship—and the feeling that adventures are waiting everywhere.

The Other Side of the Sky, by Arthur C. Clarke, (Harcourt, Brace, $3.95), takes its title from one of the two series of short-short space stories which are included in the volume. These vignettes, twelve of them, are without exception remarkably trivial. The other twelve stories, first published between 1949 and 1957, include some of Clarke's very best work—notably "The Nine Billion Names of God," "The Star," "Out of the Sun," and "The Songs of Distant Earth."

TAKEN together, there are twenty-two stories in *The Best Science Fiction Stories and Novels, Ninth Series,* edited by T. E. Dikty (Advent, $3.50), and *S-F, the Year's Greatest Science-Fiction and Fantasy,* edited by Judith Merril (Dell, 35c). Of these, to my mind, two are first-rate: "Call Me Joe," by Poul Anderson, from *Astounding,* and "Hunting Machine," by Carol Emshwiller, from *Science Fiction Stories.* Both stories appear in the Dikty collection.

The Anderson is a powerful novelette about a man's existence-by-proxy on the planet Jupiter, written with brilliance and symphonic vigor. Reinterpreting Simak's "Desertion" and Blish's "Bridge," it improves on both of them, which is no small achievement.

The Emshwiller, one of the first published stories by this talented writer, is a jewel-perfect vignette of human spiritual smallness, contrasted with the physical bigness of a brown bear. Not many stories this small pack so much wallop.

The best of the rest are Kuttner's comic "Near Miss" (Merril), Kate Wilhelm's dizzy and compact "The Mile-Long Spaceship" (Dikty, *Astounding*), Brian W. Aldiss's engagingly insane "Let's Be Frank" (Merril, *New Worlds*), Avram Davidson's "New Let Us Sleep" and Algis Budrys' "The Edge of the Sea" (Merril, *Venture*), two powerful stories crippled by false endings; Rog Phillips' "Game Preserve" (Merril, *If*) and Lloyd Biggle, Jr.'s "The Tunesmith" (Dikty, *If*).

The others are all reasonably good but undistinguished stories: lackluster exercises on familiar themes. Seven of Merril's eleven stories belong to the "and fantasy" half of her title; Dikty's, with the exceptions mentioned, are mostly dead-level puzzles of melodramas, each one grayly blending into a hundred similar stories you have read and mildly enjoyed.

Ladies and gentlemen, it was a bad year.

Man of Earth, by Algis Budrys, (Ballantine, 35c) is an expanded and revised version of the novelette,

"The Man From Earth," which appeared in *Satellite* in 1956. The new version has all the faults and virtues of the original, plus a few new ones. Budrys' opening situation is one of the most intriguing ideas in recent science fiction: a mousy little executive named Sibley undergoes "personality alteration" and effectively becomes a new person. Outgoing, virile and combative, he takes the appropriate name of John L. Sullivan.

This death-and-rebirth episode is symbolically powerful, and beautifully managed. When Budrys goes on to tell the adventures of Sullivan, however, the story first loses its special flavor, and then becomes a different story altogether.

Sibley was persuasively drawn, with all his timidities and his hating self-knowledge; Sullivan is a big lump who gets dragooned into the army on Pluto, knocks everybody around, and is unable to understand why nobody likes him.

The brutal training program which is then set forth in detail has its own horrid fascination, but is not science fiction; neither is Sullivan's conventional romance with a counter girl (straight out of how many pulp fight stories and Westerns?). The story is oriented around a question: what is this army training itself so hard *for?* And the answer, this time, is no more satisfactory than it was before. In the original version, Budrys rang in some last-minute aliens and a lot of invasion-of-Earth nonsense; in this one, he explains at the end that the army is going to be sent out to colonize the stars, because nobody else wants to.

Cut it out. Somebody *always* wants to go anywhere.

Out of This World, by Murray Leinster, is a loosely organized collection of stories about Bud Gregory, the hillbilly polymath who has an intuitive understanding of electronics and atomic physics, and whomps up a new wonderful invention in every other chapter. The stories originally appeared in *Thrilling Wonder.*

As always, Leinster is ingenious in thinking up zany practical applications of slightly cockeyed principles. But watching Gregory pull these things out of his hat one after the other is wearisome; unlimited fantasy, as Arthur Koestler said (and as H. G. Wells said before him) is generally boring.

World Without Men, (Ace, 35c) is Charles Eric Maine's usual mixture of audacity, bad taste, worse science, sadism, ingenuity and imaginative syntax. This one is about a world in which the men have all died off due to the use of Sterilin, an oral contraceptive. Maine explains this with some remarkably antiquated Bergsonian blether: ". . . a blind reaction of nature to the mass Sterilin addiction of the human race. From nature's point of view almost the entire female half of the human species had become sterile. What was the obvious compensating action? Simply to produce more females to replace those who had lost their capacity to conceive. . . ." Why "nature" didn't conclude the childless males

were sterile, and produce more of them too, Maine does not say.

The Sundial, by Shirley Jackson (Farrar, Straus & Cudahy, $3.75) either is or is not science fiction, fantasy, or a perfectly (if peculiarly) mundane novel, according to how you look at it. The story concerns a warning received by a maiden lady from her late father that the world is coming to an end. The warning, if it is a warning, is entirely subjective but certainly feels real enough, and in one way or another a whole oddly-assorted family plus a few even odder guests come to believe in it, and prepare for the day of destruction.

The Halloran family relationship is one of delicately balanced distastes and malices, candidly expressed. ("Did you marry me for my father's money?" "Well, that, and the house.") The goings-on in the household are unexceptional, even dreary, but every now and then there is a vaguely unsettling incursion of fantasy: a snake in the fireplace; a mist in which marble statues appear warm as flesh. There is a suggestion throughout that the banal domestic reality of the house is only a fiction, which may be discarded at any moment. "'We are in a pocket of time, Orianna, a tiny segment of time suddenly pinpointed by a celestial eye.'" The tiny cruelties of the family circle grow to seem almost kindly, in comparison with the vast Zero that waits outside; and when in the last chapter the household waits for the appointed day, the question is not only, "Will the world end?" but "Did it ever exist?"

Fantasia Mathematica, edited by Clifton Fadiman, is a tasteful collection of stories, poems and oddments dealing mostly with the fantasy worlds of mathematics. Fifteen stories are science fiction or fantasy, including Robert A. Heinlein's "And He Built a Crooked House," Martin Gardner's "No-Sided Professor," and "A Subway Named Moebius," by A. J. Deutsch. The pill is carefully sugar-coated, with selections from the works of Huxley, Koestler, Cabell, Plato, Capek, Morley, Millay, Housman and many others, and will persuade book snobs that science fiction is good . . . maybe.

The Space Encyclopaedia, edited by M. T. Bizony and R. Griffin (Dutton, $6.95) is a beautifully comprehensive and convenient source book for science fiction writers, and for readers interested in keeping up with the explosive new field of space exploration. There are general articles on such subjects as Cosmology; the Galaxy; Relativity, Theory of; &c.; and shorter entries, from a page or so down to a single sentence, clearly explaining technical terms and concepts in astronomy and rocketry. The 300 illustrations are fascinating in themselves. The book is photo-offset (apparently from the original British edition) on heavy, glossy white paper. The price is stiff, but the book is worth it.

From the Earth to the Moon and *A TripAround It,* by Jules Verne.

Lippincott, $1.95. Here are two classics, of which I was able to penetrate the first one a matter of some 70 pages. In this translation at least, it is heavily jocose, creaky ("'What point in the heavens ought the cannon to be aimed at which is intended to discharge the projectile?'") and chock full of scientific misinformation.

The Iron Heel, by Jack London. Macmillan, $3.72. Here's another classic which I'd never opened before, and this one is lively. In spite of having been written (in 1907) about the period beginning with 1913, the book carries its own clumsy, exuberant conviction. Some of the characters are lay figures, speaking to prove London's point rather than their own, but it doesn't seem to matter. Ernest Everhard is one of the last of the Victorian heroes of fiction—a lot bigger than life and more entertaining. Some of London's forecasts are pathetically unreal—contrast his socialist uprising against World War I with the patriotic frenzy that really took place—others are curiously suggestive; for instance, he begins the war with a German attack on Honolulu (on December 4th!). Toward the latter part, the book drifts off inconclusively, but it's still alive and kicking.

The Shrouded Planet, by Robert Randall. Gnome, $3.00. All about the planet Nidor, whose ecology seems to be made up entirely of peych beans, hugl bugs, and simpletons.

The Survivors, by Tom Godwin. Gnome, $3.00. Some intersteller colonists are captured by the Gerns and set down on a cold, high-gravity planet. The survivors drive themselves for three generations to get their own back. The conception is grandiose, the execution glum and banal.

SATELLITE PASSAGE

(Continued from page 37)

lector, hunting for the frequency the Russians were using. Kaufman found it. He said, "Got it, I think. One twenty-eight point nine."

Morgan set his selector, heard nothing at first. Then hard in his ear burst an unintelligible sentence with the characteristic fruity diphthongs of Russian. "I think that's it," he said.

He watched, and the satellite increased in size. "No rifle or any other weapon that I see," said Morgan. "But they *are* carrying a lot of extra oxygen bottles."

Kaufman grunted. McNary asked, "Can you tell if it's a collision course yet? I can't."

Morgan stared at the satellite through narrowed eyes, frowning in concentration. "I think not. I think it'll cross our bow twenty or thirty feet out; close but no collision."

McNary's breath sounded loud in the helmet. "Good. Then we've nothing but the men to worry about. I wonder how those boys pitch."

Another burst of Russian came over the radio, and with it Morgan felt himself slip into the relaxed state he knew so well. No longer was the anticipation rising. He was ready now, in a state of calm, a deadly and efficient calm—ready for the test. This was how it always was with him when the time came, and the time was now.

Morgan watched as the other satellite approached. His feet were apart and his head turned sideways over his left shoulder. At a thousand yards, he heard a mutter in Russian and saw the man at the stern start moving rapidly toward the bow. His steps were long. Too long.

Morgan saw the gap appear between the man and the surface of the other ship, saw the legs kicking in a futile attempt to establish contact again. The radio was alive with quick, short sentences, and the two men turned and began to work their way swiftly toward the bit of human jetsam that floated near them.

"I'll be damned," said Kaufman. "They'll never make it."

Morgan had seen that this was true. The gap between floating man and ship widened faster than the gap between men and floating man diminished. Without conscious thought or plan, Morgan leaned forward and pulled the jack on the telephone line from McNary's helmet. He leaned back and did the same to Kaufman, straightened and removed his own. He threw a quick knot and gathered the line, forming a coil in his left hand and one in his right, and leaving a large loop floating near the ship in front of him. He stepped forward to clear Kaufman, and twisted his body far around to the right. There he waited, eyes fixed on the other satellite. He crouched slightly and began to lean forward, far forward. At the proper moment he snapped both his arms around to throw the line, the left hand throwing high, the right low. All his sailor's skill went into that heave. As the other satellite swept past, the line flew true to meet it. The floating man saw it coming and grabbed it and

wrapped it around his hand and shouted into the radio. The call was not needed; the lower portion of the line struck one of the walking men. He turned and pulled the line into his arms and hauled it tight. The satellite was barely past when the bit of human jetsam was returning to its metallic haven. The two men became three again, and they turned to face the American satellite. As one man the three raised both arms and waved. Still without thinking, Morgan found himself raising an arm with Kaufman and McNary and waving back.

He dropped his arm and watched the satellite shrink in size. The calmness left him, replaced by a small spot of emptiness that grew inside him, and grew and swelled and threatened to engulf him.

Passage was ended, but the taste in his mouth was of ashes and not of glory. **END**

HALF AROUND PLUTO

(Continued from page 98)

But he opened his eyes and looked at her hair like Plutonian night, her eyes like bright stars. "Lya," he said. "I'm going to call you Lya."

"Please call me Lya."

"I'd be bound to dream about you. I've dreamed about you so much . . . *Owww!*"

He got his right hand up to cherish his tingling cheek.

"So you felt that," she said. "Now you know you're awake. Or must I slap you again?"

"I'm sorry, Madame."

"You called me Lya. Can you stand up? I'll help you."

She helped him. He stood up, there in the admission chamber of Base Camp. Lya Stromminger was smiling, and she was crying, too.

"You didn't go away," he said. "You're still here." The weight of his odyssey, half around Pluto, was beginning to stagger him.

"No, I stayed. I knew you'd come back. I knew Pluto couldn't kill you or keep you from coming back."

He drank more from the cup she held to his lips.

"We'll wait together for them to come with the next expedition," she promised him.

"Twenty years? Supplies—"

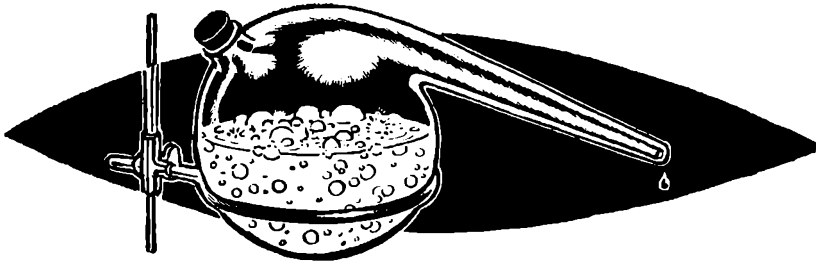
"There'll be plenty. Don't you know about Pluto? Didn't those craters, those old volcanoes, tell you?"

Thinking of how he had crossed the crater, Wofforth shuddered.

"Pluto is colder than anybody even guessed—outside. But inside are the internal fires—like all the solid planets. We made our tests and we can tap them. I kept the instruments for that. It means we'll have power, and can make our synthetic foods and so on for as long as we need them. You are I are the inhabitants here—"

He stumbled to a chair and sat. "Twenty years—" he said.

Her arm was still around him. Her hair brushed his cheek. "It won't be long. We have so much to say to each other." **END**



THE RETORT

I have several bouquets and a couple of bottles of skunk perfume to hand out.

My first bouquet, a big one, goes to your magazine as a whole. You publish, issue for issue, the *best* sociological s-f on the market. That's not all, however; you also seem to have a corner on the most imaginative "space opera" to be found on the corner newsstand.

A bouquet, also, for your artwork.

As for your stories, I'm afraid that this was an off issue for you. *A Question of Identity* was superb. *Powder Keg* is good, but the same idea popped up in *Operation: Outer Space. Passport to Sirius, The Raider,* and *The Bureaucrat* were mediocre (for you).

Conservation had a painfully obvious ending; and a gallon of high-grade skunk oil to whoever "brainstormed" up the idea of publishing *Homecoming.* I think that Mr. Hidalgo wrote up a nightmare he had one night, and (through hypnotism?) fobbed it off on you.

Bantering aside, I would like to make some constructive suggestions:

1) Why not get Kelly Freas?

2) Why not eliminate *Science Quiz* altogether?

3) Why not add 10 pages; everyone else has 130?

4) Why must I always turn to the back of the magazine for the last two paragraphs of any interesting story? (The 10 pages mentioned above would liquidate this nuisance.)

5) Why not bring back Forrest J. Ackerman's column of s-f news notes?

6) Why not write some real editorials; if *Astounding* and the Columbia magazines (SFQ, SFS, FSF) have them, why can't you?

7) Why not a good book reviewer (Damon Knight, or P. Schuyler Miller) and have some meaty reviews waiting for your readers every other month?

8) Why not use one issue a year to publish a full-length novel, complete in one issue?

9) Better still, why not go monthly; and if you're a little leery of taking the plunge all at once, you can do as *Infinity* did, and go to a 10-month-a-year schedule, then if the circulation returns you can switch to monthly with no trouble at all?

I'm interested in forming a fan club in Wayne County, so please print my street address when you publish this, and would all interested persons get in touch with me—

—Roger Blackmar
Allen Park, Mich.

One of us has been reading the other's mind. Freas is here; the Science Quiz is gone; and I'm the new book reviewer. To answer your other points: (1) IF *is published on a press which turns out a "signature" of twenty pages instead of the more usual sixteen. Some day we may be able to add twenty pages to the magazine, and we're enthusiastic about the new things we'll be able to bring you then. In the meantime, however, our compact, readable type-face allows us to print* more *words of fiction in every issue than nearly any other s-f magazine. This issue has 54,000 words of stories, compared to as little as 41,000 in some other magazines. (2) We regret the occasional runovers; but would you rather have us cut two paragraphs from a good story? (3) We'd like to hear some more reactions to your suggestion about the s-f news column. (4) The editorials will appear as part of* In the Balance. *(5) I'd hate to change* IF's *identity as a magazine by turning a whole issue over to a novel. Our hope is to enlarge the magazine so as to be able to give you a book-length novel* and *short stories, novelettes and departments. (6) Monthly publication is one of our aims, too . . . how soon it happens is partly up to you.*

I have finally found a story I thought good enough to write in about. I am referring to Gunn's *Powder Keg.* I buy s-f for stories like this, and usually don't find them. The other stories were good, but I can't say too much for *Powder Keg.*

You mentioned Interlingua in your report. I'm interested, and would like to find out more about it. I know enough to get confused!

I'd like to thank you for one of the best s-f mags on the market.

—Marti Larson
Roundup, Mont.

Information about Interlingua can be had from Alexander Gode, Science Service, Interlingua Division, 80 E. 11th St., New York 3, N. Y.

After reading Arthur C. Clarke's, "The Songs of Distant Earth"—and what such a beautiful title, too—I am frankly surprised. This was undoubtedly one of the best that IF has ever presented and I dare say that it will be that way for a real long time to come in the far future of science fiction. It brought back to me the memories of the Good Old Days and a person's personal freedom on this earth then. It seems like I can still hear the echoes of the

Songs of Earth and everything else, and I believe that they will be a long time in waning.

I guess this here is mostly a praise to Mr. Clarke, one of my favorite authors. I have read some fine works from him in the past. Need I say that *Against The Fall of Night* is his best? I guess every author loves plugs about himself now and then—I have gotten some letters from such brilliant nice people like Charles V. De Vet, telling me that those plugs always do help.

—James W. Ayers
Attalla, Ala.

I'm afraid that Mr. William M. Noe II, in his letter in the August 1958 issue, took my story *The Feeling of Power,* too literally.

When my characters spoke about breaking through on the "square root front", they did not mean that they were solving square roots for the first time. They meant they were learning how to solve them *without computers.*

And certainly a manned missile is not practical as a counter to a computer-controlled missile. In the story, however, please note that the characters were *unaware* of the limitations of the human mind as compared to the computer.

As a matter of fact, the story was intended to be a social satire, rather than a straight to-be-taken-literally story. As to exactly what I was satirizing, I'm not sure. I'll leave it to the readers tc interpret that as they please—only, please, not literally.

—Isaac Asimov
West Newton. Mass.

In the August IF, a Miss Betty Herman went about presenting a challenge that I have been meaning to take up for quite a while; yet in her letter, she described just the *opposite* of the idea which I have formed. Miss Herman asked the often repeated question, *Is science fiction about science or about the world of tomorrow?* Such stories such as *Messiah, Fahrenheit 451, 1984, Not This August,* and *Hero's Walk* concern future society on Earth, and these seem to be the type which was being attacked by Miss Herman.

Now stop! Miss Herman writes that science fiction should be gadgets and medicine—sociology and economics—space travel and teleportation—but why, if these are to be considered science, not consider a story about future society science—why not consider a good social satire science fiction? Is the science which Miss Herman speaks of just the science which can be translated by an SF author into gizmos and rockets? What is to be considered science and what not? What is to be considered *science fiction* and what not?

According to a rather philosophical definition I have heard, "Science is truth found out". Therefore, *stories* about the future could be "Truth yet to be found out" whether it be on any subject. On the other hand, stories labeled *science fiction* about the future would have to be "Truth not yet found out" or maybe "Truth not to be found out" or . . .

—Christopher Corson
Tahoe Valley, Calif.

Yes, but when a science fiction writer uses 1958 attitudes, anxieties, &c. in a story about 2050, that isn't "truth not yet found out," is it? Miss Herman's complaint was against slipshod and phony future societies. I think. "When is a science fiction story a bore? When a present-day dilemma (war, depression, bad television, book-burning) is propelled into the defenseless future, and then solved in a manner suitable to the author." I think she's right.

In regard to Miss Bartleson's voicing of her distaste for old words changed into new ones: Why should magazine not be modified to mag? And what is wrong with fanzine? Would you have it called fan magazine as it once was, or fanmag? And do you know what a fanzine is that you loathe the word? Language at best is only a relative thing. The "accepted" language changes as popular usage changes. Why then should not mag and fanzine be used, when everyone knows or can easily guess what they mean? After all, fanzine is only a condensation of *fan* mag*azine*. Of course, anything can go to extremes, as with 4e Ackerman's abbreviated English. But even that noble mess is understandable with very little effort, and it yields many opportunities for punning.

By the way, while I am here, I must say that IF has the neatest repro (aha, those "new" words) of any mag on the stands, rivaled by *Satellite*. Its paper *is* superior, and its covers and interior illos (I forget myself, Miss Bartleson) are tops. I won't rave on about the material, in fear I'll sound like someone from an *Amazing* lettercol, but I truly enjoyed Clarke thish (this issue, Miss Bartleson); Fontenay, Castle, and Thompson were a bit elementary, but Castle did have a message. But what about juvenile misfits?

I find the amoeba has solved one of the most fundamental math problems, that of multiplying by dividing.

—John Koning
Youngstown, Ohio

And there's Frank Riley's delightful satire on condensation called "Abbr.".