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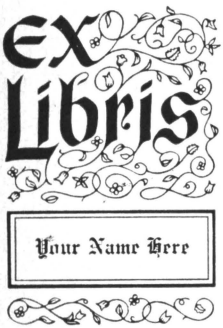

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WORLDS OF IF SCIENCE FICTION

ALL NEW STORIES

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TO SOLVE THE FUTURE

As we all know, science fiction is fun to read, and stimulating besides. In addition to those two attributes there is one more that has led a great many people to read it, and that is science fiction's reputation over the years for predicting the future of technological innovation. It is astonishing to realize just how many sober-minded R & D directors from time to time take down their back numbers of sf magazines and thumb through them, hoping for some clue on just what they'll be doing next . . . or what they should be doing now.

On the record, science fiction has a lot to offer them. In 1934, Albert Einstein doubted that atomic power would ever be economically practical — but sf writers, of course, had had no doubts about it for years before that. In 1945, Vannevar Bush disputed the probability of intercontinental ballistic missiles — though they had long been old hat in sf. Radar, television, space satellites — the list of predictions from science-fiction stories is familiar to all of us by now, and on the whole it is a more successful list of predictions than can be offered by most of the hard-nosed studies into probability conducted by experts. (Consider even such relatively simple predictions as population growth and water need: these studies have been made regularly and endlessly for decades, and the people who made them have always erred in the direction of timidity. Witness how many of our big cities have been running dry in recent years!)

What makes it possible for science-fiction writers to guess more accurately than experts so much of the time?

Two things, we think. First — as a young lady from Italy told us once — "we are not afraid to be wrong". Second, because science-fiction writers are usually *not* experts in the particular field of any one specific prediction, they are able to see past the particular hang-up that every expert knows so well — but that some other expert, in some other field, will find an end-run around. Only an expert could have calculated so precisely in 1900 that aircraft could not fly. Only a nonexpert could see that the limitations in engine weight and strength of structural members would be overcome by lighter engines and stronger metals.

However, "science" is not a collection of statements of "fact". It is a way of organizing knowledge. Even the disorderly knowledge that lurks inside a science-fiction writer's brain can be organized.

Suppose we take that kind of knowledge — a sketchy notion of nuclear physics, some stellar ballis-

tics, a lot of rule-of-thumb sociology, bits and smatterings of a thousand disciplines. Suppose we apply to it not the dramatic craft of the writer, but the problem-solving techniques of the scientist. Can we then come out with predictions about the future which share the good features of both approaches and the faults of neither?

Two West Coast scientists connected with the RAND Corporation are trying. And it looks as though they are succeeding, at least in part.

Their names are Theodore J. Gordon and Olaf Helmer. Gordon, a RAND consultant, spends most of his time supervising the Douglas Aircraft Saturn project. Dr. Helmer is a RAND Senior Mathematician. Their thesis is that although "the" future cannot infallibly be predicted, all futures are *invented* — in the sense that what will happen tomorrow will come from what is happening today.

Since "what is happening today" does not lend itself readily to quantification, or even to observation — so much of it is going on in someone's head — their approach to the basic data is informal. They selected a panel of knowledgeable people, most of them scientists (a couple of them also science-fiction writers, like Arthur C. Clarke and Isaac Asimov). They asked them their opinions on whether certain "breakthroughs" could be accomplished, and if so, when. They collated the results and returned the information to the panel to get a second approximation; collated that, and repeated the process.

The panel was encouraged to comment and criticize at every stage, and the feedback from the panel was used to sharpen the questions and even to eliminate some of them. In the sharpening process some useful thinking was done. For example, one question was first asked in the form of a prediction of a date for "computing machines becoming the most significant intelligence on earth." In the second stage it was changed to "availability of a machine which comprehends standard IQ tests and scores above 150;" and by the last round a qualification was added to that: ". . . where 'comprehend' is to be interpreted behavioristically as the ability to respond to questions printed in English and possibly accompanied by diagrams."

(The predicted median date for this machine, by the way, was 1990!)

Some of the other predicted median dates were:

1972 = Automated language translators.

1980 = Operation of a central data storage facility with wide access for general or specialized information retrieval.

1985 = Manned landing on Mars and return.

2025 = International agreements which guarantee certain economic minima to the world's population as a result of high production from automation.

In all some twenty-odd questions or more were asked in each of six areas. In some cases the basic question as to a forecast of probable dates (defined as an estimate of a date on which the given event will have a 50% probability of becoming fact) could not apply to the sort of information desired. For example,

the panels were questioned as to their opinions of the likelihood of all-out war, and as to how they thought such a war might break out. 11% replied through inadvertence; 45% through escalation of a political crisis; 37% through escalation of the level of violence in an on-going minor war; and only 7% thought it might occur through surprise attack when there is no ostensible acute crisis. (But the panel does not, in fact, think there will be any all-out war in the next twenty-five years, at least. And they are becoming more sure rather than less. In one questionnaire, the median expectancy of such a war was 22½%; six months later, it had dropped to 20%.)

Of course, what is really of major interest in this study (published by the Rand Corporation, by the way, as *Report on a Long-Range Forecasting Study*) is not so much any specific prediction as the method employed. Is it really better than either the straight-line extrapolation of the ordinary governmental statistical agency or the free-wheeling guesses of science-fiction writers?

We won't know for sure until the future is upon us, of course. But there are some indications to be sought for — and found.

For example, some of the questions asked of the panel were self-checking. Estimates were asked as to population levels at future dates, and also as to rates of growth. Clearly one can be converted into the other; and when curves were drawn according to each of the two procedures and superimposed, they were found to be identical.

Again, if the cascade process really resulted in more accurate estimates it should show not only a more exact date but a reduced scatter of guesses that are higher and lower than the medium — and in fact, it did.

Of course, both these things could result either from a more accurate guess or from a more unified agreement to make a wrong guess. Is there any way to decide which?

One way to try to find out would be to apply the same procedure to asking questions which have known answers — known, that is, to the asker, but presumably not to the panel. You might, for example, say that the median name in the telephone book listings for one city is "Lawrence", and ask how many pages before or after the median that name would be found in the listings for another given city. Or you might ask about a fact which is clearly checkable, but which most people do not carry around in their memories — for example, the lumber production of the state of Oregon for the year 1962, in board feet.

So that was done, following the same procedures.

And the result?

The median was not always right — sometimes it was far off, in some cases it was bang on. But *the median was more accurate than the guesses of any individual panelist.*

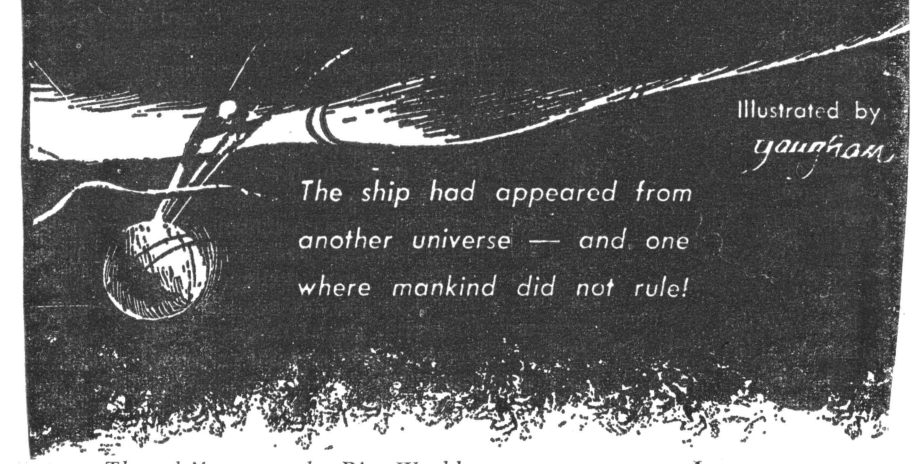
Sound like they've got something here?

We think so. And we think you'll be hearing more about this "Delphi" method of long-range forecasting!

The Editor

Edge of Night

by A. BERTRAM CHANDLER



Illustrated by Vaughan

The ship had appeared from another universe — and one where mankind did not rule!

They drift out to the Rim Worlds —the misfits, the failures and the rebels. They make their tortuous ways out to the very edge of the Galaxy—the malcontents, the round pegs who, even here, are foredoomed to the discovery of an infinitude of square holes. And from all Space they come—the displaced persons.

From all Space— and (for the skin of the expanding Galaxy is stretched, in every dimension, to the utmost flimsiness) from all Space-Time.

I

The inevitable freezing wind whistled thinly over Port Forlorn, bearing eddies of gritty dust and flurries of dirty snow, setting discarded sheets of newspaper cavorting over the fire-scarred concrete of the landing field like midget ballet dancers in soiled costumes. From his office, on the top floor of the Port Administration Building, Commodore Grimes stared out at what, over the long years, he had come to regard as his own little

kingdom. To a casual observer, his seamed, deeply tanned face would have appeared expressionless—but those who knew him well could have read a certain regret in the lines of his craggy features, in the almost imperceptible softening of the hard, slate-gray eyes.

The king had abdicated.

The Astronautical Superintendent of Rim Runners had resigned from the service of the Rim Worlds Confederacy—both as a senior executive of the government owned and operated shipping line and as Commodore of the Rim Worlds Naval Reserve. His resignations were not yet effective—but they would be, as soon as Captain Trantor, in *Rim Kestrel,* came dropping down through the overcast, to be relieved of his minor command prior to assuming the greater one.

On a day such as this there was little for Grimes to see. Save for *Faraway Quest,* the Rim Worlds Government Survey Ship, and for *Rim Mamelute* the spaceport was deserted. Soon enough it would resume its normal activity, with units of the Rim Runners' fleet roaring in through the cloud blanket, from Faraway, Ultimo and Thule, from the planets of the Eastern Circuit, from the anti-matter systems of the Galactic West. (And among them would be Trantor's ship, inbound from Mellise.) But now there were only the old *Quest* and the little, battered spacetug in port, silent and deserted, the survey ship a squat, gray tower (that looked as though it should have been lichen-coated), half obscured by the snow squall, the *Mamelute* huddling at its base as though seeking shelter in the lee of the larger vessel.

Grimes sighed, only half aware that he had done so.

He was not a sentimental man. It was just that *Faraway Quest* had been his last spacegoing command and would be his last command, ever, out on the Rim. In her he had charted the worlds of the Eastern Circuit and opened them up to trade. In her he had made the first contact with the people of the anti-matter systems. In her, only short weeks ago, with a mixed crew of Rim Worlds Naval Reserve officers and Federation Survey Service personnel, he had tried to solve the mystery of those weird and sometimes frightening phenomena known as Rim Ghosts. And whilst on this wild Ghost Chase (as his second in command referred to it) he had found in Sonya Verrill the cure for his loneliness—as she had found, in him, the cure for hers.

He started as the little black box on his desk buzzed. He heard a sharp female voice announce, "Commander Verrill to see you, Commodore Grimes."

Another voice, also female, pleasantly contralto but with an underlying snap of authority, corrected the first speaker. *"Mrs. Grimes* to see the Commodore, Miss Willoughby."

"Come in, Sonya," said Grimes, addressing the instrument.

She strode into the office, dramatic as always. Melting snow crystals sparkled like diamonds on

her swirling, high-collared cloak of dull crimson Altairian crystal silk, in the intricate coronet of her pale blonde hair. Her face was flushed, as much by excitement as by the warmth of the building after the bitter cold outside. She was a tall woman and a splendid one, and many men on many worlds had called her beautiful.

She reached out, grabbed Grimes by his slightly protuberant ears, pulled his face to hers and kissed him soundly.

After she had released him, he asked mildly, "And what was that in aid of, my dear?"

She laughed happily. "John, I just had to come to tell you the news in person. It wouldn't have been the same over the telephone. I've just received two Carlottigrams from Earth—one official, one personal. To begin with, my resignation's effective, as from today. Oh, I can still be called back in an emergency, but that shouldn't worry us. And my gratuity has been approved."

"How much?" he asked, not altogether seriously.

She told him.

He whistled softly. "The Federation's more generous than the Confederacy. But, of course, your taxpayers are richer than ours, and there are so many more of them—"

She ignored this. "And that's not all, my dear. Admiral Salversen, of the Bureau of Supply, is an old friend of mine. He sent a personal message along with the other. It seems that there's a little one-ship company for sale, just a feeder line running between Montalbon and Carribea. The gratuity barely covers the down payment—but with *your* gratuity, and our savings, and the profits we're bound to make we shall be out of the red in no time at all. Just think of it, John! You as Owner-Master, and myself as your everloving Mate!"

Grimes thought of it as he turned to stare again out of the wide window, his mind's eye piercing the dismal overcast to the nothingness beyond. Light, and warmth, and a sky ablaze with stars instead of this bleak desolation . . . .

Light, and warmth . . . .

And a milk run.

And Sonya.

He said slowly, "We may find it hard to settle down. Even you. You're not a Rimworlder, but your life, in the Federation's Naval Intelligence, has been adventurous, and you've worked out on the Rim so much that you almost qualify for citizenship."

"I qualified for citizenship when I married you. And I want to settle down, John. But not here."

The black box on the desk crackled, then said in Miss Willoughby's voice, "Port Control is calling, Commodore Grimes. Shall I put them through?"

"Yes, please," Grimes told her.

II

"Cassidy here," said the box.

"Yes, Captain Cassidy?"

"Orbital Station 3 reports a ship, sir."

"Isn't that one of the things they're paid for?" asked Grimes.

"Yes, sir." Cassidy's voice was sulky. "But there's nothing due for almost a week, and—"

"Probably one of the Federation Survey Service wagons," Grimes told him, flashing a brief smile (which she answered with a glare) at Sonya. "They think they can come and go as they damn well please. Tell Station 3 to demand—*demand* not request—identification."

"The Station Commander has already done that, Commodore. But there's no reply."

"And Station 3 doesn't run to a Psionic Radio Officer." He paused, then asked, "Landing approach?"

"No, sir. Station 3 hasn't had time to extrapolate her trajectory yet, but the way she's heading now it looks as though she'll miss Lorn by all of a thousand miles and finish up in the sun."

"They haven't had time?" Grimes's voice was cold. "What the hell sort of watch are they keeping?"

"A good one, sir. Commander Hall is one of our best men—as you know. It seems that this ship just appeared out of nothing—those were Hall's own words. There was no warning at all on the Mass Proximity Indicator. And then, suddenly, there she was on both M.P.I. *and* radar."

"Any of your people loafing around these parts?" Grimes asked Sonya.

"No," she told him. "At least, not that I know of."

"H'm." He turned again to the box. "Captain Cassidy, tell Station 3 that I wish direct communications with them."

"Very good, sir."

The Commodore strode to his desk, sat down in his chair, pulled out a drawer. His stubby fingers played over the console that was revealed. Suddenly the window went opaque, and as it did so the lights in his office dimmed to a faint glow. One wall of the room came alive, a swirl of light and color that coalesced to form a picture, three dimensional, of the Watch House of Station 3. There were the wide ports, beyond the thick transparencies of which was the utter blackness of Space as seen from the Rim Worlds, a blackness made even more intense by contrast with the faintly glimmering nebulosities, sparse and dim, that were the distant, unreachable island universes. Within the compartment were the blanked instruments, the flickering screens, the warped, convoluted columns, each turning slowly on its axis, that were the hunting antennae of the Carlotti Beacon. Uniformed men and women busied themselves at control panels, stood tensely around the big plotting tank.

One of them—the Station Commander—turned to face the camera. He asked, "Have you the picture, Commodore, Grimes, sir?"

"I have, Commander," Grimes told him. "How is the extrapolation of trajectory?"

"You may have a close-up of the tank, sir."

The scene dissolved, and then only the plotting tank was in

Grimes's screen. In the center of it was the dull-glowing (but not dull in reality) globe that represented the Lorn sun. And there was the curving filament of light that represented the orbit of the strange ship, the filament that extended itself as Grimes and Sonya watched, that finally touched the ruddy incandescence of the central sphere. This was only an extrapolation; it would be months before it actually occurred. There was still time, ample time, for the crew of the intruder to pull her out of the fatal plunge. And yet, somehow, there was a sense of urgency. If a rescue operation were to be undertaken, it must be done without delay. A stern chase is a long chase.

"What do you make of it?" Grimes asked Sonya.

She said, "I don't like it. Either they can't communicate, or they won't communicate. And I think they can't. There's something wrong with that ship."

"Something very wrong. Get hold of Cassidy, will you? Tell him that I want *Rim Mamelute* ready for Space as soon as possible." He stared at the screen, upon which Commander Hall had made a reappearance. "We're sending the *Mamelute* out after her, Hall. Meanwhile, keep on trying to communicate."

"We are trying, sir."

Cassidy's voice came from the black box, "Sir, Captain Welling, the skipper of the *Mamelute,* is in hospital. Shall I—?"

"No, Cassidy. Somebody has to mind the shop—and you're elected. But there's something you can do for me. Get hold of Mr. Mayhew, the Psionic Radio Officer. Yes, yes, I know that he's taking his Long Service Leave, but get hold of him. Tell him I want him here, complete with his amplifier, as soon as possible, if not before. And get *Mamelute* cleared away."

"But who's taking her out, sir?"

"Who do you think? Get cracking, Cassidy."

"You'll need a Mate," said Sonya.

He found time to tease her, saying "Rather a comedown from the Federation Survey Service, my dear."

"Could be. But I have a feeling that this may be a job for an intelligence Officer."

"You'll sign on as Mate," he told her firmly.

III

Rim Mamelute as a salvage tug was already in a state of near-readiness. She was fully fueled and provisioned; all that remained to be done was the mustering of her personnel. Her engineers, pottering around in Rim Runners' workshop on the spaceport premises, were easily located. The Port Doctor was conscripted from his office and was pleased enough to be pulled away from his boring paperwork. The Port Signal Station supplied a Radio Officer and—for *Rim Mamelute's* permanent Mate made it plain that he would resent being left out of the party—Sonya agreed to come along as Catering Officer.

Grimes could have got the little

brute upstairs within an hour of his setting the wheels in motion, but he insisted on waiting for Mayhew. In any salvage job communication between the salvor and the salved is essential — and to judge by the experience of Station 3 any form of electronic radio communication was *out*. He stood on the concrete, just outside the tug's airlock, looking up at the overcast sky. Sonya came out to join him.

"Damn the man!" he grumbled. "He's supposed to be on his way. He was told it was urgent."

She said, "I hear something."

He heard it too, above the thin whine of the wind, a deepening drone. Then the helicopter came into sight above the high roof of the Administration Building, the jet flames at the tip of its rotor blades a bright, blue circle against the gray sky. It dropped slowly, carefully, making at last a landing remarkable for its gentleness. The cabin door opened, and the tall, gangling telepath, his thin face pasty against the upturned collar of his dark coat, clambered to the ground. He saw Grimes, made a slovenly salute, then turned to receive the large case that was handed him by the pilot.

"Take your time," growled Grimes.

Mayhew shuffled around to face the Commodore. He set the case carefully down on the ground, patted it gently. He said, mild reproof in his voice, "Lassie's not as used to travelling as she was. I try to avoid shaking her up."

Grimes sighed. He had almost forgotten about the peculiar relationship that existed between the space-faring telepaths and their amplifiers —the living brains of dogs suspended in their tanks of nutrient solution. It was far more intense than that existing between normal man and normal dog. When a naturally telepathic animal is deprived of its body, its psionic powers are vastly enhanced, and it will recognize as friend and master only a telepathic man. There is symbiosis, on a psionic level.

"Lassie's not at all well," complained Mayhew.

"Think her up a nice juicy bone," Grimes almost said, then thought better of it.

"I've tried that, of course," Mayhew told him. "But she's not . . . she's just not interested any more. She's growing old. And since the Carlotti system was introduced nobody is making psionic amplifiers any more."

"Is she functioning?" asked the Commodore coldly.

"Yes, sir. But—"

"Then get aboard, Mr. Mayhew. Mrs. Grimes will show you to your quarters. Prepare and secure for blastoff without delay."

He stamped up the short ramp into the airlock, climbed the ladders to the little control room. The Mate was already in the co-pilot's chair, his ungainly posture a match for his slovenly uniform. Grimes looked at him with some distaste, but he knew that the burly young man was more than merely competent. Although his manner and appearance militated against his

employment in a big ship he was ideally suited to service in a salvage tug.

"Ready as soon as you are, Skipper," the Mate said. "You takin' her up?"

"You're more used to this vessel than I am, Mr. Williams. As soon as all's secure you may blastoff."

"Good-oh, Skip."

Grimes watched the indicator lights, listened to the verbal reports, aware that Williams was doing likewise. Then he said into the transceiver microphone, *"Rim Mamelute* to Port Control. Blasting off."

Before Port Control could acknowledge, Williams hit the firing key. Not for the *Mamelute* the relatively leisurely ascent, the relatively gentle acceleration of the big ships. It was, thought Grimes dazedly, like being fired from a gun. Almost at once, it seemed, harsh sunlight burst through the control room ports. He tried to move his fingers against the crushing weight, tried to bring one of them to the button set in the arm rest of his chair that controlled the polarization of the transparencies. The glare was beating full in his face, painful even through his closed eyelids. But Williams beat him to it. When Grimes opened his eyes, he saw that the Mate was grinning at him.

"She's a tough little bitch, the old *Mamelute,"* announced the objectionable young man with pride.

"Yes, Mr. Williams," enunciated Grimes with difficulty. "But there are some of us who aren't as tough as the ship. And, talking of lady dogs, I don't think that Mr. Mayhew's amplifier can stand much acceleration."

"That pickled poodle's brain, Skip? The animal's better off than we are, floatin' in its nice, warm bath o' thick soup." He grinned again. "But I was forgettin'. We haven't the regular crew this time. What say we maintain a nice, steady one and a half G's? That do yer?"

One G would be better, thought Grimes. *After all, those young people, whoever they are, are in no immediate danger of falling into the sun . . . . But perhaps even a few minutes' delay might make all the difference between life and death to them. Even so, we must be capable of doing work, heavy, physical work, when we catch them.*

"Yes, Mr. Williams," he said slowly. "Maintain one and a half gravities. You've fed the elements of the trajectory into the computer, of course?"

"Of course, Skip. Soon as I have her round I'll put her on auto. She'll be right."

When the tug had settled down on her long chase, Grimes left Williams in the control room and went down into the body of the ship. He made his rounds, satisfied himself that all was well in the engine room, surgery, the two communications offices and, finally, the galley. Sonya was standing up to acceleration as though she had been born and bred on a high gravity planet. He looked at her with envy as she poured him a cup of coffee, handing it to him without any obvious compensation for its increased

weight. Then she snapped at him, "Sit down, John. If you're as tired as you look you'd better lie down."

He said, "I'm all right."

"You're not," she told him. "And there's no need for you to put on the big, tough space-captain act in front of me."

"If you can stand it—"

"What if I can, my dear? I haven't led such a sheltered life as you have. I've knocked around in little ships more than I have in big ones, and I'm far more used to going places in a hurry than you."

He lowered himself to a bench, and she sat beside him. He sipped his coffee, then asked her, "Do you think, then, that we should be in more of a hurry?"

"Frankly, no. Salvage work is heavy work, and if we maintain more than one and a half G's over a quite long period we shall all of us be too tired to function properly, even that tough Mate of yours." She smiled. "I mean the Mate who's on Articles as such, not the one you're married to."

He chuckled. "But she's tough, too."

"Only when I have to be, my dear."

Grimes looked at her and thought of the old proverb which says that there is many a true word spoken in jest.

IV

The strange vessel was a slowly expanding speck of light in the globular screen of the Mass Proximity Indicator; it was a gradually brightening blip on *Mamelute's* radar display that seemed as though it were being drawn in toward the tug by the ever decreasing spiral of the range marker.

Clearly it showed up on the instruments, although it was still too far distant for visual sighting. It was obvious that the extrapolation of trajectory made by Station 3 was an accurate one. It was falling free, neither accelerating nor decelerating, its course determined only by the gravitational forces within the Lorn Star's planetary system. Left to itself it must inevitably fall into the sun. But long before its shell plating began to heat it would be overhauled by the salvage ship and dragged away from its suicide orbit.

And it was silent. It made no reply to the signals beamed at it from *Rim Mamelute's* powerful transmitter. Bennett, the Radio Officer, complained to Grimes, "I've tried every frequency known to civilized man and a few that aren't. But, so far, no joy."

"Keep on trying," Grimes told him, then went to the cabin that Mayhew, the telepath, shared with his organic amplifier.

The Psionic Radio Officer was slumped in his chair, staring vacantly at the glass tank in which, immersed in its cloudy nutrient fluid, floated the obscenely naked brain. The Commodore tried to ignore the thing. It made him uneasy. Every time that he saw one of the amplifiers he could not help wondering what it would be like to be disembodied, deprived of all external stimuli but the stray thoughts of

other, more fortunate (or less unfortunate) beings—and those thoughts, as like as not, on an incomprehensible level. What would a man do were he so used, his brain removed from his skull and employed by some race of superior beings for their own fantastic purposes? Go mad, probably. And did the dogs sacrificed so that Man could communicate with his fellows over the light-years ever go mad?

"Mr. Mayhew," he said.

"Sir?" muttered the telepath.

"As far as electronic radio is concerned that ship is dead."

"Dead," repeated Mayhew in a thin whisper.

"Then *you* think that there's nobody alive on board her?"

"I . . . I don't know. I told you before we started that Lassie's not a well dog. She's old, Commodore. She dreams almost all of the time. She . . . she just ignores me." His voice was louder as he defended his weird pet against the imputation that he had made himself. "It's just that she's old, and her mind is getting very dim. Just vague dreams and ghostly memories, and the past more real than the present, even so."

"What sort of dreams?" asked Grimes, stirred to pity for that naked canine brain in its glass cannister.

"Hunting dreams, mainly. She was a terrier, you know, before she was . . . conscripted. Hunting dreams. Chasing small animals, like rats. They're good dreams, except when they turn to nightmares. And then I have to wake her up—but she's in such a state of terror that she's no good for anything."

"I didn't think that dogs have nightmares," remarked Grimes.

"Oh, but they do, sir, they do. Poor Lassie always has the same one—about an enormous rat that's just about to kill her. It must be some old memory of her puppy days, when she ran up against such an animal, a big one, bigger than she was . . ."

"H'm. And meanwhile, nothing from the ship."

"Nothing at all, sir."

"Have you tried transmitting, as well as just maintaining a listening watch?"

"Of course, sir." Mayhew's voice was pained. "During Lassie's lucid moments I've been punching out a strong signal, strong enough even to be picked up by nontelepaths. You must have felt it yourself, sir. *Help is on the way.* But there's been no indication of mental acknowledgment."

"All we know about the ship, Mayhew, is that she seems to be a derelict. We don't know who built her. We don't know who mans her—or manned her."

"Anybody who builds a ship, sir, must be able to think."

Grimes, remembering some of the unhandier vessels in which he had served in his youth, said, "Not necessarily."

Mayhew, not getting the point insisted, "But they must be able to think. And, in order to think, you must have a brain to think with. And any brain at all emits psionic radiation. Furthermore, sir, such

radiation sets up secondary radiation in the inanimate surroundings of the brain. What is the average haunt but a psionic record on the walls of a house in which strong emotions have been let loose? A record that is played back given the right conditions."

"H'm. But you say that the derelict is psionically dead, that there's not even a record left by her builders, or her crew, to be played back to you."

"The range is still extreme, sir. And as for this secondary psionic radiation, sir, sometimes it fades rapidly, sometimes it lingers for years."

"So there could be something."

"There could be, sir. And there could not."

"Just go on trying, Mr. Mayhew."

"Of course, sir. But with poor Lassie in her present state I can't promise anything."

Grimes went along to the galley. He seated himself on the bench, accepted the cup of coffee that Sonya poured for him. He said, "It looks, my dear, as though we shall soon be needing an Intelligence Officer as well as a Catering Officer."

"Why?" she asked.

He told her of his conversation with Mayhew. He said, "I'd hoped that he'd be able to find us a few short cuts, but his crystal ball doesn't seem to be functioning very well these days. If you could call that poodle's brain in aspic a crystal ball."

"He's told me all about it," she said. "He's told everybody in the ship all about it. But once we get the derelict in tow and opened up, we shall soon be able to find out what makes her tick."

"I'm not so sure, Sonya. The way in which she suddenly appeared from nowhere, not even a trace on Station 3's M.P.I. beforehand, makes me think that she could be very, *very* alien."

"The Survey Service is used to dealing with aliens," she told him. "The Intelligence Branch especially so."

"I know, I know."

"And now, as I'm still only the humble galley slave, can I presume to ask my lord and master the E.T.C.?"

"Unless something untoward fouls things up, E.T.C. should be in almost exactly five Lorn Standard Days from now."

"And then it will be *Boarders Away!*" she said, obviously relishing the prospect.

"Boarders Away!" he agreed. "And I, for one, shall be glad to get out of this space-borne sardine can."

"Frankly," she said, "I shall be even gladder to get out of this bloody galley so that I can do the real work for which I was trained."

V

Slowly the range closed, until the derelict was visible as a tiny, bright star a few degrees to one side of the Lorn Sun. The range closed, and *Rim Mamelute's* powerful telescope was brought into play.

It showed very little. The strange

ship appeared to be an almost featureless spindle, the surface of its hull unbroken by vanes, sponsons or antennae. And still, now that the distance could be measured in scant tens of miles, the alien construction was silent, making no reply to the signals directed at it by both the salvage tug's communications officers.

Grimes sat in the little control room, letting Williams handle the ship. The Mate crouched in his chair, intent upon his telltale instruments, nudging the tug closer and closer to the free-falling ship with carefully timed rocket blasts, matching velocities with the skill that comes only from long practice. He looked up briefly from his console to speak to Grimes. "She's bloody hot, Skipper."

"We've radiation armor," said Grimes. The words were question rather than statement.

"O' course. The *Mamelute's* ready for anything. Remember the *Rim Eland* disaster? Her pile went critical. We brought her in. I boarded her when we took her in tow, just in case there was anybody still living. There wasn't. It was like bein' inside a radioactive electric fryin' pan."

A charming simile, thought Grimes.

He used the big, mounted binoculars to study the derelict. They showed him little more than the telescope at longer range. So she was radioactive. It seemed that the atomic blast that had initiated the radiation had come from outside, not inside. There were, after all, protuberances upon that hull, but they had been melted and rehardened, like guttering candle wax. There were the remains of what must have been vaned landing gear. There was the stump of what could have been, once, a mast of some kind, similar to the retractable masts of the spaceships with which Grimes was familiar, the supports for Deep radio antennae and radar scanners.

"Mr. Williams," he ordered, "we'll make our approach from the other side of the derelict."

"You're the boss, Skipper."

Brief accelerations crushed Grimes down into the padding of his chair; centrifugal force, as *Mamelute's* powerful gyroscopes turned her about her short axis, made him giddy. Almost he regretted having embarked upon this chase in person. He was not used to small ships, to the violence of their motions. He heard, from somewhere below, a crash of kitchenware. He hoped that Sonya had not been hurt.

She had not been—not physically, at any rate. Somehow, even though the tug was falling free once more, she contrived to stamp into the control room. She was pale with temper, and the smear of some rich, brown sauce on her right cheek accentuated her pallor. She glared at her husband and demanded, "What the hell's going on? Can't you give us some warning before indulging in a bout of astrobatics?"

Williams chuckled to himself and made some remark about the unwisdom of amateurs shipping out in spacetugs. She turned on him then and said that she had served in tugs

owned by Federation Survey Service and that they had been, like all Federation starships, taut ships, and that any officer who failed to warn all departments of impending maneuvers would soon find himself busted down to Spaceman, Third Class.

Before the Mate could make an angry reply Grimes intervened. He said smoothly, "It was my fault, Sonya. But I was so interested in the derelict that I forgot to renew the alarm. After all, it was sounded as we began our approach."

"I know that. But I was prepared for an approach, not his tumbling all over the sky like a drunken bat."

"Once again, I'm sorry. But now you're here, grab yourself the spare chair and sit down. This is the situation. All the evidence indicates that there's been some sort of atomic explosion. That ship is *hot*. But I think that the blast was from outside, not inside. I think that the other side of the hull will be relatively undamaged—"

"It is," grunted Williams.

The three of them stared out of the viewports. The shell plating, seen from this angle, was dull, not bright, pitted with the tiny pores that were evidence of frequent passages through swarms of micrometeorites. At the stern, one wide vane stood out sharp and clear in the glare of *Mamelute's* searchlights. Forward, the armor screens over the control room ports were obviously capable of being retracted, were not fused to the hull. There were sponsons from which projected the muzzles of weapons—they could have been cannon or laser projectors, but what little was visible was utterly unfamiliar. There was a telescope mast, atop which was a huge, fragile-seeming radar scanner, motionless.

And just abaft the sharp stem was the name.

No, thought Grimes, studying the derelict through the binoculars, *two* names.

It was the huge, sprawling letters, crude daubs of black paint, that he read first. FREEDOM, they spelled. Then there were the other symbols, gold-embossed, half obscured by the dark pigment.

There was something wrong about them, a subtle disproportion, an oddness of spacing. But they made sense—after a while. They did not belong to the alphabet with which Grimes was familiar, but they must have been derived from it. There was the triangular "D", the "I" that was a fat, upright oblong, the serpentine "S". *"Distroyir . . ."* muttered Grimes. *"Destroyer?"* He passed the glasses, on their universal mount, to Sonya. "What do you make of this? What branch of the human race prints like that? What people have simplified their alphabet by getting rid of the letter 'E'?"

She adjusted the focus to suit her own vision. She said at last, "That painted-on name is the work of human hands all right. But the other . . . I don't know. I've never seen anything like it before. There's a certain lack of logicality—human logicality, that is. Oh, that stylized 'D' is logical enough. But the sub-

stitution of 'I' for 'E'—if it *is* a substitution . . . . And then, as far as *we* are concerned, a destroyer is a class of ship, not a ship's name."

"I seem to recall," Grimes told her, "that there was once a warship called *Dreadnought*—and the dreadnoughts have been a class of warship ever since the first ironclads were launched on Earth's seas."

"All right, Mr. amateur naval historian—but have you ever, in the course of your very wide reading on your favorite subject, come across mention of a ship called *Destroyer*—and spelled without a single 'E'? There are nonhumans mixed up in this somewhere. Highly intelligent nonhumans at that."

"And humans," said Grimes.

"But we'll never find out anything just by talking about it," grumbled the Mate. "An' the sooner we take this bitch in tow, the shorter the long drag back to Port Forlorn. I'm make fast alongside—but even here, in the blast shadow, that hull is too damn hot. It'll have to be tow wires from the outriggers—an' keep our fingers crossed that they don't get cut by our exhaust."

"Take her in tow, then board," said Sonya.

"O' course. First things first. There'll be nobody alive inside that radioactive can."

The intercommunication telephone was buzzing furiously. Grimes picked up the instrument. "Commodore here."

"Mayhew, sir." The telepath's voice was oddly muffled. He sounded as though he had been crying. "It's Lassie, sir. She's dead."

A happy release, thought Grimes. *But what am I supposed to do about it?*

"One of her nightmares, sir," Mayhew babbled on. "I was inside her mind, and I tried to awaken her. But I couldn't. There was this huge rat — and there were the sharp yellow teeth of it, and the stink of it . . . It was so . . . it was so real, so vivid. And it was the fear that killed her. I could feel her fear, and it was almost too much for me."

"I'm sorry, Mr. Mayhew," said Grimes inadequately. "I will see you later. But we are just about to take the derelict in tow, and we are busy."

"I understand, sir."

And then Grimes relaxed into the padding of his chair, watching, not without envy, as Williams jockeyed the salvage tug into position ahead of the derelict, then carefully matched velocity. The outriggers were extruded, and then there was the slighest shock as the little missiles, each with a powerful magnetic grapnel as its warhead, were fired.

Contact was made, and then Williams, working with the utmost care, eased *Rim Mamelute* around in a great arc, never putting too much strain on the towing gear, always keeping the wires clear of the tug's incandescent exhaust. It was pretty to watch.

Even so, when at last it was over, when at last the Lorn Star was almost directly astern, he could not resist the temptation of asking, "But

why all this expenditure of reaction mass and time to ensure a bows-first tow, Mr. Williams?"

"S.O.P., Skipper. It's more convenient if the people in the towed ship can see where they're going."

"But it doesn't look as though there are any people. Not live ones, that is."

"But we could be putting a prize crew aboard her, Skipper."

Grimes thought about saying something about the radio activity, then decided not to bother.

"You just can't win, John," Sonya told him.

VI

In theory one can perform heavy work while clad in radiation armor. One can do so in practise — provided that one has been through a rigorous course of training. Pendeen, Second Engineer of *Rim Mamelute*, had been so trained. So, of course, had been Mr. Williams — but Grimes had insisted that the Mate stay aboard the tug while he, with Sonya and the engineer, effected an entry into the hull of the derelict. Soon, while the boarding party was making its exploratory walk over the stranger ship's shell plating, he had been obliged to order Williams to cut the drive; sufficient velocity had been built up so that both vessels were now in free fall away from the sun.

Even in free fall it was bad enough. Every joint of the heavy suit was stiff, every limb had so much mass that great physical effort was required to conquer inertia. Weary and sweating heavily, Grimes forced himself to keep up with his two companions. By a great effort of will he contrived to maintain his side of the conversation in a voice that did not betray his poor physical condition.

He was greatly relieved when they discovered, towards the stern, what was obviously an airlock door. Just a hair thin crack in the plating it was, outlining a circular port roughly seven feet in diameter. There were no signs of external controls, and the crack was too thin to allow the insertion of any tool.

"Send for the bell, sir?" asked Penden, his normally deep voice an odd treble in Grime's helmet phones.

"The bell? Yes, yes. Of course. Carry on, Mr. Pendeen."

"Al to Bill," Grimes heard. "Do you read me? Over."

"Bill to Al. Loud an' clear. What can I do for you?"

"We've found the airlock. But we want the bell."

"You would. Just stick around. It'll be over."

"And send the cutting gear while you're about it."

"Will do. Stand by."

"Had any experience with the Laverton Bell, sir?" asked Pendeen, his voice not as respectful as it might have been.

"No. Not actual working experience, that is."

"I have," said Sonya.

"Good. Then you'll know what to do when we get it."

Grimes, looking towards *Rim Mamelute*, could see that something bulky was coming slowly towards

them along one of the tow wires, the rocket that had given the packet its initial thrust long since burned out. He followed the others toward the stem of the derelict, but stood to one side, held to the plating by the magnetic soles of his boots, as they unclipped the bundle from the line. He would have helped them to carry it back aft, but they ignored him.

Back at the airlock valve, Sonya and Pendeen worked swiftly and competently, releasing the fastenings, unfolding what looked like a tent of tough white plastic. This had formed the wrapper for other things — including a gas bottle, a laser torch and a thick tube of adhesive. Without waiting for instructions, Sonya took this latter, removed the screw cap and, working on her hands and knees, used it to describe a glistening line just outside the crack that marked the door. Then all three of them, standing in the middle of the circle, lifted the fabric above their heads, unfolding it as they did so. Finally, with Grimes and Pendeen acting as tent poles, Sonya neatly fitted the edge of the shaped canopy to the ring of adhesive, now and again adding a further glob of the substance from the tube.

"Stay as you are, sir," the engineer said to Grimes, then fell to a squatting position.

His gloved hands went to the gas cylinder, to the valve wheel. A white cloud jetted out like a rocket exhaust, then faded to invisibility. Around the boarding party the walls of the tent bellied outwards, slowly tautened, distended to their true shape by the expanding helium. Only toward the end was the hiss of the escaping gas very faintly audible.

Pendeen shut the valve decisively, saying, "That's that. Is she all tight, Sonya?"

"All tight, Al," she replied.

"Good." With a greasy crayon he drew a circle roughly in the center of the airlock door, one large enough to admit a spacesuited body. He picked up the laser torch, directed its beam downwards, thumbed the firing button. The flare of vaporizing metal was painfully bright, outshining the helmet lights, reflected harshly from the white inner surface of the plastic igloo.

There was the illusion of suffocating heat — or was it more than only an illusion? Pendeen switched off the torch and straightened, looking down at the annulus of still-glowing metal. With an effort he lifted his right foot, breaking the contact of the magnetized sole with the plating. He brought the heel down sharply. The *clang*, transmitted through the fabric of their armor, was felt rather than heard by the others.

And then the circular plate was falling slowly, into the darkness of the airlock chamber, and the rough manhole was open so that they could enter.

Grimes was first into the alien ship, followed by Sonya and then Pendeen. It was light enough in the little compartment once they were into it, the beams of their hel-

met lights reflected from the white-painted walls. On the inner door there was a set of manual controls that worked — once Grimes realized that the spindle of the wheel had a left-handed thread. Beyond the inner door there was an alleyway, and standing there was a man.

The Commodore whipped the pistol from his holster, his reflexes more than compensating for the stiffness of the joints of his suit. Then, slowly, he returned the weapon to his belt.

This man was dead. Radiation may have killed him, but it had not killed all the bacteria of decay present in his body. Some freak of inertial and centrifugal forces, coming into play when the derelict had been taken in tow, had flung him to a standing posture, and the magnetic soles of his rough sandals had held him to the deck.

So he was dead, and he was decomposing, his skin taut and darkly purple, bulging over the waistband of the loincloth — it looked like sacking — that was his only clothing. He was dead — and Grimes was suddenly grateful for the sealed suit that he was wearing, the suit that earlier he had been cursing, that kept out the stench of him.

Gently, with pity and pointless tenderness, he put his gloved hands to the waist of the corpse, lifted it free of the deck, shifted it to one side.

"We must be just about engine room level," said Sonya, her voice deliberately casual.

"Yes," agreed Grimes. "I wonder if this ship has an axial shaft. If she has, it will be the quickest way of getting to the control room."

"That will be the best place to start investigations," she said.

They moved on through the alleyway, using the free fall shuffle that was second nature to all of them, letting the homing instinct that is part of the nature of all spacemen guide them. They found more bodies, women as well as men, sprawled in untidy attitudes, hanging like monstrous mermen and merwomen in a submarine cave. They tried to ignore them, as they tried to ignore the smaller bodies of children, and came at last, at the end of a short, radial alleyway, to the stout pillar of the axial shaft.

There was a door in the pillar. It was open.

One by one they passed through it and then began pulling themselves forward along the central guide rod, ignoring the spiral ramp that lined the tunnel. Finally they came to a conventional enough hatchway, but the valve sealing the end of the shaft was jammed. Grimes and Sonya fell back to let Pendeen use the laser torch. Then they followed him into the control room.

VII

There were more bodies in the control room. There were three dead men and three dead women, all of them strapped into acceleration chairs. Like all the others scattered throughout the ship they were clad only in rough, scanty rags, were swollen with decomposition.

Grimes forced himself to ignore

them. He could do nothing for them. Perhaps, he thought, he might some day avenge them (somehow he did not feel that they had been criminals, pirates) — but that would not bring them back to life.

He looked past the unsightly corpses to the instruments on the consoles before their chairs. These, at first glance, seemed to be familiar enough — white dials with the black calibrations marked with Arabic numerals; red, green, white and amber pilot lights, dead now, but ready to blossom with glowing life at the restoration of a power supply. Familiar enough they were, at first glance. But there were the odd differences, the placement of various controls in positions that did not tally with the construction and the articulation of the normal human frame. And there was the lettering — MINNSCHINN DRIVI, RIMITI CINTRIL. Who, he asked himself, were the builders of this ship, this vessel that was almost a standard Federation Survey Service cruiser? What human race had jettisoned every vowel in the alphabet but this absurdly fat "I"?

"John," Sonya was saying, "give me a hand drill, will you?"

He turned to see what she was doing. She was trying to unbuckle a seat belt that was deeply embedded in the distended flesh at the waist of one of the dead men.

He conquered his revulsion, swallowed the nausea that was rising in his throat. He pulled the sharp sheath knife from his belt, "This is quicker," and slashed through the tough fabric of the strap. He was careful not to touch the gleaming, purple skin. He knew that if he did so the dead man would . . . burst.

Carefully, Sonya lifted the body from its seat, sat it down on the deck so that the magnetized sandal shoes were in contact with the steel plating. Then she pointed to the back of the chair. "What do you make of this?" she asked.

"*That* was a vertical slot, just over an inch in width, that was continued into the seat itself, half bisecting it.

It was Pendeen who broke the silence. He said simply, "They had tails."

"But they haven't," objected Grimes. It was obvious that the minimal breech-clouts of the dead people could not conceal even a tiny caudal appendage.

"My dear John," Sonya told him in an annoyingly superior voice, "these hapless folk are neither the builders nor the original crew of this ship. Refugees? Could be. Escapees? A slave revolt? Once again — could be. Or must be. This is a big ship and a fighting ship. You can't run a vessel of this class without uniforms, without marks of rank so you can see at a glance who is supposed to be doing what. Furthermore, you don't clutter up a man-o'-war with children."

"She's not necessarily a man-o'-war," demurred Grimes. "She could be a defensively armed merchantman."

"With officers and first class passengers dressed in foul rags? With a name like Destroyer?"

"We don't *know* that that grouping of letters on the stem does spell DESTROYER."

"We don't *know* that this other grouping of letters — " she pointed to the control panel that Grimes had been studying — "spells MANNSCHENN DRIVE — REMOTE CONTROL. But I'm willing to bet my gravity that if you trace the leads you'll wind up in a compartment full of dimension-twisting gyroscopes."

"All right," said Grimes. "I'll go along with you. I'll admit that we're aboard a ship built by some humanoid but possibly nonhuman race that, even so, uses a peculiar distortion of English as its written language."

"A humanoid race with tails," contributed Pendeen.

"A humanoid race with tails," agreed Sonya. "But *what* race? Look at this slot in the chair back. It's designed for somebody — or something — with a *thin* tail, thin at the root as well as at the extremity. And the only tailed beings we know with any technology comparable to our own have *thick* tails — and, furthermore, have their own written languages. Just imagine one of our saurian friends trying to get out of that chair in a hurry — assuming that he'd ever been able to get into it in the first place. He'd be trapped."

"You're the Intelligence Officer," said Grimes rather nastily.

"All right. I am. Also, I hold a doctorate in Xenology. And I tell you, John, that what we've found in this ship, so far, doesn't add up to any kind of sense at all."

"She hasn't made any sense ever since she was first picked up by Station 3," admitted Grimes.

"That she hasn't," said Pendeen. "And I don't like her. Not one little bit."

"Why not, Mr. Pendeen?" asked Grimes, realizing that it was a foolish question to ask about a radioactive hull full of corpses.

"Because . . . . Because she's *wrong,* sir. The proportions and siting of all her controls and fittings — just wrong enough to be scary. And left-handed threads, and gauges calibrated from right to left."

"So they are," said Grimes. "But that's odder still. Why don't they write the same way? From right to left."

"Perhaps they do," murmured Sonya. "But I don't think so. I think that the only difference between our written language and theirs is that they have an all-purpose 'I', or an all-purpose symbol that's used for every vowel sound." She was prowling around the control room. "Damn it all, there *must* be a log book."

"There should be a log book," amended Grimes.

"All right. There should be a log book. Here's an obvious log desk, complete with stylus, but empty . . . I begin to see how it must have been. The ship safe in port, all her papers landed for checking, and then her seizure by these people, by these unfortunate humans, whoever *they* were . . . . H'm. The

chart tank might tell us something . . ." She glared at the empty globe. "It would have told us something if it hadn't been in close proximity to a nuclear blast. But there will be traces. Unfortunately we haven't the facilities here to bring them out." She resumed her purposeful shuffle. "And what have we here? SIGNIL LIG? SIGNAL LOG? A black box that might well contain quite a few answers when we hook it up to a power supply. And that, I think will lie within the capabilities of our Radio Officer back aboard *Rim Mamelute.*"

The thing was secured by simple enough clips to the side of what was obviously a transceiver. Deftly, Sonya disengaged it, tucked it under her arm.

"Back to the *Mamelute,*" said Grimes. It was more an order than a suggestion.

"Back to the *Mamelute,*" she agreed.

The Commodore was last from the control room, watched first Pendeen and then Sonya vanish through the hatch into the axial shaft. He half wished that enough air remained in their suit tanks for them to make a leisurely examination of the accommodation that must be situated abaft Control — and was more than half relieved that circumstances did not permit such a course of action. He had seen his fill of corpses. In any case, the signal log might tell them far more than the inspection of decomposing corpses ever could.

He felt easier in his mind when the three of them were standing, once more, in the plastic igloo that covered the breached airlock and almost happy when, one by one, they had squeezed through the built-in sphincter valve back to the clean emptiness of Space. The harsh working lights of *Rim Mamelute* seemed soft somehow, mellow almost, suggested the lights of Home. And the cramped interior of the tug, when they were back on board, was comforting.

If one has to be jostled, it is better to be jostled by the living than by dead men and women, part-cremated in a steel coffin tumbling aimlessly between the stars.

VIII

It was very quiet in the radio office of *Rim Mamelute.* Grimes and Sonya stood there, watching chubby little Bennett make the last connections to the black box that they had brought from the control room of the derelict. "Yes," the Electronic Radio Officer had told them, "it is a signal log. And it's well shielded, so whatever records it may contain probably haven't been wiped by radiation. Once I get it hooked up we'll have the play back."

And now it was hooked up. "Are you sure you won't burn it out?" asked the Commodore, suddenly anxious.

"Almost sure, sir," answered Bennett cheerfully. "The thing's practically an exact copy of the signal logs that were in use in some ships of the Federation Survey Service all of fifty years ago. Before

my time. Anyhow, my last employment before I came out to the Rim was in the Lyran Navy, and their wagons were all Survey Service cast offs. In many of them the original communications gear was still in place and still in working order. No, sir, this isn't the first time that I've made one of these babies sing. Reminds me of when we picked up the wreck of the old *Minstrel Boy* — I was Chief Sparks of the *Tara's Hall* at the time — and got the gen from her signal log that put us on the trail of Black Bart . . ." He added unnecessarily, "the pirate."

"I have heard of him," said Grimes coldly.

Sonya remarked, pointing towards the box, "But it doesn't *look* old."

"No, Mrs. Grimes. It's not old. Straight from the maker, I'd say. But there's no maker's name, which is odd."

"Switch on, Mr. Bennett," ordered the Commodore.

Bennett switched on. The thing hummed quietly, crackled briefly and thinly as the spool rewound. It crackled again, more loudly, and the play back began.

The voice that issued from the speaker spoke English — of a sort. But it was not human. It was a thin, high, alien squeaking. And yet, somehow, not alien enough. The consonants were ill-defined, and there was only one vowel sound.

"Eeveengeer tee *Deestreeyeer. Eeveengeer* tee *Deestreeyeer.* Heeve tee. Heeve tee!"

The voice that answered was not a very convincing imitation of that strange accent. *"Deestreeyer* tee *Eeveenger.* Reepeet, pleese. Reepeet."

"A woman," whispered Sonya. "Human."

Heeve tee, *Deestreeyeer,* Heeve tee, eer wee eepeen feer!"

A pause, then the woman's voice again, the imitation even less convincing, a certain desperation all too evident: *"Deestreeyeer* tee *Avenger. Deestreeyeer* tee *Eeveengeer* . . . Eer Dreeve ceentreels eer eet eef eerdeer . . ."

Playing for time, thought Grimes. *while clumsy hands fumble with unfamiliar armament. But they tried. They did their best . . .*

"Dee!" screamed the inhuman voice. "Heemeen sceem, dee!"

"And that must have been it," muttered Grimes.

"It was," said Sonya flatly, and the almost inaudible whirring of what remained on the spool bore her out.

"That mistake she made," said Grimes softly, "is the clue. For *Eeveengeer,* read *Avenger.* For every 'E' sound substitute the vowel that makes sense. But insofar as the written language is concerned, that fat 'I' is really an 'E'."

"That seems to be the way of it," agreed Sonya.

" 'Die' ", repeated the Commodore slowly. " 'Human scum, die!' " He said, "Whoever those people are, they wouldn't be at all nice to know."

"That's what I'm afraid of," Sonya told him. "That we might get to know them. Whoever they are — and wherever, and whenever."

IX

The derelict hung in orbit about Lorn, and the teams of scientists and technicians continued the investigations initiated by *Rim Mamelute's* people during the long haul to the tug's home planet. Grimes, Sonya and the others had been baffled by what they had found — and now, with reluctance, the experts were admitting their own bafflement.

This ship — named *Destroyer* by her builders, and renamed *Freedom* by those who had not lived long to enjoy it — seemed to have just completed a major refit and to have been in readiness for her formal recommissioning. Although her magazines and some of her storerooms were stocked, although her hydroponics tanks and tissue culture vats had been operational at the time of her final action, her accommodation and working spaces were clean of the accumulation of odds and ends that, over the years, adds appreciably to the mass of any vessel. There were no files of official correspondence, although there was not a shortage of empty filing cabinets. There were no revealing personal possessions such as letters, photographs and solidographs, books, recordings, magazines and pin-up girl calendars. (The hapless humans who had been killed by the blast seemed to have brought aboard only the rags that they were wearing.) There were no log books in either control or engine rooms.

The cabins were furnished, however, and in all of them were the strange chairs with the slotted backs and seats, the furniture that was evidence of the existence of a race — an unknown race, insisted the xenologists — of tailed beings, approximating the human norm in stature. Every door tally was in place. And each one made it clear that the creatures who had manned the ship, before her seizure, used the English language, but a version of it peculiarly their own. KIPTIN . . . CHIIF INGINIIR . . . RIICTIIN DRIVI RIIM . . . HIDRIPINICS RIIM . . .

Even so she was, apart from the furniture and the distortions of printed English and—as the engineers pointed out — the prevalence of left-handed threads, a very ordinary ship, albeit somewhat old-fashioned. There was, for example, no Carlotti navigational and communications equipment. And the signal log was a model the use of which had been discontinued by the Survey Service for all of half a standard century. And she lacked yet another device of fairly recent origin — the Mass Proximity Indicator.

She was, from the engineering viewpoint, a very ordinary ship; it was the biologists who discovered a shocking abnormality.

They did not discover it at once. They concentrated, at first, upon the cadavers of the unfortunate humans. These were, it was soon announced, indubitably human. They had been born upon and had lived their lives upon an Earth-type planet — but their lives had not been pleasant ones. Their physiques exhibited all the signs of under-

nourishment, of privation, and they almost all bore scars that told an ugly story of habitual maltreatment. But they were men, and they were women, and had they lived and had enjoyed for a year or so normal living conditions they would have been indistinguishable from the citizens of any Man-colonized world.

And there was nothing abnormal in the hydroponics tanks. There were just the standard plants that are nutured in ships' farms throughout the galaxy — tomatoes and cucumbers, potatoes and carrots, the Centaurian umbrella vine, Vegan mossfern.

It was the tissue culture vats that held the shocking secret.

The flesh that they contained, the meat that was the protein supply for the tailed beings who should have manned the ship, was human flesh.

"I was right," said Sonya to Grimes. "I was right. Those people — whoever, wherever (and whenever?) they are — are our enemies. But *where* are they? *And when?*"

"From . . . from outside?" wondered the Commodore.

"Don't be a bloody fool, John. Do you think that a race could wander in from the next galaxy but three, reduce a whole planet of humans to slavery, and worse than slavery, without our knowing about it? And why should such a race, if there were one, have to borrow — or steal — our shipbuilding techniques, our language, even? Damn it all, it doesn't make sense. It doesn't even begin to make sense."

"That's what we've all been saying ever since this blasted derelict first appeared."

"And it's true." She got up from her chair and began to pace up and down Grimes's office. "Meanwhile, my dear, we've been left holding the baby. You've been asked to stay on in your various capacities until the mystery has been solved, and my resignation from the Intelligence Branch of the Survey Service has been rescinded. I've been empowered by the Federation Government to co-opt such Confederacy personnel to assist me in my investigations as I see fit. (That means you — for a start.) Forgive me for thinking out loud. It helps sometimes. Why don't you try it?"

"All we *know*," said Grimes slowly, "is that we've been left holding the baby."

"All we know," she countered, "is that we're suppose to carry the can back."

"But why shouldn't we?" he demanded suddenly. "Not necessarily this can, but one of our own."

She stopped her restless motion, turned to stare at him. She said coldly, "I thought that you had made a study of archaic slang expressions. Apparently I was wrong."

"Not at all, Sonya, I know what 'to carry the can back' means. I I know, too, that the word 'can' is still used to refer to more and bigger things than containers of beer or preserved foods. Such as —"

"Such as ships," she admitted.

"Such as ships. All right. How do we carry the can — or *a* can —

back? Back to where *the* can came from?"

"But *where?* Or *when?*"

"That's what we have to find out."

She said, "I think it will have to be *the* can. That is if you're thinking what I think you're thinking — that this *Destroyer* or *Freedom* or whatever you care to call her drifted in from one of the alternative universes. She'll have that built-in urge. Yes, urge. She'll have that built-in urge to return to her own continuum."

"So you accept the alternative universe theory?"

"It seems to fit the facts. After all, out here on the Rim, the transition from one universe to another has been made more than once."

"As we should know."

"If only we knew how the derelict did drift in — "

"Did she *drift* in?" asked Grimes softly. And then, in spoken answer to his wife's unspoken query, "I think she was blown in."

"Yes . . . . Yes. Could be. A nuclear explosion in close, very close proximity to the ship. The very fabric of the continuum, strained and warped." She smiled, but it was a grim smile. "That could be it."

"And that could be the way to carry the can back."

"I don't want to be fried, my dear. And, oddly enough. I shouldn't like to see you fried."

There's no need for anybody to be fried. Have you never heard of lead shielding?"

"Of course. But the weight! Even if we shielded only a small compartment the reaction drive'd be working flat out to get us off the ground, and we'd have damn all reaction mass to spare for any maneuvers. And the rest of the ship, as we found when we boarded the derelict, would be so hot as to be uninhabitable for months."

He gestured towards the wide window, to the squat tower that was *Faraway Quest*. "I seem to remember, Sonya, that you shipped with me on our wild ghost chase. Even though you were aboard as an officer of the Federation's Naval Intelligence you should remember how the *Quest* was fitted. Anti-matter gave us anti-gravity. We can incorporate it into *Freedom's* structure as it was incorporated into the *Quest's*. With it functioning, we can afford to shield the entire ship and still enjoy almost negative mass."

"So you think we should take *Freedom,* or *Destroyer,* and not *Faraway Quest?*"

"I do. Assuming that we're able to blow her back into the continuum she came from, she'll be a more convincing Trojan Horse than one of our own ships."

"Cans," she said. "Trojan horses. Can you think of any more metaphors?" She smiled again, and her expression was not quite so grim. "But I see what you mean. Our friends with the squeaky voices and the long, thin tails will think that their own lost ship has somehow wandered back to them, still manned by the escaped slaves." Her face hardened. "I almost feel sorry for them."

"Almost," he agreed.

X

The boffins were reluctant to release *Freedom,* but Grimes was insistent, explaining that disguise of *Faraway Quest,* no matter how good, might well be not good enough. A small, inconspicuous but betraying feature of her outward appearance could lead to her immediate destruction. "Then what about the crew, Commodore?" asked one of the scientists. "Surely those tailed beings will soon realize that the ship is not manned by the original rebels."

"Not necessarily," Grimes told the man. "In fact, I think it's quite unlikely. Even among human beings all members of a different race tend to look alike. And when it comes to members of two entirely different species — "

"I'm reasonably expert," added Sonya, "but even I find it hard until I've had time to observe carefully the beings with whom I'm dealing."

"But there's so much that we could learn from the ship!" protested the scientist.

"Mr. Wales," Grimes said to the Rim Runners' Superintending Engineer, "How much do you think there is to be learned from the derelict?"

"Not a damn thing, Commodore. But if we disguise one of our own ships and succeed in blowing her into whatever comic alternative universe she came from, there's far too much that could be learned from *us.* In shipbuilding we're practically a century ahead."

"Good enough. Well, gentlemen?"

"I suggest, Commodore, that we bring your *Freedom's* armament up to scratch," said Admiral Hennessey — but the way that he said it made it more of an order than a suggestion.

Grimes turned to face the Admiral, the flag officer commanding the naval forces of the Confederacy. Bleak stare clashed with bleak stare, almost audibly. As an officer of the reserve Grimes considered himself a better spaceman than his superior and was inclined to resent the intrusion of the Regular Navy into what he was already regarding as his own show.

He replied firmly, "No, sir. That could well give the game away."

He was hurt when Sonya took the Admiral's side — but, after all, she was regular Navy herself, although Federation and not Confederacy. She said, "But what about the lead sheathing, John? What about the sphere of anti-matter?"

Grimes was not beaten. "Mr. Wales has already made a valid point. He thinks that it would be imprudent to make the aliens a present of a century's progress in astronautical engineering. It would be equally imprudent to make them a present of a century's progress in weaponry."

"You have a point there, Grimes," admitted the Admiral. "But I do not feel happy about allowing my personnel in a vessel on a hazardous mission without the utmost protection that I can afford them."

"Apart from the Marines, sir, my personnel rather than yours.

Practically every officer will be a reservist."

The Admiral glared at the Commodore. He growled, "Frankly, if it were not for the pressure brought to bear by our Big Brothers of the Federation, I should insist on commissioning a battle squadron." He smiled coldly in Sonya's direction. "But the Terran Admiralty seems to trust Commander Verrill — or Mrs. Grimes — and has given her on-the-spot powers that would be more fitting to a holder of flag officer's rank. And my own instructions from Government House are to afford her every assistance." He made a ritual of selecting a long, black cigar from the case that he took from an inside pocket of his uniform, lit it, filled the already foul air of the derelict's control room with wreathing eddies of acrid blue smoke. He said in a voice that equalled in acridity the fumes that carried it, "Very well, Commodore. You're having your own way. Or your wife is having her own way; she has persuaded the Federation that you are to be in full command. (But will you be, I wonder?) May I, as your Admiral, presume to inquire just what are your intentions, assuming that the nuclear device that you have commandeered from my arsenal does blow you into the right continuum?"

"We shall play by ear, sir."

The Admiral seemed to be emulating the weapon that he had just mentioned, but he did not quite reach critical mass. "Play by ear!" he bellowed at last, when coherent speech was at last possible. "Play by ear! Damn it all, sir, that's the sort of fatuous remark one might expect from a snotty making his first training cruise, but not from an allegedly responsible officer."

"Admiral Hennessey!" Sonya's voice was as cold as his had been. "This is not a punitive expedition. This is not a well organized attack by naval forces. This is an Intelligence operation. We do not know what we are up against. We are trying to find out." Her voice softened slightly. "I admit that the Commodore expressed himself in a rather unspacemanlike manner — but playing by ear is what we shall do. How shall I put it? We shall poke a stick into the ants' nest and see what comes out."

"We shall hoist the banner of the Confederacy to the masthead and see who salutes," somebody said in one of those carrying whispers. The Admiral, the Commodore and Sonya Verrill turned to glare at the man. Then Sonya laughed. "That's one way of putting it. Only it won't be the black and gold of the Confederacy — it'll be the black and silver of the Jolly Roger. A little judicious piracy — or privateering. Will Rim Worlds Letter of Marque be valid wherever we're going, Admiral?"

That officer managed a rather sour chuckle. "I think I get the drift of your intentions, Commander. I hate to have to admit it — but I wish that I were coming with you." He transferred his attention to Grimes. "So, Commodore, I think that I shall be justified in at least

repairing or renewing the weapons that were damaged or destroyed by the blast — as long as I don't fit anything beyond the technology of the builders of this ship."

"Please do that, sir."

"I shall. But what about small arms for your officers and the Marines?"

Grimes pondered the question. There had been no pistols of any kind aboard the derelict when he had boarded her. It could be argued that this was a detail that did not much matter. Should the ship be boarded and seized herself, there would be both the lead sheathing *and* the sphere of anti-matter that would make it obvious to the boarding party that she had been . . . elsewhere. Assuming, that is, that the last survivors of her crew did not trigger the explosive charge that would shatter the neutronium shell and destroy the magnets, thus bringing the sphere of anti-iron into contact with the normal matter surrounding it. Then there would be *nobody* to talk about what had been found.

But *Freedom* — as a pirate or a privateer — would be sending boarding parties to other ships. There was the possibility that she might have to run before superior forces, unexpectedly appearing, leaving such a boarding party to its fate. Grimes most sincerely hoped that he would never have to make such a decision. And if the boarding party possessed obviously alien hand weapons the tailed beings would be, putting it very mildly, suspicious.

"No hand weapons," he said at last, reluctantly. "But I hope that we shall be able to capture a few and that we shall be able to duplicate them in the ship's workshop. Meanwhile, I'd like your Marines to be experts in unarmed combat — both suited and unsuited."

"And expert knife fighters," added Sonya.

"Boarding axes and cutlasses," contributed the Admiral, not without relish.

"Yes, sir," agreed Grimes. "Boarding axes and cutlasses."

"I suggest, Commodore," said Hennessey, "that you do a course at the Personal Combat Center at Lorn Base."

"I don't think that there will be time, sir," said Grimes hopefully.

"There will be, Commodore. The lead sheathing and the anti-matter sphere cannot be installed in five minutes. And there are the weapons to be repaired and renewed."

"There will be time," said Sonya.

Grimes sighed. He had been in one or two minor actions in his youth, but they had been so . . . impersonal. It was the enemy ship that you were out to get — and the fact that a large proportion of her crew was liable to die with her was something that you glossed over. You did not see the dreadful damage that your missiles and beams did to the fragile flesh and blood mechanisms that were human beings. Or if you did see it, a hard frozen corpse is not the same as one still warm, still pumping blood from severed arteries, still twitching in a ghastly semblance to life.

"There will be time, Commodore," repeated the Admiral.

"There will be time," repeated Sonya.

"And what about you, Mrs. Grimes?" asked Hennessey unkindly.

"You forget, sir, that in my branch of the Federation's service we are taught how to kill or maim with whatever is at hand any and every life form with which we may come into contact."

"Then I will arrange for the Commodore's course," Hennessey told her.

It was, for Grimes, a gruelling three weeks. He was fit enough, but he was not as hard as he might have been.

Even wearing protective armor he emerged from every bout with the sergeant instructor badly bruised and battered. And he did not like knives, although he attained fair skill with them as a throwing weapon. He disliked cutlasses even more. And the boarding axes, with their pike heads, he detested.

And then, quite suddenly, it came to him. The instructor had given him a bad time, as usual, and had then called a break. Grimes stood there, sagging in his armor, using the shaft of his axe as a staff upon which to lean. He was aching, and he was itching inside his protective clothing, and his copious perspiration was making every abrasion on his skin smart painfully.

Without warning the instructor kicked Grimes support away with a booted foot and then, as the Commodore sprawled on the hard ground, raised his own axe for the simulated kill.

Although a red haze clouded his vision Grimes rolled out of the path of the descending blade, heard the blunted edge thud into the dirt a fraction of an inch from his helmeted head. He was on his feet then, moving with an agility that he had never dreamed that he possessed, crouching, and his spiked head thrusting viciously at the instructor's crotch. The man squealed as the blow connected; even the heavy cod piece could not save him from severe pain. He squealed, but brought his own axe round in a sweeping, deadly arc. Grimes parried, blade edge to shaft, to such a good effect that the lethal head of the other's weapon was broken off, clattering to the ground many feet away. He parried and followed through, his blade clanging on the instructor's shoulder armor. Yet another blow, this time to the man's broad back, and he was down like a felled ox.

Slowly the red haze cleared from the Commodore's vision as he stood there. Slowly he lowered his axe, and as he did so he realized that the instructor had rolled over, was lying there laughing up at him, was saying, "Easy, sir. Easy. You're not supposed to kill me, sir. Or to ruin my matrimonial prospects."

"I'm sorry, Sergeant," Grimes said stiffly. "But that was a dirty trick *you* played."

"It was meant to be dirty, sir. Never trust nobody. That's Lesson One."

"And Lesson Two, Sergeant?"

"You've learned that too, sir. You *gotta* hate. You officers are all the same — you don't really hate the poor cows at the other end of the trajectory when you press a firing button. But in this sort of fighting you *gotta* hate."

"I think I see, Sergeant," said Grimes.

But he was not sorry when he was able to return to his real business — to see *Freedom* (or *Destroyer*) readied for her expedition into the Unknown.

XI

Freedom was commissioned as a cruiser of the Navy of the Rim Worlds Confederacy — but the winged wheel of the Rim Worlds had not replaced the embossed lettering of her original name or the crude, black-painted characters that had partially obscured it. *Freedom* was manned by spacemen and spacewoman of the Reserve and a company of Marines. But there was no display of gold braid and brass buttons. Marks of rank and departmental insignia had been daubed on the bare skin or wrists and upper arms and shoulders in an indelible vegetable dye. Apart from this crude attempt at uniform, the ship's complement was attired in scanty, none too clean rags. The men were shaggily bearded; the roughly hacked hair of the women was unkempt. All of them bore unsightly cicatrices on their bodies — but these were the result of plastic surgery, not of ill-treatment.

Outwardly, *Freedom* was just as she had been when she suddenly materialized in her suicidal orbit off Lorn. Internally, however, there had been changes made. On the side that had been seared by the blast, the weapons — the laser projectors and the missile launchers — had been repaired, although this had been done so as not to be apparent to an external observer. In a hitherto empty storeroom just forward of the enginerooms, the sphere of anti-matter had been installed — the big ball of anti-iron and the powerful magnets that held it in place inside its neutronium casing. And within the shell plating was the thick lead sheathing that would protect the ship's personnel from lethal radiation when the nuclear device was exploded that, Grimes hoped, would blow the vessel back to where she had come from. (The physicists had assured him that the odds on this happening were seven-to-five, and that the odds on the ship's finding herself in a habitable universe seemed to be almost astronomical.)

There was one more change insofar as the internal fittings were concerned, and it was a very important one. The tissue culture vats now contained pork and not human flesh. "After all," Grimes had said to a biologist who was insisting upon absolute verisimilitude, "there's not all that much difference between pig and long pig."

The man had gone all technical on him, and the Commodore had snapped, "Pirate we may have to become, but not cannibals!"

But even pirates, thought Grimes, surveying the officers in his control room, *would be dressier than this mob.*

He was glad that he had insisted upon the painted badges of rank — the beards made his male officers hard to recognize. With the female ones it was not so bad, although other features (like the men, the women wore only breech clouts) tended to distract attention from their faces. *Clothes certainly make the man,* the Commodore admitted wryly to himself. *And the woman — although this very undress uniform suits Sonya well enough, even though her hairdo does look as though she's been dragged through a hedge backwards.* It felt all wrong for him to be sitting in the chair of command, the seat of the mighty, without the broad gold stripes on his epaulettes (and without the epaulettes themselves, and without a shirt to mount them on) and without the golden comets encrusting the peak of his cap. But the ragged, indigo band encircling each hairy wrist would have to do, just as the coarse, burlap kilt would have to substitute for the tailored, sharply creased shorts that were his normal shipboard wear.

He was concerning himself with trivialities, he knew. But it is sometimes helpful and healthy to let the mind be lured away, however briefly, from consideration of the greater issues.

Williams — lately Mr. Williams, Mate of *Rim Mamelute,* now Commander Williams, Executive Officer of *Freedom* — had the con. Under his control the ship was riding the beam from Lorn back to the position in which she had first been picked up by Orbital Station 3. It was there, the scientists had assured Grimes, that she would stand the best chance of being blown into her own continuum. The theory seemed to make sense, although the mathematics of it were far beyond the Commodore, expert navigator though he was.

The ship was falling free now, her reaction drive silent, dropping down the long empty miles towards a rendezvous that would be no more (at first) than a flickering of needles on dials, an undulation of the glowing traces on the faces of monitor tubes. Through the still unshuttered ports there was nothing to be seen ahead but the dim, ruddy spark that was the Eblis sun, and nothing to port but a faint, far nebulosity that was one of the distant island universes. To starboard was the mistily gleaming galactic lens, a great ellipse of luminosity in which there were specks of brighter light, like jewels in the hair of some dark goddess. Grimes smiled wryly at his poetic fancies — and Sonya, who had guessed what he had been thinking, grinned at him cheerfully. She was about to speak when William's voice broke the silence. "Hear this! Hear this! Stand by for deceleration. Stand by for deceleration!"

Retro-rockets coughed, then shrieked briefly. For a second or so seat belts became almost intolerable bonds. The Executive Officer emitted a satisfied grunt, then

said, "Spot on, Skipper. Secure for the big bang?"

"You know the drill, Commander Williams. Carry on, please."

"Good-oh, Skipper." Williams snapped orders, and the ship shivered a little as the capsule containing the nuclear device was launched.

Grimes saw the thing briefly from a port before the shutters of armor plating and thick lead sheathing slid into place. It was just a dull-gleaming metal cylinder. It should have looked innocuous — but somehow it didn't. Grimes was suddenly acutely conscious of the craziness of this venture. The scientists had been sure that everything would work as it should — but they were not here to see their theories put to the test. *But I must be fair,* Grimes told himself. *After all, it was* our *idea. Mine and Sonya's . . .*

"Fire!" he heard Williams say.

But nothing happened.

There was no noise — but, of course, in the vacuum of deep space there should not have been. There was no sense of shock. There was no appreciable rise of the control room temperature.

"A misfire?" somebody audibly wondered.

"Try to raise Lorn," Grimes ordered the Radio Officer. "Orbital Station 3 is maintaining a listening watch on our frequency."

There was a period of silence, broken only by the hiss and crackle of interstellar static, then the voice of the operator saying quietly, *"Freedom* to Station Three. Freedom to Station Three. Do you hear me?

Again there was silence.

"Sample the bands," said Grimes. "Listening watch only."

And then they knew that the bomb had exploded, that the results of the explosion had been as planned.

There was an overheard dialogue between two beings with high, squeaky voices, similar to the voice that had been recorded in *Freedom's* signal log. There was a discussion of estimated time of arrival and of arrangements for the discharge of cargo — hard to understand at first, but easier once ear and brain became attuned to the distortion of vowel sounds.

When the ports were unscreened, the outside view was as it had been prior to the launching of the bomb — but Grimes and his people knew that the worlds in orbit around those dim, far suns were not, in this Universe, under human dominion.

XII

"What's their radar like?" asked Grimes.

"Judging by what's in this ship, not too good," replied Williams. "Their planet and station-based installations will have a longer range, but unless they're keeping a special look out they'll not pick us up at this distance."

"Good," said Grimes. "Then swing her, Commander. Put the Lorn sun dead ahead. Then calculate what deflection we shall need to make Lorn itself our planetfall."

"Reaction Drive, sir?"

"No. Mannscheen Drive."

"But we've no Mass Proximity Indicator, Skipper. And a jump of light-minutes only —"

"We've slipsticks and a perfectly good computer. With any luck we shall be able to intercept that ship coming in for a landing."

"You aren't wasting any time, John," said Sonya, approval in her voice. The Commodore could see that she was alone in her sentiments. The other officers, including the Major of Marines, were staring at him as though doubtful of his sanity.

"Get on with it, Commander," snapped Grimes. "Our only hope of intercepting that ship is to make a fast approach and one that cannot be detected. And make it Action Stations while you're about it."

"And Boarding Stations?" asked the major. The spacegoing soldier had recovered his poise, was regarding his superior with respect.

"Yes. Board Stations. Get yourself and your men into those adapted spacesuits." He added, with a touch of humor, "And don't trip over your tails."

He sat well back in his chair as the gyroscopes whined, as the ship's transparent nose with its cobweb of graticules swung slowly across the almost empty sky. And then the yellow Lorn sun was ahead and Sonya, who had taken over the computer, was saying, "Allowing a time lag of exactly one hundred and twenty seconds from . . . *now*, give her five seconds of arc left deflection."

"Preliminary thrust?" asked Williams.

"Seventy-five pounds, for exactly 0.5 second."

"Mannschenn Drive ready," reported the officer at the remote control.

Grimes was glad that he had ordered the time-warping device to be warmed up before the transition from one universe to the other had been made. He had foreseen the possibility of flight; he had not contemplated the possibility of initiating a fight. But, as he had told the Admiral, he was playing by ear. He said to Sonya, "You have the con, Commander Verrill. Execute when ready."

"Ay, ay, sir. Stand by all. Commander Williams — preliminary thrust on the word 'Fire!' Mr. Cavendish, Mannschenn Drive setting 2.756. Operate for exactly 7.5 seconds immediately reaction drive has been cut. Stand by all. Ten . . . Nine . . . Eight . . . Seven . . . Six . . . Five . . ."

Like one of the ancient submarines, Grimes was thinking. *An invisible approach to the target, and not even a periscope to betray us. But did those archaic warships ever make an approach on Dead Reckoning? I suppose that they must have done — but only in their infancy.*

"Four . . . Three . . . Two . . . One . . . *Fire!*"

The rockets coughed briefly, diffidently, and the normally heavy hand of acceleration delivered no more than a gentle pat. Immediately there was the sensation of both temporal and spatial dis-

orientation as the ever-precessing gyroscopes of the Drive began to spin — a sensation that faded almost at once. And then the control room was flooded with yellow light that dimmed as the ports were polarized. But there was still light — a pearly radiance of reflected illumination from the eternal, familiar overcast of Lorn. That planet hung on their port beam, a great, featureless sphere, looking the same as it had always looked to the men and women at the controls of the ship.

But it was not the same.

There was that excited voice, that shrill voice spilling from the speaker. "Whee eere yee? Wheet sheep? Wheet sheep? Wee sheell reepeert yee. Yee knee theer eet ees feerbeedeen tee eese thee Dreeve weetheen three reedeei!"

"Almost rammed the jerks," commented Williams. "That was close, Skip."

"It was," agreed Grimes, looking at the radar repeater before his chair. "Match trajectory, Commander." He could see the other ship through the ports now. Like *Freedom*, she was in orbit about Lorn. The reflected sunlight from her metal skin was dazzling, and he could not make out her name or any other details. But Sonya had put on a pair of polaroids with telescopic lenses. She reported, "Her name's *Weejee*. Seems to be just a merchantman. No armament that I can see."

"Mr. Carter!"

"Sir!" snapped the Gunnery Officer.

"See if your laser can slice off our friend's main venturi. And then the auxiliary ones."

"Ay, ay, sir."

The invisible beams stabbed out from *Freedom's* projectors. In spite of the dazzle of reflected sunlight from the other's hull, the blue incandescence of melting, vaporizing metal was visible. And then Grimes was talking into the microphone that somebody had passed to him, *"Freedom* to *Weejee. Freedom* to *Weejee.* We are about to board you. Offer no resistance, and you will not be harmed."

And the shrill voice, hysterical now, was screaming to somebody far below on the planet's surface. "Heelp! Heelp! Eeet ees thee *Dees*treeyeer; Eeet ees thee sleeves! Heelp!"

"Jam their signals!" ordered Grimes. How long would it be before a warship came in answer to the distress call? Perhaps there was already one in orbit, hidden by the bulk of the planet. And there would be ground to space missiles certainly — but Carter could take care of them with his laser.

Somebody came into the control room, a figure in bulky space armor, a suit that had been designed to accommodate a long, prehensile tail. For a moment Grimes thought that it was one of the rightful owners of the ship, that somehow a boarding had been effected. And then the Major's voice distorted by the diaphragm in the snouted helmet, broke the spell. "Commodore Grimes, sir," he said formally, "my men are ready."

Grimes told him, "I don't think our friends out there are going to open up." He added regretfully, "And we have no laser pistols."

"There are cutting and burning tools in the engineers' workshop, sir. I have already issued them to my men."

"Very good, Major. You may board."

"Your instructions, sir?"

"Limit your objectives. I'd like the log books from her Control and any other papers, such as manifests, that could be useful. But if there's too much resistance, don't bother. We may have to get out of here in a hurry. But I shall want at least one prisoner."

"We shall do our best, sir."

"I know you will, Major. But as soon as I sound the Recall — come a-running."

"Very good, sir." The Marine managed a smart salute even in the disguising armor as he left the control room.

"Engaging ground to space missiles," announced the Gunnery Officer in a matter-of-fact voice. Looking out through the planetward ports, Grimes could see tiny, distant, intensely brilliant sparks against the cloud blanket. There was nothing to worry about — yet. Carter was picking off the rockets as soon as they came within range of his weapons.

And then he saw the Marines jetting between the two ships, each man with a vapor trail that copied and then surpassed the caudal appendage of his suit. They carried boarding axes, and the men in the lead were burdened with bulky cutting tools. He watched them come to what must have been a clangorous landing on the other vessel's shell plating and then, with an ease that was the result of many drills, disperse themselves to give the tool-bearers room to work. Metal molted, flared and exploded into glowing vapor. The ragged-edged disk that had been the outer valve of the airlock was pried up and clear and sent spinning away into emptiness. There was a slight delay as the inner door was attacked — and then the armored figures were vanishing rapidly into the holed ship.

From the speaker of the transceiver that was tuned to spacesuit frequency, Grimes heard the Major's voice, "Damn it all, Bronsky, that's a tool, not a weapon! Don't waste the charge!"

"He'd have got you, sir."

"Never mind that. I want that airtight door down!"

And there were other sounds — clanging noises, panting, a confused scuffling. There was a scream, a human scream.

In the control room the radar officer reported, "Twelve o'clock low. Two thousand miles. Reciprocal trajectory. Two missiles launched."

"Carter!" said Grimes.

"In hand, sir," replied that officer cheerfully. "So far."

"Recall the Marines," ordered Grimes. "Secure control room for action."

The armored shutters slid over the ports. Grimes wondered how much protection the lead sheathing

would give against lasers. If any. But if the Major and his men were caught between the two ships, their fate would be certain, unpleasantly so. And it was on the planetary side of the ship, the side from which the boarding party would return, that the exterior television scanner had been destroyed by the blast that had thrown the ship into Grimes's universe. That scanner had not been renewed. The Commodore could not tell whether or not the Major had obeyed his order; by the time that the Marines were out of the radar's blind spot they would almost be in *Freedom's* airlock.

Not that the radar was of much value now, at short range; *Freedom* was enveloped in a dense cloud of metallic motes. This would shield her from the enemy's laser, although

not from missiles. And the floating screens would render her own anti-missile laser ineffective. Missile-against-missile was all very well — but the other warship was operating from a base from which she could replenish her magazines.

"Reporting on board, sir." It was the Major's voice, coming from the intercom speaker. "With casualties — none serious — and prisoner."

Wasting no time, Grimes sized up the navigational situation. The ship would be on a safe trajectory if the reaction drive were brought into operation at once. He so ordered and then, after a short blast from the rockets, switched to Mannschenn Drive. He could sort out the ship's next destination later.

"Secure all for interstellar voyage," he ordered. Then, into the intercom microphone, "Take your prisoner to the wardroom, Major. We shall be along in a few minutes."

XIII

The prisoner, still with his guards, was in the wardroom when Grimes, Sonya and Mayhew got there. He was spacesuited still and manacled at wrists and ankles, and six Marines, stripped to the rags that were their uniform aboard this ship, were standing around him, apparently at ease but with their readiness to spring into action betrayed by a tenseness that was felt rather than seen.

But for something odd about the articulation of the legs at the knee, but for the unhuman eyes glaring redly out through the narrow transparency of the helmet, this could have been one of the Major's own men, still to be unsuited. And then Grimes noticed the tail. It was twitching inside its long, armored sheath.

"Mr. Mayhew?" asked Grimes.

"It . . . He's not human, sir." murmured the telepath. Grimes refrained from making any remarks about a blinding glimpse of the obvious. "But I can read . . . after a fashion. There is hate, and there is fear. A dreadful, paralyzing fear."

The fear, thought Grimes, *that any rational being will know when his maltreated slaves turn on him, gain the upper hand.*

"Strip him, sir?" asked the major.

"Yes," agreed Grimes. "Let's see what he really looks like."

"Brown! Gilmore! Get the armor off the prisoner."

"We'll have to take the irons off him first, sir," pointed out one of the men dubiously.

"There are six of you and only one of him. But if you want to be careful, unshackle his wrists first, then put the cuffs back on as soon as you have the upper half of his suit off."

"Very good, sir."

"I think that we should be careful," said Sonya.

"We are being careful, ma'am," snapped the Major.

Brown unclipped a key ring from his belt, found the right key and unlocked the handcuffs, cautiously, alert for any hostile action on the part of the prisoner. But the being still stood there quietly, only that twitching tail a warning of potential violence. Gilmore attended to the helmet fastenings, made a half turn and lifted the misshapen bowl of metal and plastic from the prisoner's head. All of the humans stared at the face so revealed—the gray-furred visage with the thin lips crinkled to display the sharp, yellow teeth, the pointed, bewhiskered snout, the red eyes, the huge, circular flaps that were the ears. The thing snarled shrilly, wordlessly. And there was the stink of it, vaguely familiar, nauseating.

Gilmore, expertly detached air tanks and fittings, peeled the suit down to the captive's waist while Brown, whose full beard could not conceal his unease, pulled the sleeves down from the long, thin arms, over the clawlike hands. The sharp click as the handcuffs were replaced coincided with his faint sigh of relief.

And when we start the interrogation, Grimes was wondering, *shall we be up against the name, rank and serial number convention?*

Gilmore called another man to help him who, after Brown had freed the prisoner's ankles, lifted one foot after the other from its magnetic contact with the deck plating. Gilmore continued stripping the captive, seemed to be getting into trouble as he tried to peel the armor from the scaly tail. He muttered something about not having enlisted to be a valet to bleeding snakes.

Yes, it was like a snake, that tail. It was like a snake, and it whipped up suddenly, caught Gilmore about the throat and tightened, so fast that the strangling man could emit no more than a frightened grunt. And the manacled hands jerked up and then swept down violently, an dhad it not been for Brown's shaggy mop of hair he would have died. And a clawed foot ripped one of the other men from throat to navel.

It was all so fast and so vicious. The being was fighting with a ferocity that was undiminished by the wounds that he was receiving and was raging through the compartment like a tornado, a flesh and blood tornado with claws and teeth.

Somebody had used his knife to slash Gilmore free, but he was out of the fight, as were Brown and the Marine with the ripped torso. Globules of blood from the ragged gash mingled with the blood that spouted

from the stump of the severed tail, were dispersed by the violently agitated air to form a fine, sickening mist.

Knives were out now. Grimes shouted that he wanted the prisoner alive, not dead. Knives were out—but the talented feet of the captive were as effective as the human weapons, and the manacled hands were a bone-crushing club.

Even so—"Be careful!" Grimes was shouting. "Careful! Don't kill him!"

But Sonya was there, and she, of all those present, had come prepared for what was now happening. She had produced from somewhere in her scanty rags a tiny pistol. No more than a toy it looked. But it was no toy, and it fired anesthetic darts. She hovered on the outskirts of the fight, her weapon ready, waiting for the chance to use it. Once she fired — and the needle-pointed projectile sank into glistening human skin, not matted fur. Yet another of the Marines was out of action.

She had to get closer to be sure of hitting her target—the target that was at the center of a milling mass of arms and legs, human and non-human. She had to get closer. And as she approached, sliding her magnetized sandals over the deck in a deceptively rapid slouch, the being broke free of his captors, taking advantage of the sudden lapse into unconsciousness of the man whom Sonya had hit with her first shot.

She did not make a second one. The flailing arm of one of the men hit her gun hand, knocking the weapon from her grasp. And then the blood-streaked horror was on her, and the talons of one foot were hooked into the waistband of her rags and the other was upraised for a disembowelling stroke.

Without thinking, without consciously remembering all that he had been taught, Grimes threw his knife. But the lessons had been good ones, and in this one branch of personal combat, the Commodore had been an apt pupil. Blood spurted from a severed caratoid artery, and the claws—bloody themselves, but with human blood—did no more, in their last spasmodic twitch, than inflict a shallow scratch between the woman's breasts.

Grimes ran to his wife, but she pushed him away, saying, "Don't mind me. There are others more badly hurt."

And Mayhew was trying to say something to him, was babbling about his dead amplifier, Lassie, about her last and lethal dream.

It made sense, but it had made sense to Grimes before the telepath volunteered his explanation. The Commodore had recognized the nature of the prisoner, in spite of the size of the being, in spite of the cranial development. In his younger days he had boarded a pest-ridden grain ship. He had recalled the vermin that he had seen in the traps set by the ship's crew, and the stench of them.

And he remembered the old adage—that a cornered rat will fight.

Freedom was falling down the dark dimensions, so far with no

course set, so far with her destination undecided.

In Grimes's daycabin there was a meeting of the senior officers of the expedition to discuss what had already been learned, to make some sort of decision on what was to be done next. The final decision would rest with the Commodore. But he had learned, painfully, many years ago, that it is better to ask some of the questions than to know all the answers.

The Major was telling his story again. "It wasn't all that hard to get into the ship, sir. But they were waiting for us, in spacesuits, in the airlock vestibule. Some of them had pistols. As you know; we brought one back."

"Yes," said Grimes. "I've seen it. A not very effective laser weapon. I think that our workshop can turn out copies—with improvements."

"As you say, sir, not very effective. Luckily for us. And I gained the impression that they were rather scared of using them. Possibly it was the fear of doing damage to their own ship." He permitted himself a slight sneer. "Typical, I suppose, of merchant spacemen."

"It's easy to see, Major, that you've never had to write to Head Office to explain a half-inch dent in the shell plating. But carry on."

"There were hordes of them, sir, literally choking the alleyways. We tried to cut and burn and bludgeon our way through them, to get to the control room, and if you hadn't recalled us we'd have done so."

"If I hadn't recalled you, you'd be prisoners now—or dead. And better off dead at that. But tell me, were you able to notice anything about the ship herself?"

"We were rather too busy, sir. Of course, if we'd been properly equipped, we'd have had at least two cameras As it was."

"I know. I know. You had nothing but spacesuits over your birthday suits. But surely you gained some sort of impression."

"Just a ship, sir. All Alleyways, airtight doors and all the rest of it. Oh, yes. Fluorescent strips instead of luminescent panels. Old-fashioned."

"Sonya?"

"Sounds like a mercantile version of this wagon, John. Or like a specimen of Rim Runners' vintage tonnage."

"Don't be catty. And you, Doctor?"

"So far," admitted the medical officer, "I've made only a superficial examination. But I'd say that our late prisoner was an Earth-type mammal. Male. Early middle age."

"And what species?"

"I don't know, Commodore. If we had thought to bring with us some laboratory white rats I could have run a comparison of tissues."

"In other words—you smell a rat. Just as we all do." He was speaking softly now. "Ever since the first ship, rats have been stowaways—in surface vessels, in aircraft, in spaceships. Carried to that planet in shipments of seed grain, they became a major pest on Mars. But, so far, we have been lucky. There have

been mutations, but never a mutation that has become a real menace to ourselves."

"Never?" asked Sonya with an arching of eyebrows.

"Never, so far as we know, in *our* Universe."

"But in this one—"

"Too bloody right they are," put in Williams. "Well, we know what's cookin' now, Skipper. We still have one nuclear thunderflash in our stores. I vote that we use it and blow ourselves back to where we came from."

"I wish it were as simple as all that, Commander," Grimes told him. "When we blew ourselves here, the chances were that the ship would be returned to her own Space-Time. When we attempt to reverse the process there will be, I suppose, a certain tendency for ourselves and the machinery and materials that we have installed to be sent back to our own Universe. But no more than a tendency. We shall be liable to find ourselves anywhere. Or anywhen." He paused. "Not that it really worries any of us. We're all volunteers, with no close ties left behind us. But we have a job to do, and I suggest that we at least try to do it before attempting a return."

"Then what do we try to do, Skip?" demanded Williams.

"We've made a start, Commander. We know now what we're up against. Intelligent, oversized rats who've enslaved Man at least on the Rim Worlds. Tell me, Sonya, you know more of the workings of the minds of Federation top brass, both military and political, than I do. Suppose this state of affairs had come to pass in our Universe? A hundred years ago, say, when the Rim Worlds were no more than a cluster of distant colonies always annoying the Federation by demanding independence?"

She laughed bitterly. "As you know, there are planets whose humanoid inhabitants are subjects of the Shaara Empire. And on some of those worlds the mammalian slaves of the ruling arthropods are more than merely humanoid. They're human, descendants of ships' crews and passengers cast away in the days of the Ehrenhaft Drive vessels, the so-called gauss-jammers. But we'd never dream of going to war against the Shaara to liberate our own flesh and blood. It just wouldn't be . . . expedient. And I guess that in this space-time it just wouldn't be expedient to go to war against these mutated rats. Too, there'll be quite a large body of opinion that will say that the human Rim Worlders should be left to stew in their own juice."

"So you, our representative of the Federation's armed forces, feel that we should accomplish nothing by making for Earth to tell our story."

"Not only should we accomplish nothing, but in all probability our ship would be confiscated and taken apart to see what makes her tick insofar as dimension hopping is concerned. And it would take us all a couple of lifetimes to break free of the red tape with which we should be festooned."

"In other words, if we want anything done we have to do it."

"Yes."

"Then do we want anything done?" asked Grimes quietly.

He was almost frightened by the reaction provoked by his question. It seemed that not only would he have a mutiny on his hands, but also a divorce. Everybody was talking at once, loudly and indignantly.

There was the Doctor's high-pitched bray—"And it was *human* flesh in the tissue culture vats!" and Williams' roar, "You saw the bodies of the sheilas in this ship, an' the scars on 'em!" and the Major's curt voice, "The Marine Corps will carry on even if the Navy rats!" Then Sonya, icily calm, "I thought that the old-fashioned virtues still survived on the Rim. I must have been mistaken."

"Quiet!" said Grimes. "Quiet!" he shouted. He grinned at his officers. "All right. You've made your sentiments quite clear, and I'm pleased that you have. The late owners of this ship were intelligent beings—but that does not entitle them to treat other intelligent beings as their slaves. Sonya mentioned the human slaves on the worlds of the Shaara Empire—but those so-called slaves are far better off than many a free peasant on Federation worlds. They're not maltreated. And they're not livestock. But we've seen the bodies of the men, women and children who died aboard this ship. And if we can make their deaths not in vain—"

Sonya flashed him an apologetic smile. "But how?" she asked.

"That's the question." He turned to Mayhew. He said, "You've been maintaining a listening watch. Do these people have psionic radio?"

"I'm afraid they do, sir," the telepath told him unhappily. "I'm afraid they do. And."

"Out with it, man."

"They use amplifiers, just as we do. But."

"But what?"

"They aren't dogs' brains. They're human ones."

And that was even worse than the discovery of the human flesh in the tissue culture vats had been.

TO BE CONCLUDED

The Face of the Deep

by FRED SABERHAGEN

The star was enormous and deadly. He was its captive — and could never escape!

After five minutes had gone by with no apparent change in his situation, Karlsen realized that he might be going to live for a while yet. And as soon as this happened, as soon as his mind dared open its eyes again, so to speak, he began to see the depths of space around him and what they held.

Not that there was much else for him to see, riding as he was in a crystalline bubble of a launch about twelve feet in diameter. The fortunes of war had dropped him here, halfway down the steepest gravitational hill in the known universe.

At the unseeable bottom of this hill lay a sun so massive that not a quantum of light could escape it with a visible wavelength. In less than a minute he and his raindrop of a boat had fallen here, some unmeasurable distance out of normal space, trying to escape an enemy which had remained in close pursuit. Karlsen was a religious man, and he had spent that falling minute in prayer, achieving something like calm, considering himself already dead.

But after that minute, he was suddenly no longer falling. He seemed to have entered an orbit, an orbit that no man had ever traveled before, amid sights no eyes had ever seen.

He rode above a thunderstorm at war with a sunset — a ceaseless, soundless turmoil of fantastic clouds that filled half the sky as a nearby planet would. But this mass was immeasurably bigger than any planet, bigger in fact than most giant stars. Its core and its cause, held forever

beyond human sight by its own power, was a hypermassive sun a billion times the weight of Sol.

The clouds were interstellar dust, swept up by the pull of the hypermass, drawn to fall tumbling and churning into it. The clouds as they fell built up electrical static which was discharged in almost continous lightning. Karlsen saw as blue-white the nearer flashes and those ahead of him as he rode. But most of the flashes, like most of the clouds, were far below him, and so most of his light was sullen-red, wearied by climbing just a section of this gravity-cliff. Karlsen's little bubbleship had artificial gravity of its own and kept turning itself so its deck was down, so Karlsen saw the red light below him through the translucent deck, flaring up between his space-booted feet. He sat in the one massive chair which was fixed in the center of the bubble and which contained the boat's controls and life-support machinery. Below the deck were one or two other opaque objects, one of these a small but powerful space-warping engine. All else around Karlsen was clear glass, holding in air, holding out radiation, but leaving his eyes and soul naked to the deeps of space around him.

He took a full breath now and tried his engine, tried to lift himself up out of here. As he had expected, nothing happened at full drive. He might as well have been working bicycle pedals.

Even a slight change in his orbit would have been immediately visible to him, for his bubble was somehow locked in position within a narrow belt of rocks and dust that stretched like a threat to girdle the vastness below him. Before the thread could bend perceptibly on its great circle it lost its identity in distance, merging with other threads into a thicker strand. This in turn was braided with other strands into a heavier belt, and so on, order above order of size, until at last (a hundred thousand miles ahead? A million?) the first bending of the great ring-pattern was perceptible; and then the arc, rainbow-colored at that point by lightning, deepened swiftly, plunging out of sight below the terrible horizon of the hypermass's shroud of dust. The fantastic cloud-shapes of that horizon, which Karlsen knew must be millions of miles from him, grew closer while he looked at them. Such was the speed of his orbit.

His orbit, he guessed, must be roughly the size of Earth's path around Sol. But judging by the way the surface of clouds was turning beneath him, he would complete a full circuit every fifteen minutes or so. This was madness, to outspeed light in normal space — but then of course space was not normal here. It could not be. These insane orbiting threads of dust and rock suggested that here gravity had formed itself into lines of force, like magnetism.

The orbiting threads of debris above Karlsen's traveled less rapidly than his. In the nearer threads below him, he could distinguish individual rocks, passing him up like the teeth of a buzzsaw. His mind re-

coiled from those teeth, from the sheer grandeur of speed and distance and size.

He sat in his chair looking up at the stars. Distantly he wondered if he might be growing younger, moving backward in the time of the universe from which he had fallen . . . he was no professional mathematician or physicist, but he thought not. That was one trick the universe could not pull, even here. But the chances were that in this orbit he was aging quite slowly compared with the rest of the human race.

He realized that he was huddling in his chair like an awed child, his fingers cramping painfully inside their gauntlets with the intensity of his grip on the chair arms. He forced himself to try to relax, to begin thinking of routine matters. He had survived worse things than this display of nature, if none more awful.

He had air and water and food enough, and power to keep recycling them as long as necessary. His engine was good for that much.

He studied the line of force, or whatever it was, that held him prisoner. The larger rocks within it, some of which approached his bubble in size, seemed never to change their relative positions. But smaller chunks drifted with some freedom backward and forward, at very low velocities.

He got up from his chair and turned. A single step to the rear brought him to the curve of glass. He looked out, trying to spot his enemy.

Sure enough, following half a mile behind him, caught in the same string of space-debris, was the berserker-ship whose pursuit had driven him here. It was a machine fastened on one purpose — Karlsen's death. Its scanners would be fixed on his bubble now and were probably able to see him moving. If it could get at him it would do so. The berserker-computers would waste no time in awed contemplation of the scenery, that much was certain.

His bubbleboat was unarmed, but the berserker wasn't. Why wasn't it firing?

As if to answer his thought the flare of a beam-weapon struck out from the launch. But the beam looked odd and silvery, and it plowed only ten feet or so among exploding rocks and dust before fizzling away like a comic firework. It left added dust in a cloud that seemed to be thickening around the berserker. Probably the machine had kept on firing at him all along, but this weird space would not tolerate energy weapons. Missiles, then?

Yes, missiles. He watched the berserker launch one. The cylinder made one fiery dart in his direction, then disappeared. Where had it gone? Fallen in toward the hypermass? At invisible speed, if so.

As soon as he spotted the first flare of another missile, Karlsen on a hunch turned his eyes quickly downward. He saw an instant spark and puff in the next lower line of force, a tooth knocked out of the buzzsaw. The puff where the missile had struck flew ahead at insane speed, passing out of Karlsen's sight almost at once. His eyes were drawn

after it, and he realized he had been watching the berserker-ship not with fear but with something like relief, as a distraction from facing . . . all this.

"Ah, God," he said aloud, looking ahead. It was a prayer, not an oath. Far beyond the slow-churning infinite horizon, there were monstrous dragon-head clouds rearing up. Against the blackness of space their mother-of-pearl heads seemed to be formed by matter materializing out of nothingness to plunge toward the hypermass. Soon the dragons' necks rose over the edge of the world, rainbow purls of matter, dripping and falling with unreal speed down into the hypermass. And then the dragon-bodies, clouds throbbing with blue-white lightning above the red bowels of hell.

The vast ring, in which Karlsen's thread of rocks was one component, raced like a circular sawblade toward the prominences. As they came flying over the horizon they rose up far beyond Karlsen's level. They twisted and reared like mad horses. They must be bigger than planets, he thought, yes, bigger than a thousand Earths or Esteels. The whirling band he rode was going to be crushed between them — and then he saw that even as they passed they were still enormously distant from him on either side. .

Still standing, Karlsen let his eyes close for a time. If men ever dared to pray, if they ever dared even to think of a Creator of the universe, it was only because their tiny minds had never been able to visualize a thousandth part . . . a millionth part . . . there were no words, no concepts, for sights like these.

And what of men who believed only in themselves, or in nothing? What might it do to them to look nakedly at such odds as these?

Karlsen opened his eyes. In his belief a single human was more important to the Creator than any sun of whatever size. He made himself watch the scenery. He determined to master this almost superstitious awe.

But he had to brace himself again when he noticed for the first time how the stars were behaving. They were all blue-white needles, the wavefronts of their light jammed together in a stampede over the cliff of gravity. And his speed was such that he saw some stars moving slightly in parallax shifts. He could have depth perception in light-years, if his mind could stretch that far.

He stepped back to his chair, sat down and fastened himself in. He wanted to dig himself a tunnel, down into the very core of a huge planet, where he could hide . . . but what were even the biggest planets? Poor lost specks, hardly bigger than this bubble.

Here he faced no ordinary spaceman's view of infinity. Here there was a terrible *perspective,* starting with rocks just outside the glass and drawing the mind on and out, rock by rock and line by line, step by inescapable step, on and on and on —

All right. At least this was something to fight against, and fighting something was better than sitting

here and rotting. To begin with, a little routine. He drank some water, which tasted very good, and made himself eat a bite of food. He was going to be around for a while yet.

Now for the little job of getting used to the scenery without going mad. He faced in the direction of his bubble's flight.

Half a dozen meters ahead of him the first large rock, massive as the bodies of a dozen men, hung steadily in the orbit-line of force. With his mind he weighed this rock and measured it and then moved on to the next notable chunk, a pebble's throw further. The rocks were each smaller than his bubble, and he could follow the string of them on and on, until it was swallowed in the converging pattern of forcelines that at last bent around the hypermass, defining the full terror of distance.

His mind hanging by its fingertips swayed out along the intervals of grandeur . . . like a baby monkey blinking in jungle sunlight, he thought. Like an infant climber who had been terrified by the size of trees and vines, who now saw them for the first time as a network of roads that could be mastered.

Now he dared to let his eyes grab hard at that buzzsaw rim of the next inner circle of hurtling rocks, to let his mind ride it out and away. Now he dared to watch the stars shifting with his movement, to see with the depth perception of a plant.

He had been through a lot even before his ship had fallen here, and sleep overtook him. Suddenly loud noises were waking him up.

He came full awake with a start of fear. The berserker was not helpless after all. Two of its man-sized machines were outside his glassy door, working on it. Karlsen reached automatically for his handgun. The little weapon was not going to do him much good, but he waited, holding it ready. There was nothing else to do.

Something was strange in the appearance of the deadly robots outside; they were silvered with a gleaming coating. It looked like frost except that it formed only on their forward surfaces and streamed away from them toward the rear in little fringes and tails, like an artist's speed-lines made solid. The figures were solid enough. Their hammer-blows at his door . . . but wait. His fragile door was not being forced. The metal killers outside were tangled and slowed in the silvery webbing with which this mad rushing space had draped them. The stuff damped their laser beams, when they tried to burn their way in. It muffled the explosive they set off.

When they had tried everything they departed, pushing themselves from rock to rock back toward their metal mother, wearing their white flaming surfaces like hoods of defeat.

He yelled relieving insults after them. He thought of opening his door and firing his pistol after them. He wore a spacesuit, and if they could open the door of the berserkership from inside he should be able to open this one. But he decided that it would be a waste of ammunition to even try.

Some deep part of his mind had concluded that it was better for him, in his present situation, not to think about Time. He saw no reason to argue with this decision, and so he soon lost track of hours and days — weeks?

He exercised and shaved, he ate and drank and eliminated. The boat's recycling systems worked very well. He happened to have aboard a device that would let him freeze himself into suspended animation — but no thanks, at least not yet. The possibility of rescue was in his thoughts, mixing hope with his fears of Time.

He knew that on the day he fell down here there was no ship built capable of coming after him and pulling him out. But ships were always being improved. Suppose he could hang on here for a few weeks, or months, while a few years passed outside. He knew he was important to many important people, and that an attempt to save him would be made if it looked at all possible.

From being awed, almost paralyzed by his surroundings, he passed through a stage of exaltation and then quickly reached — boredom. The mind had its own business and turned itself away from all these eternal blazing miracles. He slept a good deal.

In a dream he saw himself standing alone in space. He viewed himself at the distance where the human figure dwindles almost to a speck in the gaze of the unaided human eye. With an almost invisible arm, himself-in-the-distance waved good-by and then went walking away, headed out toward the blue-white stars. The striding leg movements were at first barely perceptible and then became nothing at all as the figure dwindled, losing existence against the face of the deep . . .

With a yell he woke up. A spaceboat had nudged against his crystal hull and was now bobbing a few feet away. It was a solid metal ovoid, of a model he recognized, and the numbers and letters on its hull were familiar to him.

He had made it. He had hung on. The ordeal was over.

The little hatch of the rescue boat opened, and two suited figures emerged, one after the other, from its sheltered interior. At once these figures became silver-blurred as the berserker's machines had been, but these men's features were visible through their faceplates, their eyes looking straight at Karlsen. They smiled in steady encouragement, never taking their eyes from his.

Not for an instant.

They rapped on his door and kept smiling while he put on his spacesuit. But he made no move to let them in; instead he drew his gun.

They frowned. Inside their helmets their mouths formed words: Open up! He flipped on his radio, but if they were sending, nothing was coming through in this space. They kept on gazing steadily at him.

Wait, he signaled with an upraised hand. He got a slate and stylus from his chair and wrote them a message.

LOOK AROUND AT THE SCENERY FOR A WHILE.

He was sane, but maybe they thought him mad. As if to humor

him, they began to look around them. A new set of dragons'-head prominences were rising ahead, beyond the stormy horizon at the rim of the world. The frowning men looked ahead of them at dragons, around them at buzzsaw rainbow whirls of stone; they looked down into the sullen depths of the inferno, they looked up at the stars' poisonous blue-white spears sliding visibly over the void.

Then both of them, still frowning uncomprehendingly, looked right back at Karlsen.

He sat in his chair, holding his drawn gun and waiting, having no more to say. He knew that the berserker-ship would have had boats aboard and that it could build its killing machines into rough likenesses of men. These were almost good enough to fool him.

The figures outside produced a slate of their own from somewhere.

WE TOOK BERS. FROM BEHIND. ALL OK & SAFE. COME OUT.

He looked back. The cloud of dust raised by the berserker's own useless weapons had settled around it, hiding it and all the force-line behind it from Karlsen's view. Oh, if only he could believe that these were men . . .

They gestured energetically and lettered some more.

SHIP WAITING BACK THERE BEHIND DUST. SHE'S TOO BIG TO HOLD THIS LEVEL LONG.

And again:

KARLSEN, COME WITH US!!! THIS YOUR *ONLY* CHANCE!

He didn't dare read any more of their messages for fear he would believe them, rush out into their metal arms and be torn apart. He closed his eyes and prayed.

After a long time he opened his eyes again. His visitors and their boat were gone.

Not long afterward — as time seemed to him — there were flashes of light from inside the dust cloud surrounding the berserker. A fight to which someone had brought weapons that would work in this space? Or another attempt to trick him? He would see.

He was watching alertly as another rescue boat, much like the first, inched its way out of the dust-cloud toward him. It drew alongside and stopped. Two more spacesuited figures got out and began to wear silver drapery.

This time he had his sign ready.

LOOK AROUND AT THE SCENERY FOR A WHILE.

As if to humor him, they began to look around them. Maybe they thought him mad, but he was sane. After about a minute they still hadn't turned back to him — one's face looked up and out at the unbelievable stars, while the other slowly swiveled his neck, watching a dragon's head go by. Gradually their bodies became congealed in awe and terror, clinging to his glass wall.

After taking half a minute more to check his own helm and suit, Karlsen opened his door.

"Welcome, *men*," he said, over his helmet radio. He had to help one of them aboard the rescue boat. But they made it. END

THE EMPTY MAN

by GARDNER RAYMOND DOZOIS

Illustrated by BURNS

He was the deadliest weapon in the whole galaxy. He could conquer anything but himself!

I

It loomed huge and ugly on the intersection of the Street of Fools, the fitful yellow glow that streamed from its crescent windows straining vainly to pierce the moonless gloom of the planet's long night.

Inside, it was both brighter and darker. Two large lanterns, hung at either end of the hall, provided the illumination, a subdued blue tinge that wavered eerily across the ornate shields and statuary scattered about the tavern.

The darkness also was man-made. A nearly tangible aura of quiet despair radiated from the sprawling bar at the center of the building and the dozens of tiny tables that surrounded this nucleus. Here were mingled men from nearly every world in the Olympian Protectorate, although the natives, stocky, sallow-skinned individuals derived from Semitic stock, were in the majority.

Some of the tavern's patrons, mostly Spacers from Hephaestus and Poseidon, were either dead drunk or working their way toward that happy state with a dexterity marvelous to behold. The natives, however, had far too many troubles to drown them in alcohol successfully. They hunched morosely over their drinks, the look of stolid resignation on their faces seldom changing except when a patrol of Keres checked in on their nightly rounds.

The only sounds were the whine of the wind, the low drone of whispered conversation and an occasional roar of displaced air as a Far Traveler knifed down from space toward the starport in the adjacent High Town. The tavern was filled with the reek of human sweat and the absence of laughter.

Apart from the others, nestled against the base of one of the great supporting pillars, sat the Empty Man. He was a tall, dark man with a face as unshakeably impassive as carven granite. For over an hour he had neither spoken nor moved, eyes fixed intently on nothing and seeming to peer deep, deep into strange worlds where ordinary humans never could, or should, venture.

The other people in the tavern shunned him with a savage distaste that came very close to fear. There was something about the grim, brooding figure that awakened the instinctive hatred of the alien that slumbers in every man. Somehow they could sense, with the near-atrophied senses bequeathed them by their primeval ancestors, that here was the unnatural, the dangerous. Yet, there was fascination mixed with the fear, the insatiable curiosity of homo sapiens toward anything out of the ordinary.

"Oh, he's a strange one, he is," they whispered. "I'd stay well away from him, I would, if I were you."

Jhon Charlton, unaware of the stir he was causing, swirled the murky liquid in his glass and drank.

His thoughts, as usual, were dark. Even though he knew it was impossible, he was contemplating suicide, as he had every evening for three years since the Day. He had discarded drowning, disembowelling and disintegration and was considering the possibility of drinking himself to death when the first warning tingle shuddered through his frame.

Instantly, his thoughts were scattered. His every muscle became indiscernibly tense. He knew the sign well. It indicated that the being he had played host to for three years, that shared his mind and body and, displaying both a sense of irony and a frightening knowledge of human folkways, chose to call itself Moros, was awakening.

Even as he waited, as quiveringly taut as a drawn bowstring, some detached portion of his mind was searching for the proper tag to hang upon his relationship with his uninvited companion. Not symbiosis; neither performed any vital or helpful function for the other. Not parasitic either; the creature didn't take any nourishment or energy from him, if indeed it needed any at all.

Moros spoke. It was something beyond the telepathy that humans knew, a voice, like the muted music of a thousand woodwinds, singing softly in his head. In a split second, the blink of an eye, an entire mental conversation was carried out.

"You were wrong, Jhon," the alien's 'voice' was dry and biting. "In a way, our relationship could be called symbiosis. I supply you with something very valuable, something most men haven't got: a conscience. As for your part of the bargain—well, some day I will indicate how you will be able to repay me."

"Go to hell."

"Come, Jhon. You are a most fortunate man, and you should be a most grateful one. I fear you are being unfair."

"Damn you! I should be grateful, you say? For what? Before you came, I was a whole man. I enjoyed using my talents when I was on a mission. Now, nothing! No emotions. No fear or exultation, no discomfort or pleasure—nothing! Why won't you leave me alone? Give me back my soul!"

"Not yet."

"Damn you!"

"Your vocabulary is neither varied nor erudite. And Jhon—you still don't feel the slightest twinge of guilt over what you've done, do you?"

"Why should I? Leave me alone."

"Not yet. Some day perhaps."

"Go to hell."

Moros lapsed into silence, and Charlton fell to studying his fellow patrons.

The aura of hopeless dejection about them only served to heighten his own sense of gloom and futility. Looking out over the slouching forms of the natives, he called up nostalgic memories of past missions before the Day. He could feel the raw energy that was his to control pulsating through every fiber of his being, and he knew that all he had to do was concentrate, and that energy would surge forth—to blast, to kill, to destroy—

"How does it feel to be God, Jhon?"

"Damn you!" Charlton screamed aloud, jumping to his feet, his fists knotted and ready to smash, to pulp his enemy . . . .

Slowly he became aware of the dozens of hostile eyes trained unblinkingly upon him from every corner of the room. Mumbling something unintelligible, he slumped back into his seat. The bartender tapped his forehead significantly, and the rest of the customers, nodding sagely in agreement, turned away.

"The last of the Immortals. The last of the Gods, that's you Jhon. First there was Osiris, Odin, Zeus—and now, Charlton, the almighty. Worship held on Tuesdays and Thursdays. In case of rain—"

"Shut up! Just shut up! Where in hell is that contact? Blast him, he was supposed to have arrived five minutes ago."

Whoom! With a tremendous, splintering crash, the tavern door was torn off its hinges and flung clattering across the floor. A squad of Keres dashed into the room.

For an endless moment, a sickening silence hung like a pall over the tavern. The captain, a chunky, crew-cut man in a blue-black uniform with the emblem of the High Protector of Apollon emblazoned on his shoulder, gestured with a laser pistol. "You are all under arrest and will be held for interrogation and extensive physical examination!"

Charlton reacted instinctively. His mind groped out and extinguished the lanterns. The tavern was plunged into total darkness. Someone shouted in surprise; a ruby beam of pure energy stabbed through the gloom. Charlton rose and slipped toward the back wall.

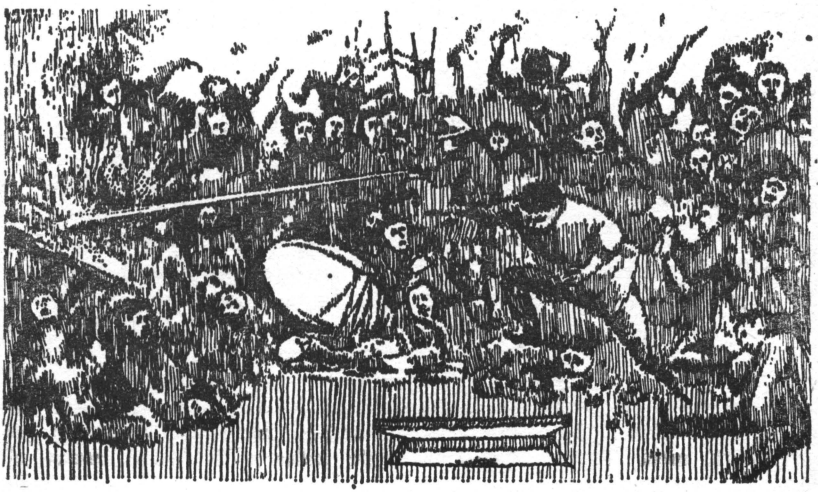
Under cover of darkness, the hatred of the townsmen for the Keres, long suppressed by fear, finally erupted into violence. Charlton heard the meaty thud of a fist slamming heavily into flesh; a scream of agony; another. An energy bolt sizzled by. Charlton choked on the stench of burning ions and saw a table disappear in a flash of fire. Within seconds, a full-fledged riot was raging through the darkened tavern.

Charlton flattened himself against the wall, listening to the din of shouts and smashing furniture. Trained reflex patterns had taken him this far, but now his mind was in control again, and he wondered morosely if it was worth the effort to try to escape.

"Come, Jhon," Moros's "voice" was strangely gentle. "You know I cannot allow you to kill yourself, however indirectly. Dispel the darkness immediately."

Charlton sighed resignedly, drew upon his reserves of energy and shifted his vision into the infrared. For the Empty Man, the world lit up.

The townspeople and the Keres,



most of whom were afraid to fire lest they hit their comrades, were locked in desperate combat right in front of the door. Charlton glanced at the tiny crescent windows and shook his head. "I'll have to blast my way out."

"Jhon! If you pull any of your little tricks in here, you'll wipe out half the block!"

"It can't be helped. If you think I'm going to let myself get fried because of some damn aliens' scruples—"

A tiny sliver of light appeared in the floor on the right. Slowly, a square piece of the floor about four feet wide swung up and to the side. Light poured up from below. A head poked itself cautiously over the lip of the opening and urgently cried a certain code word. Charlton replied in kind. The man scrambled nimbly up and seized Charlton by the arm. "Charlton? Jhon Charlton?"

"Yes."

"Quick man, into the tunnel. God, what a bloody foul-up!"

But as Charlton lowered himself through the trapdoor, he knew it was more than an ordinary snafu.

Somewhere there was a traitor.

II

It took them five minutes to navigate the tunnel. At last fresh, cold air lashed their faces, and they found themselves in the Street of Fools.

Charlton got his first good look at his companions. They were ragged, dark men. They radiated a quiet kind of fanaticism, the revolutionary fervor that at one time or another sweeps every race of man. No one spoke.

Apollon's night was moonless; the only illumination was cold starlight. By this wan glow, Charlton saw long knives glimmering wickedly in the hands of the rebels. He smiled. Overhead, a Far Traveler, only a tiny speck in the distance, drifted slowly and silently down toward the Starport.

The sound of running feet reverberated through the hush of the deserted street. Charlton and the rebels shrank back into the shadows as a squad of Keres, weapons at the ready, double-timed past and disappeared into the tavern.

The leader of the rebels glared at Charlton. "The tavern will be under new management tomorrow," he muttered grimly. "All those people —" He shook his head slowly. "Mister, I sure as hell hope you're worth it."

He spun on his heel and stalked away, followed by the others. As he walked, Charlton tapped his energy reserves, concentrated and swiftly scanned the minds of his companions.

The little one on the left was a psychopathic killer. He radiated blood lust so strongly that even non-Espers could sense it. His mind was a procession of gory memories and even grislier desires; the latest tableau involved his eager anticipation of the day when he would plunge his long knife deep into Charlton's stomach. Evidently the little killer didn't think much of

Charlton's alleged prowess. The need to prove he could "take" the outworlder burned intently within him. I'll have trouble with him before all this is over, the Empty Man reflected.

The thoughts of the other three men were grimly centered on the business at hand, but Charlton could catch traces of indecision concerning his worth in their minds also.

He grinned wryly. None of his companions suspected that they were doubting the ability of the most dangerous living creature in the known galaxy.

They walked on. Around them echoed the unnatural silence that settled on High Delphi like a cloak every evening after sunset. The men ignored each other, every member of the party wrapped introspectively in their own mediations. Charlton probed psionically at the four fetally-curled cores of desires, fears and aspirations that were human egos, searching out the personality roots of others with desperate urgency to hide from himself his intense fear of turning his strange gift inward.

Buried deep in the brain of the Empty Man was an area posted: DANGER! KEEP OUT! An area filled with knowledge, self-knowledge fatal to his present personality. Personality is self-delusion, internal censorship. Somewhere in every man is a tiny portion of the subconscious that remembers the minutest detail of existence and knows all the sets of values and motivations that go together to make up a human ego. The mind acts as its own censor to fence off this part of itself, for knowledge of the causes of a man's secret motivations often destroys the motivations themselves and so dissolves the tenuous pattern of automatic responses known as personality.

If another Esper had been present to rifle through Charlton's innermost thoughts as he himself was delving into the rebel's, he would have found in this forbidden area a frightening conglomeration of dark symbols and repressed memories. Chief among these were two carefully avoided trains of thought that continued to haunt him in recurrent nightmares.

One was the painful recollection of the ten-year period of scientific experimentation that had turned him into the inhuman juggernaut of destruction he now was and his strong, but deeply buried, feelings of guilt over his wild years when he used his godlike power ruthlessly to break all known laws and moralities. The second was the powerful psychic shock he had received at the Cube of Darkness on Milhar II, where he had been possessed by the alien doorwarder Moros, as punishment for his accidental slaughter of an immense number of Moros's race during an attempt to unravel the enigma of the Cube. His subconscious pulsed with dangerous knowledge, like a gigantic cancer or boil on the verge of erupting and sending a flood of contamination into his conscious mind, held back only by the power of his iron will.

And that will was fraying.

The leader of the rebels signaled

a halt. "Patrol of Keres stationed ahead." he whispered. "They're named after the oldtime god of violent death, y'know, and for good reason. If they should catch us—" He drew his forefinger meaningfully across his throat. "Death by laser is a bad way to go." He glanced sidelong at Charlton.

The Empty Man smiled. This was a test. Obviously the rebels had methods of avoiding the Keres, and Charlton was supposed to prove his mettle by figuring one of them out himself. But he would go them one better.

"Stay here. I'll take care of them," Charlton whispered and slipped away before the flabbergasted rebel could protest or try to stop him.

The rebel captain, whitefaced and trembling, took a deep, shuddering breath. "He's crazy. By the Holy Flame! He'll get us all killed!"

Silent as a specter, Jhon Charlton flitted through the shadowy streets of the High Town. Ahead, in the Plaza of Madmen, ten Keres were stationed. They huddled around a small solar heater, shivering in the cold of Apollon's long night. White jets of vapor curled from every mouth; they stamped their feet and cursed softly as they tried to keep their fingers from sticking to the frigid metal of their weapons. A young boy shifted the rifle in his hands and turned his head in order to glance look at the other side of the Plaza.

Before he could turn it back, something streaked from the cover of a building's shadow.

Death walked abroad in the Plaza of Madmen. Charlton whipped through the Keres like a living blur. He smashed and hammered them down, hurled them to the ground with lethal force, stamped them, broke them in half, crushed them. It was like trying to fight some grim, tireless machine; the Keres had no more chance than a litter of kittens facing a maddened tiger. Bones snapped under Charlton's hands; flesh tore and blood flowed.

Within twenty seconds, ten bodies were strewn all over the Plaza, and no shot had been fired. Charlton hadn't even given them time to scream.

The Empty Man stood alone among the carnage. And yearned savagely for death.

All through the bloody slaughter, he had felt nothing—neither revulsion nor delight. He was still a shell, a caricature of a man. The temperature of his blood had not even risen one degree.

"Too easy, wasn't it? Like a boy squashing ants."

"Shut up, damn you!"

Slowly, reluctantly, the rebel band approached. Awe was written now on every face, and fear and revulsion were in every mind, except the little killer's; hate and fierce jealousy smoldered like a hot ember in his twisted brain. Repressing a surge of nausea, the rebel captain led them across the Plaza and into the tangled maze of streets on the far side. Charlton noted that his companions were careful to keep a healthy distance away, zealously

avoiding contact with him. It was as if he were now a plague carrier.

"Even if they were Redhands," one whispered to another, "nobody should have to die like that. They didn't have a chance."

"I don't care much about a bunch of stinking ProTects," the other answered, "But what he did was impossible. It wasn't human." His voice trembled. "Just not human."

"Human enough to die when he gets a knife in his guts," the little killer muttered grimly.

Charlton's ears were far more acute than any there suspected. His mouth curled in a hybrid of smile and snarl. Men feared him or respected him, but none offered him companionship, God has no friends.

They pressed on toward the outskirts of the city. They saw no one. It was ill to travel the streets of High Delphi at night, and only Keres and the foolhardy did so.

Twice they were forced to conceal themselves as the private groundcar of some rich merchant sped toward the pleasure houses in the center of the city. Once a Kere troop-transport and an armored half-track roared past, red lights

flashing and sirens wailing eerily, while they crouched in the shadows; they caught a glimpse of a fighter hovercraft in the distance, skimming low over the rooftops, infrared spots probing.

"Maybe the fact that Jhon Charlton is on this planet means nothing to you," the Empty Man commented as they emerged from their hiding place. "But I'll wager that the High Protector is much more concerned. This is only the beginning. By morning, the search will have doubled, tripled. The government will turn Apollon inside-out to find me. I suggest that we get to our destination quickly."

The rebel captain nodded. "I pity the poor murderer or rapist who tries to ply his trade tonight. And thank the Flame that we started early enough to slip through the net before it could fully close! We've reached our destination; our headquarters is across the street."

Charlton glanced in the direction indicated. A small, rather shabby, four-story building, with a definite air of decay about it squatted among a cluster of similar or worse structures on the fringe of the city. Conspicuous in contrast with the peeling paint and weathered masonry was a large, brightly polished bronze plaque, riveted to the wall over the door. It read: BEGGARS' UNION — LOCAL HEADQUARTERS - HIGH DELPHI; and underneath, in smaller letters: AFFILIATED WITH THE JESTERS' GUILD.

Charlton arched an eyebrow in surprise. "This your headquarters?"

The rebel captain grinned. "Why not? No one suspects clowns and beggars. Until it's too late."

III

Denton Arzur, Master Thief and head of the revolutionary movement on Apollon, studied his guest warily over the rim of his glass.

"I'd drink with the devil were he my guest," he said, "and I'll drink with you now however things turn out."

Jhon Charlton smiled and scanned the room with a caution that was as instinctive as breathing. This was a high level meeting; only Arzur's four chief lieutenants were present. Sket Hyman, the rebel captain who had convoyed Charlton from the tavern, perched atop a packing case on the right holding a silent but deadly needlebeam pistol in one hand. Jay Benjamin, chief jester at the High Citadel, lounged full length on a huge, dusty filing cabinet on the left. He was a tall, lithe man with a strong-featured, sardonic face and hawklike piercing eyes. Jarringly out of place with his bright, gaily colored clothes was an illegal, high-power blaster tucked casually into his sash. Jvai, the little psychopathic killer, squatted close to the door, toying with his glimmering knife and eying Charlton with savage hunger. Arzur's mistress, Vye, a tall, beautiful woman with raven hair, stood behind her lover's desk, one hand resting lightly on his shoulder.

Charlton's eyes flicked back to

Arzur. He was phenomenally young to be the leader of a rebel underground. He was about Charlton's age, somewhere in his middle thirties.

The Empty Man drained his glass and then laughed softly; he had detected the alien substance immediately, of course. "I always find truth serums quite delicious," he said. "DR-119, made from Karovian tree melons, is it not? It is? Excellent! I thought I could recognize the flavor."

Hyman swore, but Arzur looked genuinely interested. "And it has no effect on you?" he asked.

"None whatsoever, I assure you. Observe: I am a spotted tyrannosaurus. Satisfied?"

Arzur grinned wryly. "Either you are immune or you have on a most excellent disguise."

Charlton slowly crushed his glass. "Enough of these children's games. Let us get down to business."

Arzur nodded. "Most certainly." He glanced slowly around the room.

"When this portion of galactic space, the so-called Olympian sector, was first settled about four hundred years ago, the head of the expedition sent to Apollon had a very fine idea. He decided to sever relations with Terra and set himself up as a dictator; the mother planet was so far away that it was impossible for her to interfere. He did so, becoming the first High Protector of Apollon.

"Thus, while we share a common cultural background with our neighbor planets — the secret police are called Keres all over this sector of space for instance — we are the only Olympian region that doesn't belong to that portion of the Terran Empire known as the Olympian Protectorate. This is just fine for the High Protector. All profit made from trade with the Protectorate planets goes into his pockets, but the average citizen must suffer tyranny and poverty. The common man on Apollon has a far lower standard of living than the common man on Hephaestus or Poseidon.

"These adverse conditions produced us: a rebel underground. We struggled along for years with little success. Then, two months ago, we were contacted by a representative of the Terran Empire. He said that Terra was interested in liberating us from the tyranny of the High Protector and would help us overthrow the government — "

"Damn nice of Terra, wasn't it?" Jay Benjamin muttered.

Arzur threw the jester a quick glance and then continued. "Although I must admit," Arzur said, "that I don't understand why Terra doesn't stop trade between Apollon and the Protectorate planets if she wishes to topple the High Protector. Bankruptcy would undermine the government in a month."

Charlton smiled inscrutably. "My dear sir, you fail to grasp the basic laws of high finance. Revolutions are one thing, losing money quite another."

"Very interesting, honorable Earthman," the dry voice of Jay Benjamin interrupted. "But I would like to inquire why it took Terra

four hundred years to work up enough patriotic favor to attempt our liberation. For centuries the Empire has let Apollon go to hell in a handbasket. Why the sudden eruption of paternal concern?"

Charlton eyed the jester reflectively. "Well, I could say that it's because the Empire loves you all, dear bright-eyed children, but I think I'll be honest for a change." He glanced at Arzur. "As you probably know, Terra has been fighting an undeclared war for over six hundred years with an invisible empire known as the Sons of Night, or the Sons of Nyx as they are called in this sector. This conflict is rapidly approaching a decisive stage. Apollon is located in a vital strategic area; the power that controls Apollon could well have a critical advantage." He paused. "Terra does not want the Sons of Night to get Apollon. She will do anything to prevent it."

"Then it is agreed." Arzur said. "Terra will secretly help us to overthrow the government if we promise to apply for membership in the Olympian Protectorate when we are in power."

"It is agreed."

"Excellent. Now we must decide how this is to be brought about. Normally, I would let you discuss this with Jay; he has been handling our local operations for the past few months. But he's going off-planet tonight."

The jester grimaced. "The High Protector and the Oligarch of Hephaestus made a deal; His Holiness swapped me for an Aphroditian belly dancer. The Far Traveler for Hephaestus leaves Starport in a few hours, and I'll have to be on it."

Hyman growled, "What kind of help is Terra gonna send us? That's what I want to know. Troops? Heavy weapons? Air support? What's the Empire gonna give us?"

"Me," Charlton said.

"What!"

"I'm all the military aid you're going to get. And you have no idea how generous the Empire is being to you at that."

"That's mighty big talk, outworlder," Jvai spat. "But talk's cheap."

"Oh, but I can do far more than just talk. I can prove my mettle and start your little revolution off with a bang if you can somehow smuggle me up to the High Citadel tonight. And the clown — " he grinned savagely at Jay Benjamin — "can thank whatever gods he swears by that he's not sleeping in the citadel this night."

Charlton was asked to step out into the hall while the rebel leaders debated what course of action to pursue.

He waited.

After a few minutes, Jay Benjamin sauntered from the room and crossed to where Charlton stood.

"Have to be at Starport for preflight indoctrination so I'm leaving early," the jester explained. He arched a sardonic eyebrow at the Earthman. "Patience, m'boy. Hyman and Arzur are still deadlocked over what to do with you. Hyman's all for quietly wrapping you in lead

weights and dropping you in the nearest river, but I don't think he'll get his way." He chuckled. "I've heard of you, Charlton, and I've known life under the Oligarchy also. Not everyone here is fooled by the propaganda. Some of us know how much liberty there is likely to be in a Terran liberation — and we don't want the good comfortable life if its price is secret police and a knife in the dark. Some of us look beyond the arms of all-embracing Empire to the day when this will be the free Olympian Confederacy, and we will not be content merely to exchange one set of masters with another. Think on that for a while, Charlton. Think well."

He slipped silently away.

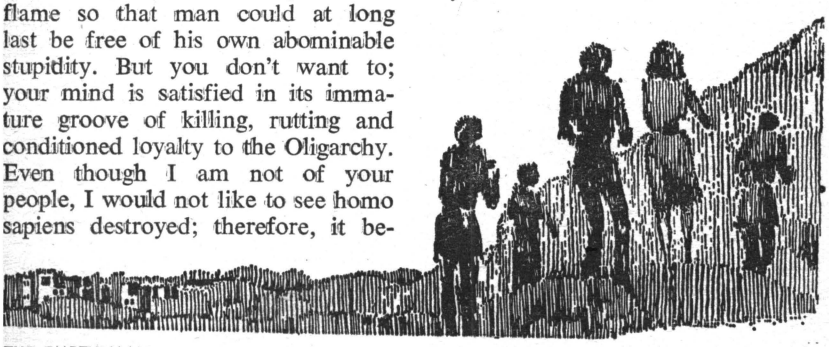
Charlton cursed.

Moros finally broke the long silence that ensued, speaking more to himself than to Charlton. "There was a legend, Jhon, among your people many thousands of years ago that told of a mythical being named Prometheus who stole precious fire from heaven and gave it to mankind. You could be a Prometheus, if you want to be. You could take fire back to the stars, spread the flame so that man could at long last be free of his own abominable stupidity. But you don't want to; your mind is satisfied in its immature groove of killing, rutting and conditioned loyalty to the Oligarchy. Even though I am not of your people, I would not like to see homo sapiens destroyed; therefore, it becomes a problem of making you realize that there are more important things in the universe than Jhon Charlton. Cutting you from all but a few chosen emotions was a good start, but it's not enough, not nearly enough." Had the alien been able to sigh, he would have then. "Mankind is on the brink of a tremendous, three-sided conflict: The Sons of Night versus the Terran Empire with the rebellious colonists against both, and various hostile alien powers waiting to mop up whatever is left. You, Jhon, could be a focal point in that war; a war that could spell the end of galactic civilization. But you just don't care, do you?"

"No."

"Were I human, Jhon, I would be forced to call you a lousy bum."

They were interrupted as Arzur stepped into the hall and levelly at the Empty Man. "You'll have your chance," he said. "We'll leave after midnight. Be ready." He strode away, paused, and then swung around to face the Terran. "And Charlton," he whispered softly, "you had better be as good as you say you are."



IV

Outside, it was, if possible, even colder than it had been earlier in the evening. Now a fierce wind blew from the north, biting all present, except Charlton, to the bone in spite of fur-lined winter suits.

The Empty Man glanced around him. They were far from the city, trying to work their way around through the uninhabited areas and approach the Citadel from the rear. For an hour, the ground had been sloping steadily upward until they found themselves in the foothills of the range of low mountains that surrounded the south end of High Delphi. They were climbing up a narrow and dangerous path that led across the face of a cliff. On the right side rose a sheer wall of frowning granite, on the left was a dizzy drop of hundreds of feet. Far below, at the base of the cliff, twisted the tiny shining ribbon that was a mighty river.

Charlton heaved a wistful sigh. In spite of the danger, it was a scene of great beauty and serenity.

Moros shattered Charlton's contemplation of the quiet. "If supernatural beings do indeed rule the universe, they purely must be Spirits of the Ironic. Life is a cosmic joke. The humor is grim, and we lowly mortals often fail to appreciate the jest, but wit is there if we search deep enough. Take yourself as a case in point. What marvelous irony! The greatest murder the galaxy has ever known; the man who very nearly committed genocide yearns only for peace and serenity."

Charlton gritted his teeth and made a mighty effort to ignore the telepathic being. He concentrated instead on Vye's slim, fur-trousered legs as she climbed up the trail ahead of him. In front of the girl toiled Sket Hyman, and leading the party was Denton Arzur, Vye's lover. Last in line, gliding stealthily along behind Charlton, was the little killer, Jvai.

Once again, Charlton's trained mind probed out, straining to delve below the surface thoughts of his companions and explore the ego, the "I" factor, that lurked in the remoter regions of every brain. Slowly, he began to form a picture of the personality and motivations of each member of the party. A less hardened man would have been shocked at the pictures and memories dredged up and fed into the scanning mind of the Empty Man.

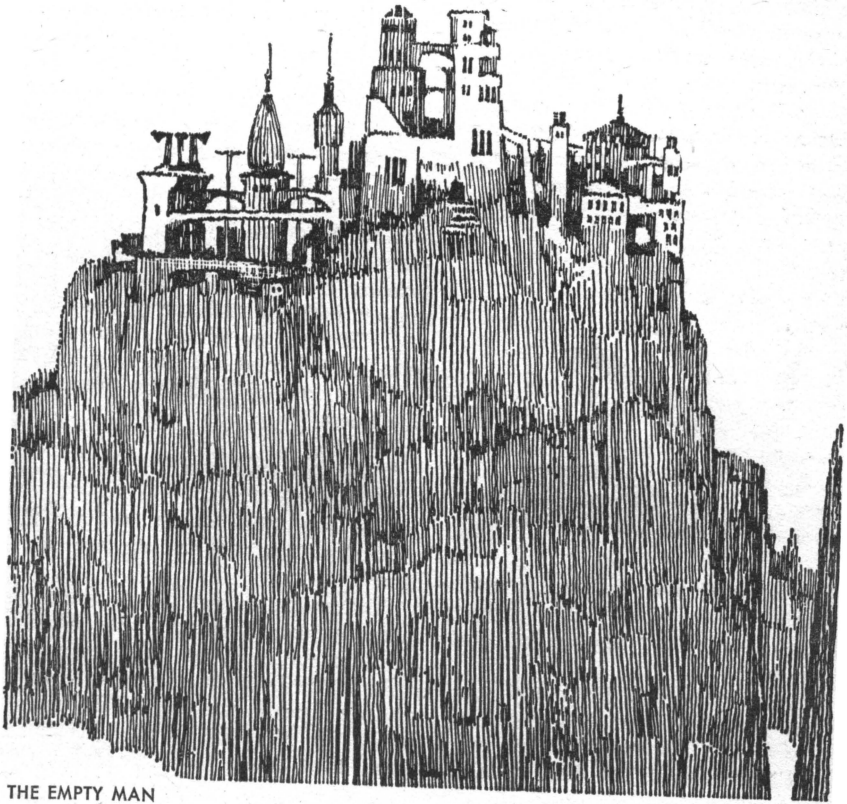
Beside idealism and the desire for material possessions, each had a much more deeply rooted motivation, a reason for hating the Protector's government. Vye's reason was rape by a squad of Keres when she was a young girl, Arzur's was the brutal slaughter of his parents, Hyman's a life of misery and terror spent in a New Delphi slum watching the government's soldiers destroying his property and friends.

But Jvai was different. Certainly he hated the Keres, but it was the same twisted hatred the little killer felt for any living creature, male or female. Much more important, Jvai feared them. Charlton found one crystal-clear picture engraved indelibly in the killer's brain.

Young Jvai, a boy about four, huddled in the gutter near the door of an incredibly dirty and broken-down shack in the section of the city known as the Beggars' Hole. He heard the blare of material music, and as he glanced up, a squad of Keres in full dress uniform paraded by. As the boy watched the Keres, the sunlight glinting dazzingly from their guns and helmets, their bright plumes tossing in the wind, looking tall and shining, like gods, fear began to fill his soul —

Charlton's mind snapped back to the present. His hypersensitive ears had detected a faint sound, one that was out of place with the regular background drone of footfalls and labored breathing. A backward glance, a movement too fast for the normal eye to see, confirmed his suspicions. The sound had been the rasp of a knife being cautiously slipped from a sheath.

Jvai, the knife held close to his body, stalked noiselessly toward Charlton, Undoubtably, he planned



to push his victim's body over the edge and claim it had been an accident.

The Empty Man smiled. Swiftly as a striking cobra, Jvai's arm jerked high into the air and then flashed forward. But not swiftly enough. A split second before, Charlton had broadcast the coded psionic signal that triggered the instantaneous molecular metamorphosis of his skin into a steel-hard chitin substance. The knife drove into Charlton's ribs. With a groan of tortured metal, the blade snapped in half. Charlton swung an arm like a wrecking boom. A terrified scream echoed through the predawn hush, and then Jvai was gone. Charlton caught a glimpse of him, only a tumbling, black spot, before he hit the surface of the river hundreds of feet below.

"That was your traitor, Arzur," he said as the rebel leader rushed to the spot. "Any chance of him surviving?"

Hyman shook his head and spat contemptuously over the edge of the cliff. "If he survived the fall, the killerfish will cut him to ribbons. Now, just how did you know he was the traitor?"

"He tried to stab me but missed."

Hyman shook his head again, doubtfully this time. "Jvai never missed a stroke in his life."

"There's always a first time."

V

The three rebels fled at breakneck speed down the winding trail.

"I still don't like it." Hyman gasped. "What right did Charlton have to send us packing? What's he up to, anyway? Maybe he's a double agent."

"That's the risk we'll have to take." Arzur snarled. "Run!"

Hyman sighed resignedly and put on a burst of speed. Somewhat ahead of the others, he dashed around a curve in the trail and sprang back twice as quickly, twisting his body nearly double in mid-air with the violence of the motion. "Keres," he hissed. "We must have missed them on the way up."

"How many?" Arzur's whisper was harsh.

"Three."

"Did they spot you?"

"I don't think so."

Vye ran her tongue nervously over dry lips. "What do we do now?"

"Either die or get rid of them," Arzur answered grimly. "But whatever we do must be done quietly; noise would bring other guards down on our necks instantly." He gestured for silence. In the sudden hush, they could hear the muffled

thud of boots on rocks approaching relentlessly closer up the trail. Vye slid a hand stealthily inside her warmsuit and drew forth a compact weapon that had been taped to her thigh. Hyman took up a position on the opposite side of the trail.

They waited.

Conversing in low tones, the three Keres rounded the corner. Vye's airgun spat silent, but deadly, cyanide darts. The needlebeam in Hyman's hand buzzed deeply once. The Keres jerked and then slumped noislessly into death.

The Empty Man crouched in the shadow of a huge boulder. Ahead, situated on a plateau overlooking the panorama of High Delphi that stretched to the horizon far below, loomed the Citadel. He glanced back along the trail; but by now, the rebels must be almost within sight of the city. He chuckled, remembering the look on Arzur's face when he had told them to run like hell. There had been a great deal of grumbling; but, they had obeyed him at last, which was fortunate. Soon the plateau would be hell.

Charlton studied the immense island of man-made light in a sea of inky darkness and then glazed at the sky. For the last hour he had been calling for a storm, and he was going to get a whooper; great menacing thunderheads were billowing up from the north like a tidal wave.

Rain began to spatter about him. This was the moment, the culmination of his mission, the time of his personal triumph. And he felt nothing, not even a quiver of anticipation or exultation. He knew this his victory would turn to ashes in his mouth.

Charlton reached out into the night. He directed all the inhuman energy he possessed into a task long considered impossible by science: channeling every iota of electrical power in the immense storm into a single bolt, attempting to make all the electricity in the air ground itself in the same spot at the same time. Impossible — but not for Jhon Charlton.

In a moment, he would destroy a man he had never seen. And with the High Protector would die all the hundreds of men, women and children that inhabited the Citadel. And they would never know what had killed them.

Or why.

"How does it feel to control the whirlwind, Jhon? To wield lightning as a weapon and unleash it to kill whenever the divine whim takes you?"

"Damn you!" Charlton's scream was on the ragged edge of hysteria. "Shut up!"

Lightning lashed from the sky like a two-pronged whip.

The world exploded into fire.

VI

Hyman holstered his needler and turned to Arzur. Before anyone could speak, a sudden flash from behind turned night into blinding day. A microsecond later, the roar of the explosion burst upon them. The earth twisted sickening-

ly as if to a belly blow. An irresistible shock wave smashed them to the ground.

The explosion was felt for miles. In High Delphi, people staggered in terror from their houses to gape toward the south, where a billowing cloud of smoke and huge, leaping tongues of flame shrouded the top of the Plateau of the Citadel.

For the first time in Apollon's history, the Keres ceased their endless patrols of the city to stare upward in fear and awe, shoulder to shoulder with ordinary citizens. From the Beggars' Hole, the rumor that the end of the world was at hand began to spread like wildfire. In a few minutes, wails of fear and cries of delight at the Protector's untimely demise echoed through every street in the sprawling city.

It took the trio of rebels nearly ten minutes to work up enough courage to climb back up the trail to the Citadel. They found the Empty Man standing alone in the center of an immense expanse of fused glass and metal that marked the site where the Citadel had once stood. He looked up slowly as they approached. It had been touch and go for a while, but the chitin armor of his transformed skin had successfully protected him from the titanic stresses of the blast.

Hallelujah, thought Charlton bitterly.

And his companions stared at him in awe, he riffled swiftly through their brains, feeling a twinge of sour amusement at what he found. Hate and horror was strong in every mind. Arzur felt the most nausea; he was a much more idealistic man than the practical Hyman or any of the others.

He would probably be found hanging from a rafter beam one day after he fully realized what he had visited on his people in the name of freedom. Charlton sighed. If things were different, if he wasn't Charlton, he might have found a great friend in this man.

His mouth curled into a hard, mirthless smile at the picture in Vye's mind.

Without a word, he led them from the field of victory.

No one spoke during the long trip down the mountainside. They stumbled along mechanically, oblivious to the gentle rain that sighed around them like lover's tears. The rebels were dazed by the way their world had been stood on its head without warning. All their most desired goals had been achieved overnight, and Arzur, for one, felt curiously lost.

Charlton was wrapped in his own dark thoughts. He knew, of course, that his task was just beginning. In the morning, he must tackle a multitude of jobs: co-ordinating planet-wide efforts, whipping the underground forces into an efficient rebel army, planning military strategy, demoralizing the enemy, assassinating, sabotaging and a million others. But now he wanted to rest; he was weary of body and of soul.

They reached their headquarters without incident. The sound of rioting rang throughout the city, especially in the area adjacent to the Beggars' Hole, but it was unlikely that anyone would try to loot the shabby Beggars' Union building. With a curt nod to Arzur, Charlton slouched wearily to his room and flung himself, fully dressed, down on the cot.

Charlton had been asleep for less than a hour, and dawn was just beginning to lighten the eastern

sky, when he sensed the presence of someone in the room. Instantly he snapped into full awareness, poised to kill. He smelt the delicate musk of perfume and saw starlight shimmer faintly from a frilly nightrobe and untied raven hair that fell free to the shoulders. Something warm slid close to him on the cot.

It was, of course, Vye.

She leaned forward and pressed eager lips against his, muttering something low and unintelligible. For a moment, his body responded instinctively, but then the combination of exhaustion, surprise, and desire surged over his groggy mind like an irresistible wave, and the last, frayed bond of mental control snapped under the strain. In one frightening instant, the boil had burst, the contamination spread, and he found himself staring straight into the depths of his own soul, seeing himself, REALLY seeing himself, for the first time, as others saw him — stripped of all self-delusions and conceits, every foible and fault standing out sharply under the harsh glaring light of reality.

Horrified, he saw the real Jhon Charlton, in proper proportion to the universe at last: a pitiful, whining, mewing thing of fragile flesh and blood, pathetically ignorant, weak and imperfect, yet possessed of such a colossal vanity that it dared to cry its futile claims of superiority aloud to an uncaring cosmos, a monkey chattering noisy, frightened defiance in the primeval darkness. Charlton had learned the hard way that the universe was not impressed by his existence, that life would flow along quite unchanged after the organic machine that was Charlton ceased to function. And, with a sick feeling in the pit of his stomach, HE KNEW. Roughly, he tore her arms loose from his neck and sprang to his feet.

"Get out of here, damn you!"

She made a soft, hurt sound of surprise. "Why? Am I not pretty enough? Or perhaps a lowly colonial girl isn't good enough for you, Terran?"

He shook his head, a jerky, desperate motion. "No, it's not that, but — I can't. Now get out!"

She rose to her feet and moved gently toward him, her eyes filled with compassion and tenderness. "What's the matter?" she said softly.

He shook his head again. He backed slowly away from her, and she followed.

Her voice was as soft and gentle as a caress. Pinpoints of starlight danced magically in her eyes and reflected from her silken skin. "What's the matter, darling? Tell me — please. I want to help you."

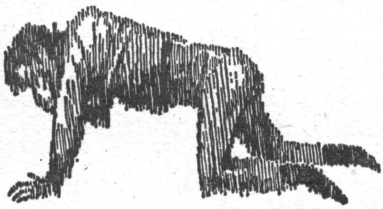
"I can't." His voice broke. He stumbled backwards. She stretched her hand beseechingly toward him.

"I love you," she whispered. "Let me help you." He studied her outstretched hand through a red fog. She moved closer, making soft little noises deep in the back of her throat. With a cracked scream, he whirled and hurled himself through the window.

The ground leapt up to meet him with sickening speed. So, now I die, he thought and felt strangely grateful.

He smashed into the hard pavement.

And felt nothing.



Charlton swore savagely. Again he had been beaten by a conditioned reflex. The chitin substance into which he had instinctively transformed his skin could insulate him against a far greater impact than a four-story drop.

From behind him came a scream and the sound of hysterical sobbing.

Charlton found himself running blindly through the night.

He knew that he must return in the morning. The conditioned sense of duty that was still too strong to disregard reminded him that he had a revolution to engineer. But now he wanted only to run, run from himself, run on and on and on until the night swallowed him up without a trace —

Now he knew what he had tried to hide from himself all these years.

Love and hate are more than just opposites. One is the absence of the other; as black is the absence of light, and cold the absence of heat, so is hate the absence of love.

A man filled with hate and bitterness has room for nothing else. Hatred, like some wasting disease, consumes the soul, growing and swelling until at last it turns and begins to feed upon itself.

And he had always been a man of hate, a creature of death and destruction.

"Why didn't you make love to her, Jhon? The anatomy of your body would have been a problem, but not an insurmountable one. Not for you. Not for Jhon Charlton."

"I can't," he sobbed. "I can't love!"

"I know, you poor jerk," Moros said gently. "You poor, poor jerk."

And a gust of sardonic mental laughter followed him from the square.

END

ARENA

by MACK REYNOLDS

Illustrated by FINLAY

He was being butchered to make an alien holiday — but he could make them pay for their thrills!

I

The noise from above was deafening. Shouts, stomping of feet, cheers, I suppose, or the equivalent of them. The equivalent of music, too, if you could call it music. Something like the high, wailing strains of India, if you must have an Earth comparison.

"What in the world's going on?" Billy said nervously.

"Search me," I said. "It'll be all right. Everything's turned out all right, so far."

Billy looked at me. "Such as what?"

I shrugged, trying to maintain a front. "Well, they finally figured out what we could eat and the fact that we needed what evidently seemed to them an unbelievable amount of water. They're doing the best they can."

Billy said bitterly, "We've been treated as prisoners, and you know it, Ken."

"Don't talk that way. We'll be all right."

We were in a small, unfurnished room. Possibly ten by ten. No windows. There was a narrow door through which we had been pushed possibly ten minutes earlier. There was a larger door, which evidently slid open and which took up the complete wall opposite our entry. You could hear the sounds through the large door as well as from above.

"Ken?"

"Yes?"

"Something bad is about to happen."

I swallowed. There was nothing I could do. Supposedly I was skipper of this two-person expedition, but it was all out of my hands. The only help I could give poor Billy was verbal — and meaningless, as we both knew.

I said, "It'll be all right. Nothing else makes sense. There's no point in anything happening to us. We're, well, like ambassadors."

"Fine," Billy said bitterly. "But do they know it?"

I couldn't think of anything very soothing to say. It was Billy's first expedition, but with all the experiences behind me, I'd never got into anything like this.

"Take it easy, Kid," I said.

Billy walked over toward the larger door and tried to find a crack in its edge, through which to peer.

As though that movement had triggered something, a sheet of metal blurred up from below, between us, bisecting the room, cutting it exactly in half, Billy on one side, I on the other.

It came with such speed, I was caught completely unaware. It took me long seconds to comprehend. Then I banged against it, hard, desperately.

"Billy!" I yelled.

"Ken!" I could hear the voice, dimly, through the metallic sheet. It was high. Shrill!

I banged with my fists. "Billy! Billy!"

But there was no answer now.

In a moment, the metal wall which had divided us sank back into the floor, more slowly than it had risen. I knew, inside I knew, that Billy wasn't going to be there. I was alone in the ten-by-ten compartment.

There was nothing to do but stare at the now closed portal through which my companion must have gone.

Above, the shouts and cheers doubled in volume. The music swelled to an unbearable crescendo. I sank down to the floor and put my head in my hands.

The noise swelled and fell. There would be great mob shouts, screams from what was obviously excitement and sometimes a great drumming of feet — hooves would be better the term. It was evidently some type of applause.

Then there was the music. At times it would break into a great shrilling, usually contemporaneous with the swelling shouts. Then it

would fade away until a new period of excitement.

I came to my feet finally and made a great to do studying my cell. Not that there was anything to find. The whole compartment was of metal, doors and all. Even had I tools, I would have had my work cut out getting through either entry. And I had no tools. I had nothing.

I was clad in the simplest of cloths around my loins, the equivalent of very brief men's swimming trunks. Billy had been dressed the same. They had taken our clothes, including shoes, the first day, and since that time we had been in the nude save for the strips of textile. Actually, it fitted the climate which was as dry as Death Valley and almost as hot.

Fifteen minutes must have passed, though I had no way of marking time.

A hush fell. For the first time since Billy and I had been conducted to this tiny prison there was no pounding of feet, no shouting of excitement. If anything, it was the more ominous.

I pressed nearer to the large portal through which Billy must have gone. Gone to what?

To my surprise, it slid very slightly to one side. By applying my right eye, I could observe, with difficulty, a narrow arc of what was beyond.

Beyond was a stretch of sand, leading to a wooden fence, possibly six feet or so high. Above the fence I could make out tier upon tier of the Centaurs. And now they were shouting and screaming again.

But this impression was formed at the back of my mind. My attention was focused in horror to a point halfway between where I stood peering and the fence beyond. There in the sand was Billy, his body bearing a score of gaily ribboned darts.

And to one side, only a couple of feet away, stood one of them, harnesses in red, a short swordlike thing held high in one of its stubby armlike appendages.

Controlling my nausea, my urge to retch, I couldn't tear my eyes away from the slit. The Centaur pranced about, facing this direction, that. Saluting the now roaring crowd, bowing, prancing.

And then four more of the creatures, these in plain brown harness, came trotting forth. In quick, efficient movements a lariat was trussed around Billy's feet, and the body was dragged briskly away, beyond my small arc of vision.

The crowds in the stands roared again. The red-clad Centaur saluted again with his ridiculous toy sword.

And suddenly, the door against which I leaned, peering through the crack in my horror, shot aside, completely open. I stumbled, then caught myself.

And I could make out in full now what had been only a fraction through my aperture.

The sand floored arena was possibly fifty-five yards across and surrounded by a wooden barrier, yes, about six feet high, using myself as a measure. I am six feet tall, about one eighty in weight.

Above the barrier, immediately,

were two rows of, well, we would call them seats. They were more like couches the Greeks and Romans once used at table. Billy and I had already found them to be the nearest thing to a seating arrangement the Centaurs provided themselves, and that seldom enough. They usually preferred to stand. Largely, the couches seemed a prestige item, a status symbol.

Beyond the two tiers of couches was tier upon tier of standing Centaurs, reaching up to a point where it seemed unlikely the multitude could see what was going on below in any detail. In short, it was a tremendous stadium.

All this has taken time to describe, it took no time to assimilate. My real attention was riveted to a small sword stuck in the sand not more than ten feet beyond where I stood.

When the door had opened, revealing me to the multitude, a shout had gone up. The music shrilled to a crescendo again.

I looked up into the stands, in all my hate and bitterness.

And it was then that a flash of pain struck me in my left shoulder blade. I reeled forward, caught myself. I shot a look behind. There was a small, yellow beribboned dart in my back. And the entry door behind me was closed again.

With a roar of anger, I grabbed up the sword, spun around looking for the foe.

But the arena was empty. Billy was gone. The red-harnessed Centaur, gone. For now I was alone.

I shook the blade up at the stands, screaming my hate at them. And they roared back at me. I had no idea if they have the conception of humor, or, if they have, if some of the sounds they were now making expressed it.

I reached my hand around to the irritating dart. I could feel a trickle of blood running down my back from the wound. I tried to pull it out, but then the pain intensified. The damned thing must be barbed, like a fishhook is barbed. I let it stay.

A door opened on the arena's far side, and three of the Centaurs came trotting in: one in yellow harness, one in blue, and finally the one in red. The rage swelled up within me!

II

Centaur is obviously not the word. It came immediately to mind when Billy and I first saw them. They are about the size of a small Earth-side burro. I would say in total weight they would average about the same as a man. However, the neck is somewhat longer than that of the usual Earth quadruped. No, I reserve that, we have of course not only the camel but even the giraffe. The neck, in actuality, was about the length of that of a Peruvian llama. The great difference was the two arm-like appendages, and it was these that branded them centaurs in our eyes. It took little imagination to compare them to the Greek mythic creatures with the bodies of the horse and the human upper torso.

The two appendages at the side of the neck, just above the foreshoulders, were not as efficient as a man's arms, nor were the four-fingered hands as dexterous. But evidently they had been enough to bring this life form to the ascendary on their planet.

Now, as I stood there, the three, in the unison of chorus girls, pranced into a line, dashed in a gallop to a point immediately before what could only have been the president's box, the king's stand — whatever their officialdom might be. It was luxurious beyond anything I had thus far seen on this grim world, and no more than a half dozen reclining Centaurs occupied the robe-bedecked couches.

The music shrilled high, as the three skidded to a halt in a swirl of sand and saluted the officials.

But I'd had enough.

All my life, I have read the expression *he saw red.* It never came through to me. A bit too precious. Not quite true. But now I knew the original writer of what eventually became a cliche in the Earth-Basic language wrote from experience.

Because now I saw red. All was a red haze.

I rushed them.

For moments, I felt a surge of confidence, since they obviously didn't see my approach. Sword in hand I ran, plowing through the sand. And they ignored me, prancing, capering, bowing and saluting to the cheering mob of their fellows.

The nearest was the one in the

blue harness. As I came nearer, I could make out his outfit in more detail. His hands were free, but to one side he wore a scabbard which undoubtedly housed a sword similar to my own and similar to the weapon the red-costumed one had evidently used to finish off Billy.

The harness had some aspects, I could see, of body armor, since it covered what were obviously the more vital parts, and there seemed to be some sort of bandoleer criss-crossing the neck — or chest, if you wish to retain the centaur image — something like Pancho Villa's Mexican soldiers you see in the historical Tri-Di shows.

I was almost to them, coming up from the rear. I swung my sword high, feeling no compunction whatsoever at attacking without warning. Feeling nothing except rage beyond the point I had thought possible.

I must have missed my aim by several feet.

In a sudden burst of motion, the three of them had scampered off in as many directions, and I was left standing there, sword again on high, stupidly.

The mob's voice reached to the skies.

And, yes, their race knew humor. If this you could call humor. They also knew ridicule.

From the sides of my eyes, I caught Yellow coming in fast. I tried to spin, tried to backhand him with the sword.

He was in, his body actually scraping me for a moment, and then out again.

I was almost dashed to the sand. I caught myself, came alert once more. I could feel another sting, this time near my right shoulder blade. My eyes went there, inadvertently. There was another ribboned dart. In a moment the pain became more intense. In my rage, I had forgotten the first dart, now I remembered.

Both wounds were now bleeding — each but a trickle.

Blue was coming in from the other side in a burst of speed. I turned and faced him, the sword always ready.

He came close, a dart, blue ribboned, in one of his hands. Their arms were not of the length, nor strength to give them the power for a good throw. They would never had made javelin men. But enough darts, no matter how small, will bring down a buffalo — in time.

He hadn't coordinated his attack sufficiently. At the last moment, seeing me ready, he skidded into a turn, throwing the dart, starting away. I dashed forward and swung at him. I know nothing about swordsmanship; even at the personal combat school in Neuve, San Diego, they never teach it any more. It is no longer even a sport on Earth. However, in this type of action, swordsmanship was not of the essence, quickness of hand was.

I slugged him a good one, across what would be called the haunch, had he been actually of the *Equidae* family. But he darted off, as though untouched. I had expected to finish him.

I looked uncomprehendingly at the sword, accusingly, and learned my first hard lesson. It was a meaningless weapon. I would have been hard put to cut cheese with it. It was about as sharp as the average letter opener, and not even the point was really adequate. I could, possibly, draw blood with the point, but it was going to be a rare situation under which my weapon could cause any considerable damage. The cards were stacked against me even beyond the point it must have looked in the stands.

But Blue had missed me with his dart. I waded through the sand and picked it up and even as I stooped I sensed the rush, heard the swirl of sands as one of them turned quickly and felt another of the barbed missiles penetrate my thigh.

I scurried over to the wood barrier which surrounded the arena, fear suddenly welling up from inside to replace the rage of a moment earlier. I had three darts in me now, each wound bleeding, though none badly. Still, how many could one take?

I held the blue dart in my right hand, my all but useless sword in my left. I got my back to the wooden wall.

All right, you four-legged bums, come in and get me. I felt myself breathing hard, in spite of the fact that no more than two or three minutes could have transpired since I had entered the ring. Breathing hard and blistering with sweat.

I might have known they were old pros at this. In their time, without doubt, they had worked out every variation on the theme possible.

All three came in at a gallop. Red along one barrier wall, Blue along the other, Yellow directly at me from the middle of the arena. I stood there, feet wide, braced. If nothing else, I thought wildly, if I could get my hands on one of them during the melee to come, I could strangle him. They were no larger than I and no stronger, I was sure.

Billy, Billy, I muttered meaninglessly. *Give me the strength and chance to finish just one.*

It looked as though they were bent on collision — that we would wind up in a free-for-all pile. I threw my dart at Blue, tried to use the point of my sword against Red.

Blue had his sword in hand. With a flick of wrist, an amazing dexterity, he fended the dart off, the same moment coming to his hind hooves, spinning and dashing off again. At the same split moment, Red had done the same.

Yellow was alone, before me. Back on his rear legs he went, and his hand blurred. I felt the now familiar pierce of one of the darts. His hand flicked to his chest, plucked another dart from his bandoleer, blurred again. All this time, he was reared back, dramatically. I felt the second dart strike a rib and fall away, leaving a bleeding red groove.

III

The crowd screamed its pure joy. Enraged again, I dashed after him as he beat his retreat.

I came to a halt in the center of the ring. I could never catch him in a race. I stood there blowing. I had four of the darts in me now. The rage was gone again. Even Billy was forgotten. It was fear that held me now. I knew I was to die in this ring. I could smell the fear stink in my sweat.

They were making a tour of the arena, galloping along in unison now. Yellow leading. The crowd roaring. Evidently, they had come to the end of one part of the drama. A new one was to commence.

I shook my head to dash perspiration from my eyes. And it came to me that thus far I had played the fool. Here I was, *homo sapien,* the thinking animal, trying to make like a lion, a tiger . . . or a bull.

Yes, a bull. The similarity to this situation and that of the bull in the *fiesta brava* of the old days in Spain and Mexico was inescapable. I had seen the spectacle various times in Tri-Di shows and historicals.

It wasn't as fantastic as all that, I realized, even as I stood trying to catch my breath and overcome my fear, in preparation for the next act of the show. Given a culture that evolved gladiatorial fights, a warrior race with the love of combat, and inevitably as the culture became decadent, the fights in the arena would take a definite trend: an audience, seeing a victim killed vicariously, and shouting, cheering its excitement. The popular gladiator, or matador. A judge in the stands, some high official to preside and be saluted. A good deal of pageantry and colorful gobbledygook. A definite routine, always followed. And, eventually, the deck so stacked that although it looked dangerous indeed, *the victim never had a chance of winning.*

The bull might look ever so large. The matador pathetically small and helpless, so straight, noble and fine in his *trajes de luces,* his suit of lights. But the bull never won, was never meant to win. In his day a name matador might kill two thousand bulls and more and then, in his own time, die in bed. Percentagewise, the bull had no chance whatsoever. No matter how dangerous the show might be rigged to seem, the matador was always victorious.

I remembered the Tri-Di I had seen based on the life of Manolete, possibly the greatest torero of the 20th Century. Upset by personal woes, the man had finally come into the ring sodden drunk and had paid the penalty. But he had been the last, the last of the great matadors ever to die in the arena. From then on the clipping of horns, the drugging of the animals, the reduction in size and fierceness of the *Bos taurus ibericus* had made the spectacular about as dangerous as riding to hounds.

It came to me suddenly what was going on. Something like the Spanish bullfight of old, the killing of the victim was divided into definite acts. The initial running of the bull, to get an idea of its speed, the way it hooked, what horn it favored. Then the picadors, to keep it enraged and to bring down its head a bit, then the banderillas to enrage it still further and keep it coming, then the

final *faena* where the matador put on his performance, leading to the moment of truth.

In the same manner, my Centaurs were going into a new act of the show. And I thought I knew what it might be. They realized that at this point I was terrified and temporarily exhausted. They were giving me a rest. A chance to collect myself. Then they were going to come in again, enrage me again, until I stupidly charged through the sands, slugging after them, while they posed and pranced, gracefully making a fool out of me for the edification of the cheering mob.

It was what happened to the bull. They kept him enraged, kept him coming, kept him from stopping long enough to figure out that it wasn't the cape but the man behind it that counted.

All right. I was *homo sapien,* the thinking animal. Start thinking, Ken, start thinking. And not about Billy. Not about the fact that you're never going to leave this ring alive. Not about the fact that a mere month ago you were Kenneth Ackerman, most promising young officer in the Space Exploration Corps, happily married, a semi-celebrity back home, due to your deeds of derring-do. Start thinking instead, of taking a couple of them along with you. Or, at the very least, *one.* If nothing else, for Billy and the way Billy's body had looked, crumpled there on the sands, a score of darts with their pretty ribbons embedded in the body from every angle. You can do it, somehow.

Start thinking.

I breathed deeply. All right, what is there to think about? What could a bull have thought about, other than what he did?

Something came to me. I had seen Red taking the plaudits of the crowd, lifting his little sword to the salute, as he stood over Billy's corpse. But it wasn't Red that was giving me most of my hard time, now. In fact, I didn't have a red dart in me. All were yellow.

Yellow was obviously the matador, this time. Red and Blue were running interference for him. Red had been the matador, the most important performer, with Billy, but Yellow was my prime enemy.

All right. Point one. I'd learned something. It might help.

Something else. They'd stacked the deck with the sword they gave me. In the same manner as when they had trimmed a bull's horns, in the *fiesta brava,* they stacked the cards against him. A bull cannot see the tips of its horns. All its life it learns where they are through practice; just how to hook. But with a few inches trimmed down, he's thrown off his perspective; and before he learns to correct his aim, the torero has made an ass of the bull, and he's dead.

So it was with me. They had given me a sword that was all but useless. I was continuing, in the heat of the fight, to try to utilize it. Their swords, I could be sure, were sharp enough. But mine was a delusion.

Should I throw it away entirely and depend on bare hands?

But then something came to me, and I stared down at the pseudo-weapon in my hand. In actuality, it

bore only a superficial resemblance to what we would think of as a sword on Earth, being only a bit more than a foot in length and having no cross piece to guard the hand. The hilt, though undoubtedly of sufficient size for the small grip of the Centaurs, was inadequate for a man as large as I. It was a toy sword, aside from being blunt of edge.

But it was all I had.

Think, Ken Ackerman. Think, *homo sapien*. Think, you ambassador of good will to an alien intelligence. Think!

The roar of the mob reached to the skies again.

The three of them were coming in at a graceful trot, slowly gaining speed. Yellow was in the center, sword in hand, Red to one side, Blue to the other. Both of the flankers bore darts in their hands.

Back to me came two scenes. One, a performer in a Tri-Di revival of the vaudeville of yesteryear. One, in which I myself starred in the schoolyards of my youth, at a boy's game come down through the ages. Could I combine the two?

On they came, Red and Blue, now, slightly ahead.

I thought I could see the strategy. With their darts, they would fade in initially, drawing my attention. Yellow, my matador, would dash in then for some undoubtedly graceful bit of daring which would bring the plaudits of the mob, the shrilling of the congratulatory music.

"All right," I growled. "Meet the mumbly peg champ of Public Grammar School Number Six!"

I flicked my tiny sword over, grasping the point, and shuffled forward, ignoring the incoming Red and Blue.

Their eyes, large and multipupiled, had no discernible lids, so far as Billy and I had made out earlier. But now those of Yellow widened, and he skidded to a halt and reared to his hind legs preparatory to dashing off.

I could feel the darts strike deep in both sides and ignored them. At the moment, I could have ignored the slugs of a 9mm mini-Bazooka.

I dredged up the skill of two decades past and threw, not particularly hard but with all the accuracy I could call upon.

The point struck at the spot which would have housed the human larnyx.

Eyes bugging like a tarsier, Yellow dropped from his rearing position, fell to his front feet, fell to his front knees, his small hand dropping his own sword.

I heard snorts of dismay from either side and the swishing of sand as Red and Blue came hurrying in to the rescue. I ignored them still.

I waded forward, through the sands, stooped, swept up the sword. I didn't bother to check, even with my eyes, the keenness of blade. I knew, as I knew my life, that it would be as razor sharp as my own had been dull. I spun and slashed with all the strength of my man arm, with all the strength of a maniac. And ripped a cut from the withers of Blue to the strifle of his left leg, a cut that must have delved halfway

through his girth. So that even as I spun to locate Red, the evil horror of Blue's viscera began to spill out, and his scream could have been that of the pony his hind quarters resembled.

Red was in full retreat, dashing for the entry portal through which he and the other two had galloped so gracefully hardly ten minutes before. And as he ran, he stumbled, regained his feet, dashed, skidded in the sands so that he nearly fell again.

And I plodded after. This was the one who had finished Billy. This was the one who had taken the applause from the screaming crowd, after giving Billy the *coup de grace*.

He dropped his sword, made the gate, began beating on it with his tiny, ineffective hands and shrilling.

And it came to me how basic in all higher life forms are the fundamental reactions — among others, pleasure and pain, rage and ecstasy . . . and terror.

Beyond the gate must have been consternation. And deep within me I hoped that the reason it budged not was because those on the other side also felt that terror of unexpected extinction from a victim who was meant to receive the blessing of death, not award it.

Still beating on the portal, he darted his head around to watch my progress through the sands. Had he left off then and dashed for it, I could never have caught him. My physical resources were all but exhausted, and I was being kept going by hate alone.

But there was nothing left in him at all, save his terror.

I came up from behind and cut his hamstrings, each with a double blow so that whatever the degree of their surgery, he would be forever a cripple.

Then I turned and walked slowly back and came before the president's box. And it came to me that for the past several minutes, the minutes of slaughter, there had been silence throughout that stadium of thousands. The music had withered away, the shouting was gone, not a hoof tramped the flooring.

And I stood there before the reclining aristocracy of the Centaurs and recalled the stance of Red as he had stood over the fallen body of Billy. And to the extent that I could on my two legs, repeated the salute he had made. I held my sword, just so. I flourished it, just so. I bowed and saluted again, as Red had bowed and saluted.

Then I turned on my heel and saluted that quarter of the arena, the thousands of Centaur vicarious bravos, and then to that quarter, and that and that. Till each in all that vast audience had been properly saluted.

And in all that stadium I could make out but two sounds. One, the last involuntary kickings of Blue, in his death throes in the center of the arena. Two, the continuing terrified shrilling of Red, who had fallen to the sands.

But at last the gate had opened, and a dozen or more brown-harnessed ring attendants came scurrying through. Half of them gathered

about the fallen Red, jostling each other in their attempts to raise him and carry him away.

The others, six or eight, came running toward me. Running, but at no great speed. And as they came they spread out. Some bore long, thin lances, and some, lariats.

I saluted the president's box, once more, tossed my sword to the sands and turned and folded my arms and awaited them.

IV

It was five or six days before they brought me before his high mucky-muck. I never did discover his title, nor his manner of achieving office. He might have been an elected official, a hereditary emperor. He might have been the equivalent of a bishop, for that matter. I never discovered their socioeconomic system and certainly had no interest.

They had hospitalized me and, to the extent they could with an alien life form, tended my wounds. They fed me — after I at last found the determination to eat again — the foods they had discovered by hit and miss that Billy and I could assimilate.

When at last they came for me, they brought the clothes I had worn when we had been captured upon emerging from the Space Scout.

There were four of them, the first Centaurs I had seen since the arena, save my doctors, nurses or whatever they were who had cared for me. At the time I had thought of them as jailers.

The four were harnessed as elaborately as any I had as yet met. And though I had little interest now, in what I observed, it came to me again how many peculiarities our life forms had in common. For they decorated their harnesses with gems, as our aristocracy of the past once did.

They stood politely, while I donned my space gear. I had no particular interest in so doing, in fact, it was overly hot. But then, I had no particular reason not to, and it seemed to be their expectation. I was satisfied to go along until I found my opening.

I finally went with them, two before me, two behind. And when we left the — I'll call it hospital — another small troop fell in behind.

Once again, their buildings are surprisingly similar to our own, save they are done on a larger and less decorative scale. I don't know why, but to mind came the palaces and temples of the ancient Babylonians or Assyrians. Great massive buildings with long halls and corridors. There were ramps, rather than stairs, for obvious reasons. One temple we passed could have been a ziggurat direct from Sumer.

When we entered the great building, be it a palace, presidential residence, or senate building, another guard came to the salute.

I grunted self-deprecation. The ambassador from Earth's confederation was at long last being treated with correct protocol.

We proceeded down long halls again and finally to a large reception room. At the far end, re-

clining on the only couch with which the room was furnished, was the largest of the Centaurs with whom I had thus far come in contact. Although there were a double score of elaborately harnessed ones present, he wore the simplest attire of all. It was black, without ornamentation and well worn. I gained the impression that it was battle dress which had seen many a campaign and was thus more prestigious than the gems and colorful dress of his associates.

The king, the emperor, the president, the warchief, the bishop? As I said before, I didn't know, nor care.

My guard of honor, or whatever they were, peeled away and stationed themselves at a discreet distance amongst the other retainers. I stood alone before his high mucky-muck.

I found to my surprise that I was still capable of surprise.

Because he opened his mouth and said in very passable Earth-Basic, "A great mistake has been made."

I looked at him for a long moment. I felt too empty to reply. Nothing came.

His large, inhuman eyes went to his retainers on one side of the hall and then the other, in a very human expression. As though he was asking for assistance in his approach. But beyond a slight shuffling of hooves, there was nothing.

He said, "You are not surprised that I speak your tongue? I have gone to considerable effort."

"I am surprised," I said heavily.

He said, "It was not so difficult as you might think. From the moment you were placed in your . . . quarters, here, we recorded each

sound you made. Our technicians were able to decipher your means of communication, particularly since it resembles our own to such an amazing extent, that is, the creating of individual sounds and the reception of them."

Nothing came to me to say.

He stirred slightly on his couch. I suspected again that the Centaurs were more comfortable standing, that the couches had to do with ritual and rank. Not that I cared.

He said, "We realize now that you are not a member of an inferior, unintelligent species, but are actually the dominant life form of your planet . . . ."

"Planets," I said emptily. "Our race dominates nearly three thousand, in all."

A change came over his expression, possibly of dismay. Their features are not similar enough to our own to read.

After a time, he said, "On our world, there is an inferior species, similar to yours. That is, they are bipeds. You will understand that it is possible for such a species to be repugnant to us. Surely there are life forms on your own home planet that are repugnant to you."

"Yes," I said. "Reptiles. Four-legged reptiles."

He stiffened. Another characteristic we evidently had in common.

He said finally, "In analyzing the recordings we made between you and your comrade, we now realize that you were in fact a mission. Could you describe it in more detail?"

I took a breath. "The custom of our confederation of planets is to send an exploratory expedition to any newly discovered worlds which might possibly support our life form. The first expedition is small and preliminary."

"And what is its purpose?"

"Chiefly to discover whether or not there is an intelligent life form already occupying the new world."

His unnaturally large eyes remained on me, waiting.

I said, "If it is decided that the life form is compatible, it becomes a fringe world of our system with which we trade and exchange data." I halted there.

He broke the silence. "And if it is inimical?"

They had studied our language to the point of having such terms as *inimical* in their vocabulary. Obviously, their concern was not small. I held my peace.

Behind me, the assembled Centaurs stirred restlessly.

He said finally, "A great mistake has been made, and we are anxious to make reparations. Reparations a hundred times over. We wish you, Kenneth Ackerman, to return to your confederation and assure your authorities that the planet of Xenopeven wishes to become a, as you said, fringe world of your confederation."

I shook my head at him, a gesture that was probably meaningless.

"There is one great difficulty. I see you know my name. Do you know that of my late companion?"

"Billy Ackerman. We are greatly disturbed . . ."

"Among our species, the female takes the name of the male upon

becoming his wife," I said emptily.

"Female?" he said. "Wife?"

They were not nearly so like our own life form as some of the surface similarities would suggest.

"I do not understand," he said. "But with such great issues at stake, surely this admitted mistake can be negotiated . . . ."

It was then that I bounded at him. It took three full strides.

I knew I had but seconds. But seconds, pray to all the powers in which I have never truly believed, would be enough.

Such anachronisms as swords, we had received no training in at the personal combat school in Neuve, San Diego. But hand-to-hand combat was another thing. Judo, jujitsu, karate, kushti and all the other diverse methods of man killing man or beast with his bare hands are taught, in fact, are going through a long mode, a fad — the end, of course, the building up of our physical bodies.

His unnatural, reclining posture on the couch prevented him from making more than a preliminary movement before I was upon him. My hands were choppers. He could not know it, but since returning from the arena to my hospital room, I had devoted my time, as much as I could find, to pounding, toughening the sides of my hands. I hadn't had the days I required, but it would have to suffice.

The Centaurs, as I have said, weighed perhaps the same as a man, and this chief among them, perhaps rather more. But their build is such, with their six limbs and lengthy torso-necks giving them the centauran appearance, that the bodies are comparatively slight. And so I found this one.

Before they overwhelmed me, I had cracked the neck at least twice, smashed a dozen other bones. My spaceboots helped, they were a far cry from my being barefooted out there in the arena.

They have me now in a smallish, well secured room. But it isn't uncomfortable, given their standards. Nor have they in any way lessened the quality nor quantity of my food and rink. To the contrary. The way I figure it, they're in a tizzy.

They have no manner of knowing what the Confederation does if one of its scouting ships turns up missing. For all they know, the whole fleet comes calling, the battle fleet of a race that has populated 3000 worlds, with all the blood, sweat, and tears that would entail.

They don't know either what would happen if they turned me loose, restored my Space Scout and let me return. They have no way of knowing, if I, as an individual, could sway the human authorities to brand Xenopeven an inimical world. They don't know what to do with me.

Meanwhile, I'm continuing to practice my chopping, the hardening of the edges of my hands. They're awfully careful not to get too close to me, but you never know.

Billy wasn't the vindictive kind, she wouldn't have approved.

Still in all, I'd like to get just one more of them. END

HOW TO LIVE LIKE A SLAN

by LIN CARTER

Our Man in Fandom takes us to where the Slans live!

Neologistically Speaking

As a group, science-fiction fans are rather fond of neologisms. That seven-dollar word is not meant to scare you. It just means that they enjoy coining new words and terms. The fans like to give names to everything they are involved with — conventions, clubs, magazines, each other — and even things like their own cars, typewriters and mimeograph machines. They seem particularly fond of labeling their apartments.

In common with college undergrads, bachelors and others of limited pecuniary means, science-fiction people share the old habit of rooming together to cut food bills and share the good old rent. These co-op flats become centers of violent fannish activity. From their portals emerge tidal waves of fan magazines and all sorts of history-making fannish hoaxes, cults, feuds, manifestos and clubs. Far-famed in song and story, such fan-centers are too significant to be known by cold, mathematical labels such as Apt 2B, 104 E. 77th St. They virtually cry out for affectionate names which tend to make them stand out as recognizable entities.

Great-Grandaddy of all such cognominal dwellings was the far-famed Slan Shack way out in the boondocks of Battle Creek, Michigan; in the dear, dead days some twenty years agone, when fandom was young and

giddy. Of course, I don't have to tell *you* from whence the name was derived, for you doubtless recall A.E. Van Vogt's great yarn, *Slan,* about the young superboy with psi talents galore, who was put down and put upon by all and sundry, even including other slans. Well, back in these by-gone days before science fiction became Respectable, fans were always being put down for reading That Crazy Buck Rogers Stuff, so they identified swiftly with Van Vogt's version of the Ugly Duckling. It became the fashion to, half seriously, consider fans as slans — hence the fannish multi-dwelling above alluded to. This first of all such, the original Slan Shack, was shared amongst some fellows named Al Ashley, Walt Liebscher, Jack Weidenbeck and, later, E. E. Evans (who later wrote some science-fiction novels, as you may recall). Even after the lease was lost, or whatever happens to apartments in the end, the term became generically applied to similar fan-shared apartments.

Sons of Slan Shack

I get a kick out of the amusing and imaginative variety of these fan-coined names. For instance, back in New York in the jolly days around 1940 or so, there was a famous share-the-rent movement among local fans who were, in those post-Depression and pre-War days, generally footloose and fancy-free unmarried types.

There was one called the Ivory Tower — so-called, I am informed by a former resident, *not* in allusion to a secluded residence inhabited by scholarly recluses engaged in intellectual research, but, well, because the *walls* were painted that hue. This Manhattan flat was shared amongst Don Wollheim, Dirk Wylie and Dick Wilson (who later, as you may recall, wrote some science-fiction novels).

When the Tower went the way of all flesh, the boys broke up. Dick Wilson went off with David A. Kyle, Chet Cohen and a fellow called Damon Knight, or, as he preferred to print it in those days, *damon knight,* to a place they named Raven's Roost for some obscure reason, whilst the rest of the Towerites conglomerated at The Futurian Embassy . . . so-called because they all belonged to a club, very big in those dear, dead days, called The Futurians.

Later, around 1941 or so, various of these chaps and some new-comers foregathered in Prime Base (the name was borrowed from Doc Smith's 'Lensman' series, where it denotes the supreme headquarters of the Galactic Patrol or something). Still later, there was another fan-flat called Futurian Fortress, wherein resided Doc Lowndes, John Michel, and damon knight (later who, some science-fiction novels wrote, recall you may).

Around 1943, Larry Shaw (now Ye Ed of Lancer Books), together with a chap who rejoiced in the perfectly delightful name of Suddsy Schwartz, dwelt in an apartment yclept Little Jarnevon. Jarnevon was a planet of wicked critters in the 'Lensman' yarns, which, as the more

acute of my readers may by now have deduced, were Pretty Big in those days.

Grandsons of Slan Shack

The cognominal habit survived the rigors of World War II and was still going strong into the early 1950's, when there was quite a notorious residence around the neighborhood of Columbia University in Manhattan's Morningside Heights, called Idiot's Castle. This was not a fannish apartment, but a full sized residence hotel loaded with small one- and two-room apartments in which, for various reasons and at various over-lapping times, lots of interesting people hung their hats. Prominent among these hat-hangers were Ron & Cindy Smith (who published the Hugo-winning fanzine, *Inside*), and Randall Garrett and Robert Silverberg and Harlan Ellison. These last three gents, recall you may, later wrote some science-fiction novels. Even though I was, myself, a frequent dropper-in at the Castle, memory is blank as to how the name came about.

Then there was an incredibly enormous nine or ten or eleven room monster on Riverside Drive in Manhattan, happily yclept Maison Dinglesnaff during its earliest period, but later called Riverside Dive from its address. Herein were often found Art Saha, Chuck Freudenthal, Dan Curran, Bill Donaho, Dick Ellington and such guests and visitors as they could not persuade to leave. Those were gay, mad days, when four stereos were lined up facing the windows that overlooked the Hudson, and Tchaikovsky's, *1812 Overture* was blasted across the river into Jersey at top volume, the actual cannon-fire on the recording doubtless convincing many shaken Jerseyites that New York was launching an invasion against their shores.

Shortly after this, I started a slan shack myself with the proud name of Toad Hall — remember Mr. Toad's palatial manse in Kenneth Graham's *Wind in the Willows?* Inhabitants were a congenial crew, including Stan Serxner, Chuck Freudenthal, *etc.* Toad Hall became an institution and survived the loss of a couple of leases, the name moving along with the hallowed *lares* and *penates* to other addresses. Addresses and inhabitants may have changed, but the Hall went on into legend, famed for its traditional every-weekend party at which, on toward the last, as many as two hundred droppers-in became habitual.

Also renowned for extravagant party-flinging was a slan shack called The Nunnery, a weird, roof-top residence on New York's fashionable, exclusive Bowery. The previous tenants, it seemed, had been three girls, and for some weeks after the clientele changed over from all-girl to all-boy, mysterious telephoners would ring up asking to speak to "Marge" or "Irma" or whatever. From the exclusive femininity of the former leasees, the name seemed a natural.

Cars, Typewriters, and Other People

Above and beyond the apartment,

fan's automobiles come in for affectionate personal names. Especially back in the 30's and 40's when incomes were smaller and a car was one's only means of travelling to conventions — a slender thread connecting one fan to the rest of Fandom. Some of these vehicles enjoyed names of prestige and dignity, like "Andromeda II" and, presumably, "I" — others bore titles foreboding and grim, such as "Panzerkampfwagen — still more had cute names like "Stfnash" and so on.

There was one affectionately known as "Baby," a long-suffering little Ford communally owned by Futurians in days gone by, which seemed to be forever moving luggage and people in and out of the Ivory Tower and its several reincarnations.

Religious names for cars were once very much In. I hasten to explain these were *fannish,* or just-for-fun pseudo-religious. Like the cult dedicated to Great Ghu (reputedly, a beetle-monster dwelling on the sunny side of Vulcan, who controlled a zombie known as Donald A. Wollheim *via* telepathy). This order of ghughuism, founded by Wollheim and Dick Wilson and John Michel way back in 1935 when we were very, very young, appealed to those with purple souls — remember what I said a few installments of this column ago, about how the hectograph used to duplicate fanzines turned your fingers purple? — and proselytized vigorously on the unbeatable principle that anyone who even *heard* of the Great Ghu, his soul instantly turned purple. This is one great idea, and I have often been puzzled over what would happen if the *other* religions got hold of the concept.

Anyway, in reprisal, a rival church was founded a little later, under the title of The Sacred Order of Foo-Foo, dedicated to cleansing everyones' souls of the purple taint and re-tinting them green. The ghughuists had a Gholy Ghible and some choice ecclesiastical titles: I recall Dick Wilson was Ghuardian of the Gholy Ghrail. FooFooism retaliated in kind.

As latecomer and underdog, FooFoo gained many adherents. Their major activity — at least, in retrospect, it seems that way — was largely confined to naming automobiles. Let's see, now . . . there was Empress of FooFoo, a car Louis Kuslan owned during his college days . . . and Art Widner's first mobile was called The Skylark of Foo. Later, I guess, Widner became sadly engulfed in a rival religion, some foul heresy or other, because the Dodge sedan that bore him to the 1940 World Convention was known far and wide as Skylark of Woo-Woo. I am happy to say that, as a church, Woo-Wooism did not long survive.

Then there was a 1937 Plymouth owned by a well-known fan named Jack Speer (now, I believe, practising law). It was far-famed as The Spirit of FooFoo . . . and I can hark back to a Ford of unremembered or unknown vintage, the Foo-Foo Special, which made a spectacular trip from the depths of distant Philadelphia all the way to the Denver science-fiction convention (and,

after a certain fashion, back), with Milton A. Rothman and Bob Madle at the helm, as it were, plus a clutch of fellow-travellers.

Going behind Ghu and FooFoo to what must have been their ultimate and original source (H.P. Lovecraft), New Orleans fan Harry B. Moore sported a vehicle once, known as The Triumphal Chariot of Cthulhu. Ah — those were the days!

Then there are other mechanisms which become infested with the naming-craze. I, for example, had and still have a tape recorder of staunch heart and sound components, known as Ole Reliable. And many fans have granted cognomens to their trusty, long-suffering typewriters: such as the Corona owned by Ernie Auerbach. known as Slippery Sam because of an insecurely bedded shift-lock. A typewriter of nameless make, owned by some opponent to ghughuism, rejoiced in the title of Sacred Oracle of FooFoo. And so on . . .

Sometimes, I'll freely admit without coercion, you can really get carried away with this sort of thing. Way back in the remote and forgotten era called The Thirties — to be precise, in 1937 — at some convention or other, which one I don't remember at this late date, Fred Pohl and his cohorts commandeered an elevator in the convention hotel for a brief space of time and—in a mood of joyous exaltation — christened it with the impressively Lovecraftian name of "The Shaggoth 6" and rode it madly up and down the elevator shaft for about a quarter of an hour, ignoring signals and shunning would-be passengers — with, all the time, the operator and a frenzied hotel manager in close pursuit not far behind in another car.

I draw a merciful veil over What Happened when the Shaggoth 6 ended its joyful and epic ride and came, as we all have to come eventually, down to earth at last . . . END

The Ghost Galaxies

by PIERS ANTHONY

Illustrated by ADKINS

Out beyond the rim of space they sought an answer to the universe's most fearful question — or death!

I

"Eight point eight one," the pilot's voice counted off over the intercom. Thirty seconds passed. "Eight point eight two."

Captain Shetland's eye passed to the hunched man seated across the cabin, then went on to the port. Already the red shift, or something analogous, was distorting the view of space.

What an anachronism, he thought. A direct-vision port on a Faster-

Than- Light ship. The *Meg II* was fresh from the construction dock and theoretically designed throughout for FTL travel . . . .

"Light speed," the intercom announced, and the port was void. "Eight point eight three."

"Thank you, Johns," the captain said.

His voice did not reflect the tension he felt.

Shetland had passed the speed of light many times, but never with comfort. FTL was not simply a high velocity. The restrictions of conventional physics could not be set aside with impunity. In the captain's mind were four great dreads, and as he closed his eyes a notebook appeared, with an old-fashioned wire-coil binding. On its cover was a picture of a small and shaggy pony and a single word: PRIVATE. The booklet opened, exposing a lightly ruled sheet, and from offstage appeared an animated pencil, freshly sharpened, tooth marks on the latter end. The pencil twirled and wrote:

THE FOUR DEADLY DREADS OF CAPTAIN SHETLAND.

1. Beacon, failure of.
2. Drive, malfunction of.
3. Personality, distortion of.
4. Unknown, the.

It pleased him to note, as always, the alphabetical arrangement of the terms, and the entire mental process of itemizing them reassured him. Fears that could be outlined in a notebook lost some of their power. This was good, for their power was great. One of them had taken, after thirty hours, the *Meg I*.

Stop that! he commanded himself. Even his carelessly wandering thoughts were exceedingly dangerous in FTL.

Shetland's gaze returned to the seated man. This was Somnanda, operator of the beacon.

Somnanda sat without motion or expression. His forehead was high, the hair above it dark but sparse. His long ears seemed to be listening intently for something beyond the confines of the cabin, of the ship itself. His eyes, half closed, were a curious, faded gray, their color suggesting a nictitating membrane. The lips and mouth were more delicate than one would expect in so large a man. Somnanda gave the impression of nobility, almost of sainthood.

On the table before him was a small box with a facsimile of a burning candle above it. Somnanda's unwavering gaze centered upon this light. His two mighty hands rested above the table, blue-ridged veins curling over the raised tendons in back. The fingers touched the surface lightly on either side of the candle.

Somnanda moved. His head swiveled gradually, turret-like, to cover Shetland. "It is well, Captain," he said, his voice so deep and strong that there almost seemed to be a staccato echo from the walls surrounding them.

Shetland relaxed at last. Behind his eyes the notebook reappeared, reopened. The pencil drew a neat line through Dread No. 1.

The beacon was functioning properly—so far.

When a ship entered FTL, the normal universe existed only tenuously. Relative to that ship, to its crew and many of its instruments, planets and even stars became ghostlike, present but insubstantial. External light and gravity registered only as an indication on a meter. Internally, the laws of physics applied as always; *Meg II* required power for illumination, temperature control, the operation of its instruments and the rapid rotation that provided artificial gravity. But physical communication with Earth—and any electronic or laser-based signal had to be regarded as such—was impossible, because the ship no longer occupied the same specific universe as Earth.

There was complex circuitry embedded in the table beneath Somnanda's tapering fingers. But it was psionic circuitry, incomprehensible to normal science. The actual mechanism of communication was largely in the operator's mind and subject to no tangible verification—aside from the fact that it worked.

The light, a flickering mock candle, was the evidence that the beacon was functioning. It lit the way to Earth. No instrument could retrace the course of the *Meg II* with sufficient accuracy to bring the ship home. Not when the distance traveled was to be measured in megaparsecs. Not when the universe itself was indistinct. Only this steady beacon, this metaphysical elastic connection, could guide them back even to the correct galactic cluster. Only Somnanda.

"Captain."

Shetland recovered with a start. "I'm sorry, Somnanda. Was I worrying again?"

The man smiled slowly. "No, Captain. You were not disturbing the beacon. I wished simply to remind you that your move was due."

Shetland had forgotten their game of chess. The lonely hours of space made some sort of diversion essential. "Of course." He closed his eyes, seeing the checkered board. His king was in check. "White, 23. King to King two. No pun intended."

Somnanda nodded. It would be another hour before he replied with his own move, for he, like the captain, was a deliberate man. There was time, and each development was to be savored, never rushed.

"Somnanda," he said. The somber head rose. "Do you know the purpose of this expedition?"

"The Milky-Way Galaxy is only thirty thousand parsecs in diameter," Somnanda replied seriously. "Far too small to test the beacon properly. We are traveling far."

That should be added to the notebook, Shetland thought. The understatement of the space age. The *Meg II's* itinerary was to take her, literally, to the edge of the universe. As had that of the first *Meg* . . .

"Captain."

Why did their conversation lapse so readily? "Again, Somnanda?"

"There is an . . . inbalance . . . in the beacon."

Shetland felt the cold clutch of fear at his stomach. Immediate-

ly the candle flickered higher, a yellowish flash.

Fear was the nemesis of the beacon—no error there! What irony if his own alarm at news of danger to the beacon should extinguish it! He exerted control over his emotions, watched the little flame subside and become even.

This was a temporary measure. Somnanda, a man of polite conservatism, had given clear warning. Something was interfering with the function of the beacon. It was not serious at the moment—but in FTL such things seldom resolved themselves. As the *Meg's* speed increased, so would the disturbance, until firm action became mandatory.

But what was the source? It had to be a man who either knew or suspected their true mission and was frightened by it. The great majority of the crewmen had not been informed of the special nature of this mission and had no way to learn that the *Meg* was establishing records in FTL.

The notebook reappeared. The pencil turned about, erased the first Dread, wrote it in again without the line through the words. It sketched an arrow leading from it down to No. 3: *Personality, distortion of.* Linked dangers.

The pencil hesitated, then made subheadings under No. 3, leaving a space after each: *A. Sommanda; B. Shetland; C. Johns; D. Beeton.* The captain noted the inversely alphabetized listing and frowned, but let it stand. The pencil returned to the first, paused again, wrote:

A. Somnanda—Most experienced & reliable communicator in space. Steady temper. Personal friend.

Was he allowing friendship to influence him? This could not be afforded. The pencil backtracked, crossed out the last two words.

Still, Somnanda was the least likely of suspects. If he lost control, there would be no appeal. No one else could maintain the beacon.

B. Shetland — Captain, experienced. Knowledge of danger. Can *control emotion.*

How can a man judge himself? In the act of writing he had crossed out a word, made a correction: he only *suspected* the various dangers, could not claim full knowledge. Yet his position was unique. He alone had sufficient information to accomplish their mission. He had to exonerate himself or admit failure at the outset. Rationalization?

C. Johns—Pilot (drive mechanic).

The pencil stopped. The record said that Johns was competent, but Shetland had not voyaged with him before. How could he be sure of this man? Or was he allowing himself to be prejudiced because Johns had replaced another friend?

Objectivity was essential. He would have to have a talk with Johns—but not immediately. The man, his schedule informed him, was about to go off duty and would not return until the eighteenth hour. That was convenient for another reason . . . and it was also important not to upset the sleeping schedule. Lack of sleep was one of the surest routes to emotional imbalance.

D. Beeton — Cartographer, apprentice.

The pencil stalled once more. Apprentice. That meant he had never had an assignment in FTL before. Shetland had not even met him. Young, inexperienced and in a position to comprehend both mission and danger. A very likely suspect. But again, the time was not now. Special factors had relevance, and a proper interview was quite possibly essential to the success of the mission.

Shetland turned about and set course for his own cabin. He was not tired, but he intended to sleep.

II

Ship's clock said 19. Shetland entered the pilot's compartment and stood behind the man. "Johns," he said.

The pilot jumped to attention. "Sir." He was a small, somewhat stout man, whose thin blond hair made his scalp seem prematurely bald. His features were regular except for a slightly receding chin. Shetland knew from the records, which were comprehensive, that Johns was an excellent craftsman, well suited to his job. Shetland knew —and tried to suppress his irrational dislike of the man.

"I see we stand at 19," he said, sounding inane in his own ears. "That, of course, is our velocity, in spite of the fact that we schedule the affairs of the ship by that clock. Would you care to translate our speed into something, ah, more specific?"

Johns tried to restrain a patronizing smile. "As you know, sir, the drive is designed to reflect speed in miles per hour, varying exponentially with the passage of time. Our velocity is indicated by the logarithmic dial of the ship's clock. Thus our present speed, relative to galactic stasis at—"

"Assume that I'm an idiot," Shetland said.

"Yes, *sir*!" Johns tried again. "When the clock indicates 1, it means that the ship is traveling at ten raised to the first power, or ten miles per hour. At 2, this is equivalent to ten squared, or a hundred miles per hour. 3 on the clock is a thousand mph, 4 is 10,000 mph, and so on. 9 is already beyond the speed of light."

"Very good. Why, then, do we call it a 'clock'?"

"Because that's what it is, sir. The figure on the dial also represents the time in hours since the drive was cut in. That's the way they engineered it. We have been under way for—" he glanced again at the clock—" 19.12 hours, and our present velocity therefore is—" a second pause to manipulate his slide rule, while Shetland smiled inwardly at the conditioning this exposed—"approximately twenty billion times the speed of light."

Johns looked up, startled at his own words. "Twenty bil—!"

"We travel fast," Shetland said. "Hardly surprising in view of the purpose of this voyage."

Johns nodded, dazed. "Yet. Testing the performance of the drive and shield at the big MPH is a tall order. Takes us right out of the gal-

axy. And we've just about done it already. 19.283 is one full megaparsec per hour. 1 MPH. Over three million light-years in a thin sixty minutes . . . ."

Shetland frowned, his fingers beating little cadences on the panel below the clock. Somnanda saw the voyage as a test of the beacon; Johns saw it as a test of the drive. What would Beeton see?

The pliot, misunderstanding, launched into another explanation. "We have to check it out before turning it over to private enterprise. We know so little about the drive and the part of it that we call the shield. Yet it would be impossible to travel in FTL without some kind of protection. Part of the energy of the drive is diverted to form the shield that isolates us from normal space. It's actually an adaptation of the available Cherenkov radiation—"

It was time for the shock. "Were you assuming that the *Meg II* was going to stop at one MPH?"

John's eyes widened. "We're *not* stopping, sir?"

The intercom came to life. It was Somnanda. "Captain to the beacon as convenient."

Shetland nodded to himself. The beacon had flared. Yet it was not conclusive. He himself had made the beacon react when caught offguard. Every man had his moments.

"Does speed frighten you, Johns?"

Johns licked his lips. "How—how much?"

"Thirty."

Johns stared at the clock. *"Thirty?* Sir, have you any idea how *fast* that is?" He took refuge in his slide rule. "We're doing twenty billion times the speed of light now—and that will just about *square* it, Captain." He shook his head negatively. "To answer your question, sir—no, I can't be frightened by that. I'm used to big figures, but this doesn't mean anything to me. I can't visualize it. So how can I be frightened? Meanwhile, I know the drive can do it, and I'm game to try."

Shetland did not agree with the pilot's reasoning: most men *did* fear what they could not visualize. But it seemed that Johns had survived his crisis and come to terms with it. He could not be considered a prime suspect.

Beeton had to be the one. He would go and pick up Somnanda's chess move, then gird himself for the most difficult interview.

"Why thirty?" Johns inquired. ". . . Sir."

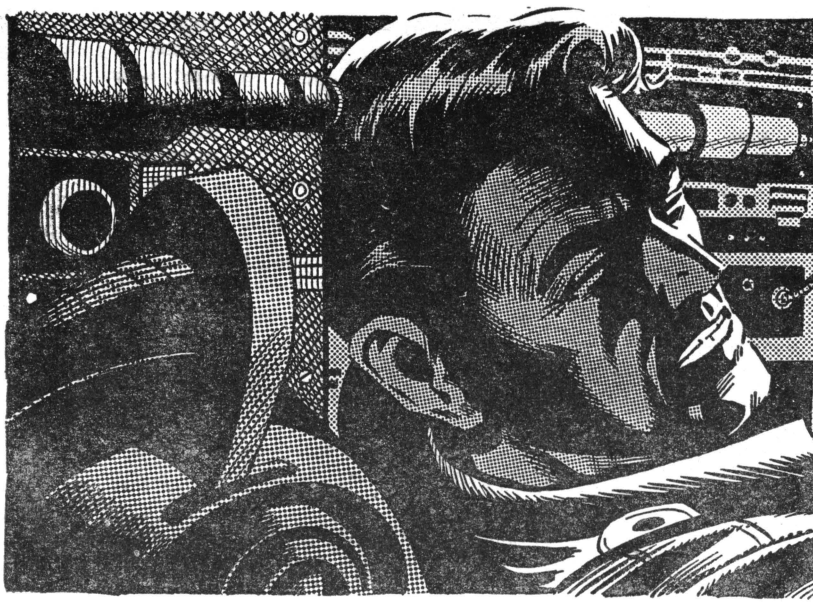
Because that's where Death awaits us, Shetland thought. "Orders, Pilot."

Death orders?

III

Beeton's cabin was typical of what was expected of a young spaceman: the neat military bunk, the foot locker, the shapely pinups on the wall.

Shetland dismissed the pictures immediately. He knew that every man under thirty put them up as a matter of protocol. But after one discounted the window-dressing, a man's room was often a pretty fair indication of his personality.



Nothing. Everything was in order, allowing no personal signs. Beeton was almost too careful to conform. Only one thing showed personality: a chess set on the corner desk, with a game in progress. Even this was no giveaway. Tedium came to everyone in space.

He examined the game with a clinical interest, noting the advantageous position held by Black. This game would soon be over.

Realization struck him. This was no ordinary game. This was a replica of his match with Somnanda, complete to the last move. A game that he had thought existed only in the minds of the two of them. And Somnanda was Black.

"What can I do for you, Captain?" The cartographer had come upon him by surprise.

Beeton was a tall, blond lad. His face had that fresh-out-of-school look: sanguine and unlined, eyes startlingly blue and innocent. But the records placed his age at 24.

"I was admiring your game," Shetland said.

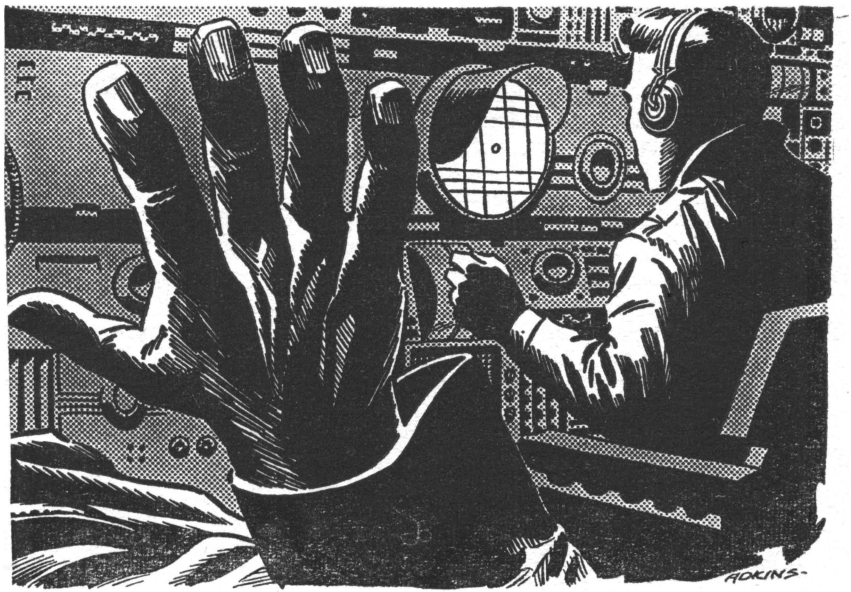
Beeton had the grace to flush. "You might call that a spectator sport, sir."

"As spectator, who would you say had the better position?"

"Well, sir, I'm sure I could win with White."

The captain smiled faintly. "You should know that FTL career men are noted for memory, not intelligence, and that they retain few illusions."

"I'm sorry, sir. I must admit that your defense, while logical from a positional standpoint, is unsound in



the present case. But I do admire your ability to play without a board. I could never do that."

Shetland resisted the flattery, not entirely successfully. He was here to judge, not to be judged, and it was going to be difficult. This boy, the record said, was a virtual genius. "Perhaps, in time, you will show me how to win with White," he said. "It happens that I can see the board and pieces whether or not they are physically present. Just as I can read a book by turning the pages in my memory. Just one of the qualifications of the office."

Beeton sat on his bunk, not wishing to ask directly the purpose of the captain's visit. Shetland did not enlighten him. "Going into research after this trip?"

Beeton expressed surprise. "You know?" Then he smiled ruefully. "But you've studied the records, of course. Yes. Originally those lectures on celestial mechanics and such bored me. I would sit in the front of the class, my eyes fixed on the little box of rubber bands quivering like worms on the professor's desk, while he gave out with the poop. He used to purse his lips around the word . . . but all that changed. I'm going to settle down, get married."

"I'm sure Alice is a fine young woman. Yes, our files are thorough." Fencing, of course — but necessary.

Beeton gave him a curious glance, then made a hint of a shrug.

"Woman," he said. "That's the word that comes between 'wolverine' and 'wombat' in the dictionary." Shetland opened the big dictionary

in his mind and skimmed the page. It was true. "And I want to assure you, Captain, that that megalocarpous specimen on the wall is not Alice." Shetland riffled through his dictionary again, smiled when he found the word. Beeton was playing games with him, forcing him back.

"Do you know how I met her, Captain? I was sitting in a public library, studying a text on psychology, when I overheard this kind of clip-clop, clip-clop coming up behind me. For a startled moment all I could think of was a horse. You know the sound those primitive animals make when some rich showman takes them across a concrete street, the metal-shod hoofs ringing out like castanets. I couldn't resist turning around in my chair to see what could make that kind of noise in a library. Of course it turned out to be two girls in heels. But that horse was still in my mind, and you know, their feet *did* resemble hoofs in an attractive way. Their legs were clean and supple, rather like those of a thoroughbred.

"I laughed out loud. (Now I know why they call them "fillies,") I said. One of those girls heard that, and she came over to ask me just what I meant. Her tone was severe. That was the first time I had a really good look at her, aside from her ankles. She had on a knitted green dress, form-fitting over an excellent form . . . might as well admit it, I was smitten by her appearance. One thing led to another—"

"So that was Alice."

"No. Alice was the other girl. I didn't pay any attention to her that time. She — well, it gets a little complicated. I don't suppose your records cover that sort of thing."

Shetland got the point. The records were illusory. They told him nothing that would enable him to understand this too clever young man. He was being gently told to mind his own business.

How he wished he could! But Beeton was still the prime suspect, and if there was fear concealed behind that voluble facade, the captain had to know it.

"You've admitted that your early scholastics were not remarkable. What caused you to change?" For here, perhaps, the record did offer a take-off point. The shift had been abrupt, and it had been from indifferent to absolute brilliance. There were personal comments by several instructors: "Jumps to accurate conclusions." "An intuitive thinker; never makes a mistake in theory." "Even cheating is not that sharp!"

Beeton's tone was flippant. "Maybe I was afraid, Captain. Afraid that the ghost of my past would come back to haunt me. These days a degree is not enough; there were too many decades of assembly-line doctorates that degraded the magic. They delve into your records, as well you know. If I had left behind me a reputation for careless work —"

Was the young man still taunting him, showing the flag to the bull? Or was there genuine tension now?

". . . though that's an unfortunate way to put it," Beeton was saying. " 'Ghost,' I mean. I always was afraid of the supernatural. Sometimes I suspect that my whole interest in

science was spurred by a lingering fear of ghosts. As though I were trying to shine a light in the dark corners, to prove that nothing nonphysical could possibly hurt me, because there was nothing there. Seems ridiculous now."

Childhood fears. It did not seem ridiculous to Shetland.

For the *Meg II* at this moment the entire universe had become nonphysical. They were traveling at such a rate that an entire galaxy could be traversed in less than a second, and it made no difference whether the ship passed near or through it. How easy to invoke the sense of unreality, to renew the fierce early terrors.

How easy, too, to play upon the credulity of a meddling captain...

"Does the Academy still teach Einstein?" Shetland inquired with a smile.

Beeton smiled too, seeming to relax. "It still does. But of course it's a mistake to assume that FTL disproves his work. The General Theory never did limit an object to the speed of light. Though I doubt that the old gentleman anticipated — what *is* our present speed?"

Shetland did not miss the nervous throb, the slight terror showing in the tips of the fingers. Beeton knew the time, and he could do conversions. His question seemed like a plea for confirmation — or denial.

He looked at his watch. It said 22.9, drive time. "Just over a megaparsec per second. Our mission requires high speed."

Beeton rose to the bait, definitely nervous now. "It certainly does. This voyage will rewrite the text on celestial cartology. My instruments are recording the placement and pattern of every galaxy and cluster within a billion parsecs of our course — though I must admit that our present velocity makes this seem tiny. It will take many years for the computers back on Earth to assimilate the information we collect in hours. But our journey will be over in ten minutes."

Shetland could not conceal his astonishment. "It will?"

"Certainly. It began with the vast primeval explosion that flung matter and radiation in every direction to populate the vacant space. Then gravity slowed this impetuous expansion and brought the universe into a state of equilibrium two billion light-years in diameter. But when the galaxies formed, the forces of repulsion came into prominence, and expansion resumed. Now five billion years have passed since the beginning, and our universe has grown to a radius of three billion parsecs. In moments we stand at the culmination of it all, our mission is over: the rim."

To every man his own justification for the voyage, Shetland thought. To every man his own disillusion.

"Not yet," he said succinctly.

Beeton's innocent eyes focused on him. "You have to stop, of course. There is no point going beyond the rim of the universe."

Shetland spoke carefully. "According to your theory, there should be a cessation of all matter at approximately 23.1 on the clock. I have asked to be alerted the moment

such cessation occurs. None has. It is now 23.2 hours. There has been no 'rim.' We shall not stop."

Beeton turned pale. His breath came in labored gasps. His eyes stared unblinkingly at the captain.

The intercom blared out behind Shetland with startling volume. "Captain to beacon immediately!"

IV

Shetland whirled, paying no more attention to Beeton. He galloped headlong down the corridor, blood pounding in his ears. The shortness of his breath, he knew, was not entirely due to the exertion.

He burst into Somnanda's cabin. And stopped, appalled. The miniature candle, symbol of Earth-contact, was a towering column of fire. Orange light flooded the room, flickering off the walls and illuminating Somnanda's twisted face with demoniac intensity.

Shetland knew instinctively what to do. Terror was destruction to the beacon. He stood there, suppressing every vestige of feeling, quelling his own throbbing pulse with hypnotic waves of peace and security. Members of the crew had fears; these were groundless, based on ignorance. Only the captain had authority to know, and he was not afraid. Not afraid.

Not afraid.

Gradually he extended the oily calm outward. Somnanda was not afraid. No one was afraid. A temporary shock, no more. To be forgotten.

The fearsome color faded. The column dwindled reluctantly, down, down, until it returned to its normal pinpoint above the table.

Somnanda's countenance relaxed. Apparently a disturbance in the beacon represented physical pain to him. His hands remained above the table, fingers splayed, their backs an angry red. His forehead was shining, and rivulets of perspiration were draining down the side of his neck.

"My strength has been overextended," Somnanda said, his words slurred, voice pitched too high. "I can not protect the beacon again. From *that*."

So formal, even after this, Shetland thought. Yet I must talk to him. As Beeton is to me, so am I to this man of the candle. The tension is within me, and it must come out. And when my brain has translated itself into nervous impulses, and these pulses become the atmospheric vibrations which are meaningful speech sounds, and those sounds have been lost in entropy, then will my problem be over?

"A farmer once lost a sum of money," Shetland said. "He suspected a neighbor's boy of having stolen it, but had not proof. So the farmer went and studied the boy as he went about his chores, trying to determine by observation whether he was in fact the culprit. Though the lad performed his duties in the prescribed manner, there did appear to be something surreptitious in his attitude, as though he were trying to conceal guilt. The farmer returned home convinced. Later he discovered the money where he had forgotten it, in his own home. It had never been stolen. He went

again to look at the neighbor's boy, but this time the lad had no guilty look about him."

"The young cartographer looks guilty," Somnanda said.

"He looks guilty," Shetland agreed. "He seemed almost normal until I challenged his evolutionary theory of the universe. Then — this. But I can not condemn a person on such circumstantial evidence. I too, in the last analysis, am afraid."

Somnanda's brow wrinkled. "I am not entirely familiar with this theory. Is there something about it that affects the nature of our voyage?"

Shetland smiled inwardly. In Somnanda's view the purpose of this journey was merely to test the beacon. The validity of one theory of the universe or another would have little bearing on that, unless one theory embodied an inherent threat to the beacon. That threat was real enough — but it stemmed from internal problems, not external.

"The evolutionary theory is one of several evolved — again, no pun — to explain the observed state of the universe," Shetland explained. "There are numberless clusters of galaxies in view from Earth, each retreating from every other one. The situation can only be explained by postulating a general expansion of the entire cosmos. But the nature of this expansion is open to doubt. This particular theory has all matter originating in a gigantic nucleus five billion years ago. When it exploded —"

"Now I understand," Somnanda said. "That would make every galaxy approximately the same age. I had assumed that the more distant ones were older."

"They may well be," Shetland said. "The information we are gathering now may answer that question when we return to Earth. But it is my conjecture that this theory is invalid, because we have already passed the farthest limit the evolutionary universe could have reached, and the pattern has not changed."

"Would this be reason to frighten the cartographer?"

Shetland paced the floor. "I don't understand why. That's what holds me back. The elimination of a single theory should be of no more consequence than the elimination of an invalid strategy in the course of a chess game. An inconvenience, certainly. But hardly frightening."

"Unless the alternative is more dangerous."

"The obvious alternative at this point would be the "Steady State" theory, which has galaxies continuously forming and being forced outward by the constant appearance of new matter. Since there is no 'beginning' the universe is steady in space and time and does not evolve. Individual galaxies, however, *would* evolve, and we should discover old ones as well as new ones. And the universe would be somewhat larger."

"Larger?"

"Because the evolutionary universe would be in its infancy, limited by the five-billion-year span since the explosion. But the average galaxy will survive for ten times that length of time, and if we assume the

expansion to be exponential, the universe could eventually attain a radius of ten thousand teraparsecs, give or take a decimal or two."

Somnanda digested this. "One teraparsec is —"

"A million megs. But our drive will take us there in just thirty hours."

"That would be the size of the steady state universe, since it is not in its . . . infancy?"

"If my conjecture is correct. The cartographer, actually, should understand such things better than I. He is attempting to map the universe."

"Perhaps he knows something that we do not."

Shetland paced the floor again. "He never mentioned steady state. It was as though it didn't exist for him."

"Possibly he has reason for his fear. This should be ascertained."

What decision had the captain of the *Meg I* made? Had he waited until thirty hours to question his "Beeton"? Or had some unthinkable menace consumed his ship at the rim of the steady state cosmos?

The decision of the prior captain had been wrong. How could Shetland improve upon it, in his ignorance?

V

The ship's clock stood at 25 when Beeton entered the beacon room. "Reporting as directed, sir."

Shetland was afraid to waste time. He watched the candle as he spoke. "I believe you are afraid of something, Beeton, and it is important for me to understand. Such emotion affects the beacon."

Beeton met him with a steady gaze in which there was not a trace of fear. "May I speak frankly, sir?"

When a crewman felt it necessary to address that question to the captain, the result was seldom pleasant. "You are directed to do so."

"I'd like to rephrase the question," Beeton said, dropping the "sir." He was intelligent and had probably anticipated this session. "I think I'm afraid of the same thing you are. Will you admit that much?"

"I am afraid of many things. Continue."

"We fear a very real danger, and it has nothing to do with the beacon. You and I know that there is death waiting for us at the edge of the universe. One ship has already been taken, perhaps others."

Somnanda looked up but held his peace.

"The important thing to realize is that this was no freak accident. We face the same demise, unless we reverse the drive."

"No," Shetland said simply.

Johns poked his head in the entrance. "Am I interrupting something?" he inquired. "My assistant took over long enough for me to inquire —"

"You should listen to this," Beeton said with authority. Somnanda nodded.

Shetland glanced from one to the other. "Was there a mute agreement between them? How many were anxious to abort the mission? The situation was uncomfortable.

Johns also seemed to be ill at

ease. "Look, if you want me to go—"

Shetland took command. "Mr. Beeton believes that our course leads to danger. He is about to explain his reason for his request that the *Meg* be reversed prematurely."

There was silence. Was the beacon flickering more violently than before? Whose tension was responsible? "Go on, Beeton," Shetland said firmly.

The cartographer swallowed, a nervous young man now that it had come to the point. The flame *was* brighter. "You are familiar with the 'steady state' cosmos," he said, jumping, as the record advised, to an accurate conclusion. "I had expected this theory to be eliminated by our findings. I had — hoped."

He looked at the increasing flame, then averted his gaze. "To most people, there is small difference between one concept of the universe and another. After all, it has no discernible effect on our daily lives. But to those of us who voyage into the extraordinary reaches, it becomes a matter of life and death."

"Say what you mean," Shetland growled.

"At the center, where the galaxies are young, we are safe. But at the rim they are old. Beyond the rim—" He paused in the yellow light. "Beyond the rim they are dead."

He looked at each of the others in turn and met only bafflement. "Don't you see? They have passed on. There is nothing beyond the rim but ghosts, the malignant spirits of once living galaxies."

Shetland looked at Somnanda, who shook his head negatively. He looked at Johns, whose mouth was hanging open.

"You're crazy!" Johns said.

Beeton jumped up, and the flame leaped with him. "No, no," he cried. "You have to understand. You have to stop the ship before it's too late."

"The supernatural is no threat to us," Shetland snapped.

"Captain!" Somnanda's voice was urgent. Shetland whipped around. The beacon had burst into an inferno, destroying itself.

"Stop the ship!" Beeton screamed. "The ghost is out there—"

Suddenly Shetland's sidearm was in his hand. The tableau seemed to freeze at the moment: Somnanda in the corner, half standing, agony on his face, sweat shining in the orange glow. Johns, staring at the young cartographer, confusion and incredulity distorting his own features, scalp red under the thin hair. Beeton, standing with one fist in the air, mouth insanely wide, lips pulled back from teeth.

One word from the captain would ease this threat. He had only to agree to stop the ship. To set aside his orders.

Then Beeton was falling, engulfed in a sparkling cloud. The gas from the capsule Shetland had fired was dissipating already; but Beeton would be in a deep coma for at least twelve hours. Far past the crisis point.

"Captain." Somnanda's voice cut through his reverie, as it always did. "There is little doubt that the young man's terror was the cause of the disturbance. But it should have abated, had you agreed to reverse the drive."

The flame was normal. "I could not do that."

Johns made a sound. "You knew how simple it was to stop the trouble — and you cooled him anyway?"

"Yes."

Johns stared at him with the same expression he had turned on Beeton before. "Captain — now I'm not so sure Beeton was the crazy one. Maybe he was *right*. You never let him make his point."

Shetland looked at the unconscious form, so peaceful now. "If I had verified his suspicion, Pilot, his terror would certainly have extinguished the beacon."

"Verified his —" Johns was shocked. "You admit it! There *is* a ghost out there!"

"Not a ghost. A ship. A ship that ceased contact suddenly. My orders are to investigate. I shall investigate."

"By heading straight into the same trap?"

"Those are my orders."

"Orders!" The flame was rising again. "Captain, I can't agree to that."

Shetland studied him sourly. "*You* can't agree, Pilot?"

"No. I can't. That ghost will eat us too. We've got to turn back."

Beside the growing flame, Somnanda's head turned to bear on Johns.

"I see it now," the pilot said. "Beeton was right. After the galaxies die, they are ghosts. And they hate the living." He looked around, saw

the flame. "Don't you understand? *We must reverse the ship!*"

The flash, the sparkle, the dissipation — and the pilot joined the cartographer.

The flame subsided. Somnanda and Shetland looked at each other.

"Your move, Captain."

The chess game: Somnanda could think of that at this juncture! "I only hope my personal situation is better than that of my pieces," he said. "I will have to consider my move."

"Your situation is good," Somnanda said cryptically.

Shetland hauled the two unconscious men to the side of the cabin. "I think it best to keep these out of sight of the other crewmen, for the time being," he said. Then, sensing Somnanda's curiosity: "It may seem unreasonable to sacrifice two human beings in this fashion, rather than accede to their rather simple request. But I can delegate their functions if necessary, while I could neither humor their fancies nor allow their emotional stress to destroy the beacon." Yes, he felt the need to justify himself to Sommanda and cursed his own frailty.

"You seem unreasonable." From this man, this was an observation, not an insult.

"I *am* unreasonable. Sometimes that is the only course — just as an apparently illogical sacrifice is at times required in order to win at chess." The chess analogy kept running through his mind. Was it valid?

Somnanda waited.

"Extended trips into FTL have been rare, so far," Shetland continued. "Evidence is therefore inconclusive. But there appears to be a certain . . . distortion in many personalities as velocity increased. Perhaps it is a side effect of the drive, or simply an emotional reaction to isolation from the normal universe. But it is one of my dreads, and I always watch for it. That's why I'm careful about revealing my orders prematurely. Individual judgment can not be trusted in FTL. Normal people are apt to become aware of it. It is futile to point out such aberrations to the victims. They are, in effect, mental patients. I think you have seen some of this, now."

"Yes."

"The captain is not excluded," Shetland said, smiling wearily. "I have preoccupations and I entertain doubts. I question the wisdom of this voyage, its apparent expendability, the attitude of certain crewmen, the evidence of the supernatural. I do not believe, at this moment, in the beacon — that is, that it represents any valid connection with Earth. But if it is real, why not the ghost of a galaxy? I do anticipate extinction at the thirtieth hour — but I will not reverse the drive."

"I understand."

"Because my own judgment is suspect. I can rely on only one thing to be objective: my orders. These were presented to me before the voyage began and were reasonable then; they must be reasonable now. If I desire to modify them, it is because my present insight is biased, not my earlier one. I must therefore uphold what seems unreasonable to me — and I shall."

VI

The clock read 28.8 hours. One teraparsec per second. Soon the voyage would really be over — one way or another.

Shetland found himself in Beeton's room, looking at the chess set. Why had he come? Because there was a lingering uncertainty as the thirtieth hour approached? Or simple guilt for overriding that uncertainty?

He saw a picture of Alice, smiling for a man she might never see again. Would she be widowed before her marriage, all because a certain captain's orders meant more to him than his common sense?

It was uncanny, the way in which the young man had divined the moves and kept up with a game the captain had never advertised. But this was a private game. He swept the pieces into the box, folded the board. Beneath it was a paper, previously hidden. Shetland picked it up and saw a series of notations. They seemed to represent the strategy of a game in progress. His game?

He applied the notes to the game in his mind. They checked. But the moves were not as he would have made them. They started at the present position, but the style was radically different. Beeton had said he could win with White — and these notes, incredibly, proved it. Beginning with a highly questionable queen sacrifice, White forged to a forced advantage in the game's thirtieth move. The series violated many of the tenets of good positional play — yet, he saw now, was quite valid.

He would not use it, of course; the genius was not rightfully his. But he would show this interesting lesson to Somnanda: how independent and bold foresight could convert a certain loss into victory. Book play was not always valid.

By the thirtieth move.

Coincidence?

Or a message that his stupidity had prevented Beeton from delivering? Was it natural to assume that such a brilliant mind had been mistaken, in the one case that counted? Or had the cartographer's terrible fear been based on fact, not fancy — while the distortion merely prevented him from making himself sufficiently clear?

Had Johns also, finally, responded to the actual message, seen its validity?

Assume, for the sake of argument, that Beeton had been right. That death did wait at the thirtieth hour. That the situation was hopeless because the man in charge refused to deviate from the book, from his orders, no matter what.

In chess, the answer had been a total revision of strategy. The book had to be thrown away. In life —

The chessboard image in his mind faded into a figurative map of the universe. Galaxies of the steady state hurtled outward, born in the center as pawns, dying of old age at the rim as kings.

And then, as it were, the pieces came to life. The pawns were babies, the kings old men. The board, which was the universe, became a city without buildings. The babies were born spontaneously in the center

and crawled busily in all directions. As they made their way outward they grew into children, and some had bishop's hats and some had horse's heads. Farther out they developed into men and women, and the men were castles and the women queens.

Finally the old kings staggered to the rim to die. The size of this city was governed by the age of the inhabitants. Where they became too old to go out farther, the city ended. Most of them died at fifty moves. The rim was a desolate grave. There was no one to bury the bodies; where they fell, they lay, they rotted, and the white bones guarded the memory of what had been.

Then, incredibly, a child appeared at the rim. By some freak it had bypassed age and entered the domain of death long before its time. A child named "Meg."

The ancient bones quivered with rage. No living thing should be allowed to desecrate the mighty graveyard. The angry spirits gathered their forces, concentrated their ghastly energies, opened their ponderous jaws and said:

"Captain! Captain!"

It was Somnanda. Shetland shook himself awake to see the beacon room. The yellow light was rampaging again, and this time he himself was the cause.

"Reverse the drive!" he shouted into the intercom.

Now it was 16.49 — but it was speed, not time. Once more the captain of the *Meg II* stood behind the pilot, pretending that nothing had happened.

"Captain," Johns said. "Captain — I want to say something."

What was there for this man to say? That he resented being gassed, then revived to learn that his assistant had reversed the drive at 29.34, on the orders of that same captain who had shot the pilot down for urging this?

"Captain, I just wanted to apologize. I don't know what came over me. I never lost my head like that before. I don't believe in ghosts. I just — somehow I couldn't — what I mean is, you did the only thing you could do, and I can see that you were right all the time. I'm sorry I forgot."

Johns was apologizing for his own distortion, now that it had abated with the speed of the ship, and he was able to see it for what it was. A distortion that was not his own fault.

"We were all a little on edge," Shetland said, discovering that his dislike of the pilot was gone. Was there any point in trying to explain?

16.36. Thirteen hours of deceleration, with the *Meg II* traveling at only a tenth its former speed with every hour that the clock subtracted. And still approaching a rendezvous of terror with fantastic velocity. Twenty-nine hours of deceleration would bring it to a halt in space, at almost the exact spot they would have passed in the thirtieth hour of acceleration. The exponential series that was the drive was a remarkable thing.

16.34. Only when they came to a dead halt, relative to their starting point, could they release the drive

and apply the chemical maneuvering rockets, in order to turn the ship around and begin the home journey. Then back, accelerating once more to —

Hell broke loose.

The ship bucked violently, flinging Shetland to the far wall. Shooting pains went through his left shoulder as another upheaval bounced him on the floor. An agonized keening sounded in his ears, and a red fog clouded his brain, seeming to obscure all vision above the horizontal. Dimly he saw the pilot's legs wrapped around the bolted-down stool; Johns, more alert than his captain, had held his position. There was the smell of burning insulation in the air.

"Cut the drive!" Shetland roared. He tried to stand up, but the heaving room brushed him aside. The clamor of the suit-alert began; the hull had been pierced.

"Captain," Johns' voice drifted back from a far distance. "We're in FTL. We can't —"

"CUT THE DRIVE!"

Johns moved his hand, and miraculously the ship was quiet. Shetland lurched to his feet, heedless of the pain.

The alarm had ceased. Someone must have repaired the damage already. That man would get a commendation . . . his hands, of their own volition, groped for and found the archaic regulation fire extinguisher, not obsolete after all, as smoke curled up from the panel. Suddenly the unit was blasting noxious foam all over his boots. He turned

it, already feeling the biting cold; crystals of ice flew off like broken glass as he tramped toward the control panel.

"Stop, Captain!" Johns cried. "No need, no need. The power is off."

Shetland lowered the extinguisher. Now he had time to assess his injuries. Pain, for the moment, was masked; it was there, but the enormity of it would only be felt later. He was surprised to discover no blood. He felt along his left arm, realizing that the trouble with the extinguisher had been due to his one-handed control. The left hand was useless, though there were no breaks.

"Captain." Why did he always drift into contemplation, even in a crisis? "Captain —" the pilot's voice was shocked. "The instruments are registering!"

"That's what they're for," Shetland said shortly.

"But we're in FTL!" Johns, so capable in the crisis, was now falling apart. "The drive is off. The shield is down. Why aren't we dead?"

Shetland had understood the situation the moment the ship bucked. But he was not certain he could explain it to the pilot readily. Johns might have difficulty accepting the truth.

"Do you believe in ghosts?" he inquired.

Johns stiffened. He had already denied superstition. Shetland sympathized; but this was necessary.

"No, sir," the pilot said.

"Look at your instruments," Shetland commanded. "Tell me what's out there."

Johns looked. "We're approaching an object of galactic scope at just under the speed of light. Approximate mass —" He faltered.

"Go on, Pilot."

"Sir, I think the instrument is broken."

Shetland replied with deliberate cruelty. "Do I have to teach you elementary navigation? Where are the warning lights? You know the instrument is not broken."

"But it can't be —"

"Don't argue. What does it say?"

Johns seemed to shrink inside himself. His lips stretched to form the words his mind rejected. "It says — it says the galaxy we're approaching has no mass."

Shetland smiled grimly. "I ask you again, do you believe in ghosts?"

VII

"Yes, there *is* a ghost," Shetland said, as the *Meg II*'s hull vibrated to the impact of her chemical propulsion. She was maneuvering for a position to begin the return voyage.

The four of them were in the beacon room again, watching the steady flame. "All of us had some hint of the truth," Shetland said, "but we were blinded by our separate conceptions of the mission and by our mutual dread of the unknown. We tried to exclude the supernatural — not realizing that when the supernatural is understood, it becomes natural. Cartographer Beeton was closest to it —"

"But I wasn't able to face emotionally what my intellect showed me," Beeton said. "The thing is so incredible —"

"I still don't follow you," Johns protested. "We're alive, and there's a — a thing out there. I'll admit that much. But nothing in the universe is solid enough to rock a ship in high FTL, and we were at 16.34. That's a light-year per second! But we were battered so badly that a crate of beans broke loose and shoved itself through the hull. Or tried to." He laughed. "Wouldn't *that* be an epitaph for a lost ship: torpedoed by a can of beans in FTL!"

"I, too, am perplexed," Somnanda said. "I understood that it was certain destruction to drop the shield while in FTL. Solid matter can not exist at a light-year per second."

"We phased in with the ghost," Shetland said. "Beeton, things are clearer. Finish your explanation."

Beeton plunged in happily. "As I was trying to say at an earlier occasion, but somehow couldn't quite put into sensible words: At the center of things, a galaxy is young. But in the course of fifty billion years or so it ages, and like an aging man it changes. For one thing, it puts on weight, becomes sluggish. A galaxy in its late prime is an unbelievably massive thing — so dense that its surface gravity prevents its own light from escaping. Within it, nevertheless, breakdown continues, and the prisoned energies — well, we have had no experience with such a state.

"Eventually all matter is gone — but there is still no escape for that phenomenal complex of energy. We are left with a galaxy whose material portion has passed away, but which still exists as an entity. A ghost."

"The ghost of a galaxy!" Johns said. "But that shouldn't affect —"

"You forget that the ghost is moving," Shetland said. "That un-galaxy is traveling at rim-velocity: 16.04, ship's clock. Since there is no other —"

"Which means *it* determines stasis for this area of space!" Johns exclaimed. "Velocity is meaningless in the void. It has to be relative to some mass, or—"

"Or some ghost," Beeton put in. "Apparently our laws of physics change, here. We've discovered a lot more than a galaxy."

"So we decelerated to within light speed of the ghost, and the shield came down automatically, and left us in normal space. Even at the fringe, those energies were overloading the drive—" Johns paused. "But what would have happened if we had landed *inside* the ghost?"

"Or even traveled through it in FTL," Somnanda said.

Shetland considered. "I suspect the nature of space itself is altered within the ghost. The *Meg I* did unwittingly enter it . . ."

There was silence as the implication sank in. Was this the final evidence that man was limited after all, in spite of his limitless ambition? Hemmed in by numberless and deadly ghosts . . . or was their very existence a new challenge, greater than any before? What would the first explorers find, when they parked their fleet and penetrated, carefully, the fringe of that monster?

"Captain."

Shetland looked up. "Your move, Captain." END

ENEMIES OF GREE

by C. C. MacAPP

Illustrated by MORROW

The battle was between Mankind and the Slaves of Gree — until a third force entered the war!

I

The Gree excavation team was too far out on the sand-flat for Steve Duke to see what they'd dug up, but the heavily-muscled Gjiss had stopped digging and were clustered around. The humanoid in charge — one of the equally stocky but less muscular Overseer race — had stepped into the small auxiliary ship, no doubt to report via visiphone.

Steve lowered the glasses, which weren't much use anyway in this thick burbly air, and let his eyes rove. Safely above the Gree team (having learned their lesson) circled a pair of the huge leathery-winged creatures that seemed to be the plan-

et's fiercest predators. Much nearer, only a few hundred out and below his spy-spot at the edge of the thorn-tangle, he could see five or six of the peculiar semi-intelligent red-furred beasts called ull-ulls, crouched in the thorny sheltered pathway they'd built from this hill-grove, across the sand-flat to the next.

The Overseer emerged from the ship and gave orders to the Gjiss, who lined up and began passing something along from the shallow excavation. Steve tried the glasses again, but the morning was getting on and the air was too bumpy, so he settled for the guess that a skeleton of some kind was being transferred to the ship, bone by bone.

Carefully (a man could fall, even in this low gravity, and impale himself on giant thorns) he began picking his way back into the tangle. A small flying mammal, with wings the size of his hands, hopped about him, chittering and showing its sharp little teeth. Other creatures hissed or snarled, but only in passing. This one seemed to have adopted him for its particular hate.

Near his destination, a red-furred form moved from his path, retreating just far enough so it could watch him through the tangled limbs. For perhaps the fiftieth time he paused and made little coughing sounds, but though the beast cocked it head at him and made soft replies, it would not come any closer. While he squatted there, the small flying thing darted toward his hand as if it might actually bite. Annoyed, he made a half-hearted swipe at it, and it moved out of reach, chattering in rage. When he arrived at the chopped-out listening post, the flying nuisance turned and flitted away. It never followed him into the post.

Fazzool, the B'lant, looked up from his radio receivers. Steve said, "I see your pet ull-ull's hanging around again."

The gray-hided humanoid grinned as much as the thick skin and blunt features would permit. "It is you ze ull-ull likes. I zink it is a female."

Steve got out a large handkerchief and swabbed at his face. Here inside the tangle it was cooler, but more humid. "They dug up something out there. Anything on the radio?"

"Yes. A skeleton — humanoid — and zere were civilized artifacts. Ze Overseer at zis end suggested zis was ze race zat brought ze ull-ulls to zis planet. Anozzer Overseer at ze ozzer end told him it was not zis one's job to speculate about zat, and anyway what was it doing buried on ze sand-flat? Ze one at zis end said ze way ze flats get flooded every year, zat could happen accidentally."

Steve used the handkerchief again. "Well, that's something, anyway. Where's Ralph?"

"Downstairs."

Downstairs meant a hundred feet lower in the tangle, where Steve and his two companions had their meager cache of supplies and equipment. He found Ralph Parr — grizzle-bearded, Earth-born, a novice in space and in the anti-Gree forces, but no stranger to violence — checking power-packs in the laser weapons. Steve told him, "We'll be busy tonight."

"How so?"

Steve said, "They've dug up something I've got to get a look at."

Parr finished with a gun and leaned it carefully in the fork of a limb. "Any change in plan?"

"No. We'll try it the way we worked it out. Meanwhile, I'm going to get some sleep, if I can."

II

After sundown there was always a heavy dew, if not rain, but at least the temperature was bearable. The three of them worked their way down to solid footing (if you could call a deep layer of old dead limbs solid), then moved cautiously toward an ull-ull tunnel they'd used before. From there it was a few hundred yards to the edge of the tangle, where the ull-ull pathway headed out across the flat. Steve peered out into the crude vaulted pathway, then led off. He blundered into a thorn; cursed softly. The tough-hided Fazzool chuckled. The ull-ull's didn't keep these pathways very clear. That carried an advantage, though — Gree patrols weren't likely to use them.

From behind and from ahead in the next tangle, came the beasts' forlorn-sounding cries, "Ull . . . Ull . . ." It was fairly dark now. This planet had no moons, but a distant companion of its sun was up, giving a little light. They reached the next tangle, and now it was really dark; but the tunnels were wider than the pathways, so the going was no harder. Occasionally, besides the howling, there were the nervous coughs of nearby ull-ulls. Steve was used to the musky smell of them and the damp smell of their fur, by now. He blundered into another thorn, but clamped his mouth on a curse. Somewhere here this tunnel forked, and the wrong turn led right into the middle of ull-ull town . . . Here it was. He took the correct turn, and fifteen minutes later they reached the edge of the second tangle. It was good to have even the faint light again.

Before leaving the knoll he paused, listening. Somewhere close, several ull-ulls where chewing on the viny growth. When they wanted a new tunnel, they simply *ate* one, at their leisure. He moved forward. There was no sound out on the flat except the faint sighing and grating of sand in the breeze. From here, the Gree camp was a glow in the foggy air.

When they were fifty yards out in the pathway he heard a cough ahead and stopped. The dew felt suddenly clammy. He could make them out, vaguely; several big ull-ulls crouched in the pathway staring toward him. A full-grown male ull-ull was close to eight feet tall, and it didn't help much that a third of that was neck. They were almost bipeds — they *could* stand erect, or run, on their ludicrously stumpy legs—but their long gangling arms, or forelegs, reached the ground so that their spines were usually at about fifteen degrees from the vertical. They had an odd loping gait in this gravity (they'd evolved in a higher one) with their heads held high, swiveling as they peered about them. Running seemed to be their natural first recourse. However, they'd fight when

cornered or infuriated; and after all, this *was* their pathway.

The leading one growled and took a few shuffling steps forward.

Steve, gripping his pistol, swore under his breath. Even if a laser flash weren't visible to the Gree camp, it would make a loud burst of static. He said softly, "Back up, slowly." He himself retreated step by step. There hadn't been time to study the beasts' habits much, but he coughed gently, trying to imitate them and sound conciliatory.

They hesitated. He whispered to Fazzool, "Cut."

But already the B'lant was busy with a pruning tool. Seconds later, he appeared outside the pathway and moved up near the beasts to draw their attention. Steve heard Parr squeeze through, gasp and let loose a string of soft curses. Steve, the tension out of him, grinned, backed a few steps and eased through the opening, avoiding the thorn that had got Parr.

As soon as he was out, the ull-ulls bobbed past. Two or three of them coughed at him, but there were no more growls.

Fazzool had cut the hole on the side away from the Gree camp; probably a good idea. Steve peered through the irregular latticework toward the glow. "Let's get through and get started. We'll have to crawl the last hundred yards or so."

Fazzool went back inside and cut at the other wall. Before they left, they rewove the lattice as well as they could, trying to hide cut ends, then started toward the glow. Now there were two dangers. One was low-flying Gree patrols; the other was the flying predators and whatever else might rove the sand-flat. However, they got within a hundred yards of the camp without any trouble. Steve moved close to Fazzool. "Your stuff ready?"

"Yes."

"Okay, then." Steve glanced at his chronometer and watched the B'lant crawl away, making a wide circle of the camp, various bundles on his back. He felt better when he saw how well the drab overalls blended into the sand and mist, a few yards away. Now he lay waiting, uncovering his luminous chronometer now and then just long enough to glance at it.

The time finally arrived. He glanced at Parr and began to crawl toward the camp.

This wasn't really a military camp. This planet — at the very tip of the galactic spiral arm along which the metal Gree-creatures had first invaded — was not only far from any strong region of Steve's side, but was also worthless as either a base or a source of materials. In fact, Steve thought, if his superiors, the Effogan High Command, had known just how trivial Gree's interest in the planet was, they probably wouldn't have gone to the considerable trouble of landing him here. But they'd gotten a hint of something peculiar, and here he was.

The inner perimeter of the camp consisted of about fifteen of the larger ships in a loose circle. Inside that, four transports served as barracks, messes and recreation halls.

Part of the area was devoted to parking for the small ships and aircars used on patrol or field trips. There was a cluster of temporary buildings that probably housed the archeological labs and equipment and a couple of open recreation areas.

A hundred yards outside the circle of ships was a fence. The expedition had taken a cue from the ull-ulls and cut twelve-foot lengths of the twisty, giant-thorned vine to form a stockade against predators. Sand mice had forsaken their usual scant diet of scrub-grass and flood debris to move into a thorny barricade and were gnawing loudly enough to mask a few slight noises.

Sentries in pairs slouched around inside the fence, grousing listlessly about the dew, the guard-duty, the chow, the uselessness of this fool's errand on this worthless planet. Most of them were Gjiss and spoke B'lant, because that was easier for them than English. The Gjiss weren't exactly stupid, but they ran more to muscle than to quick wits, so there were B'lant and human sentries too.

A loudspeaker grumbled somewhere, announcing the change of guard. Steve squirmed out of the gray coverall, glanced to make sure Ralph Parr was doing likewise. They scooped sand over the garments and crawled close to the fence. The sentries had stopped pacing now and were waiting impatiently for their reliefs.

Somewhere beyond the camp one of the flying predators roared.

There was a silence as all the sentries faced that way. Another roar, then an outburst of shrieks and bellows. Troopers scuttled to the crude shelters of thorn-vine scattered along the fence. Loud-speakers began chattering; crews ran for ships to man weapons. There was a real clamor now in the sky beyond the camp, as if all the flying meat-eaters on the planet were gathered in one big donnybrook. Steve saw Ralph Parr grin. A large part of that noise was Fazzool's taped records. To make it authentic, though, there were chunks of meat aloft, drifting with the wind, buoyed up by small grav units; and there really *was* some fighting going on. The creatures sounded as if they were tearing each other to pieces — without, Steve knew, actually inflicting more than a few gashes on each other.

He got to a crude gate, fumbled for the fastenings, had to use his cutters. Searchlights atop the ships were slashing at the sky now, dimly picking out twisting, circling forms in the mist. He and Parr tugged the gate open, got inside and closed it behind them, getting a few thornpricks in the process. Now the clamor was beginning to fall off as the meat was all gulped up, but predators were flapping overhead somewhere, paying off a few last debts. Steve left Parr where they'd come in and joined the sentries going off duty, toward the open mess hall. He left them and walked boldly to one of the temporary buildings where a light showed.

If he'd guessed right, a team would be working on the skeleton dug up that day.

He knocked. Presently the door

opened. A B'lant Tech scowled out at him, glanced at his Gunner Third insignia, and looked less truculent. "What is it you wish, Gunner?"

Steve said in B'lant, "I hope I disturb nothing. I'm officer of the guard. After the excitement, I'm just checking around, and I saw the lights."

The humanoid's blunt features relaxed. "We are only finishing a rush job. Everything is all right."

Steve hid his elation. Now, with luck . . . He made as if to leave. "Fine. I'm sorry I bothered you."

The Tech said, "You speak B'lant very well."

Steve turned back, smiling. "Thank you. I have been on Ypness, and Guntu, and Asbezzee. Rough worlds for a human, but magnificent."

Now the stiff B'lant smile appeared. "You have seen Guntu? That was my Hive world! Why don't you — if it is possible — step in for a moment, eh, out of the drizzle? We are really sitting around drinking *nazz* and talking about this skeleton which puzzles us." He stood aside invitingly.

"Why, thank you." Steve went in and let the Tech pour him a boiling bowl (in this atmospheric pressure, really hot) of the aromatic, peppery liquid. "Ah," he said, sipping and pretending to enjoy it. "It's been a long time." He glanced at the bones assembled on the big table. "Is that what they dug up this morning?"

"Yes." A Tech Third spoke up; no doubt in charge of the team. "Odd, eh? Note the elbow joints. It must have had unusual muscle arrangements for rigidity."

Steve looked. "Well . . . I know very little about this business, of course. But it looks like a Sabril skeleton to me."

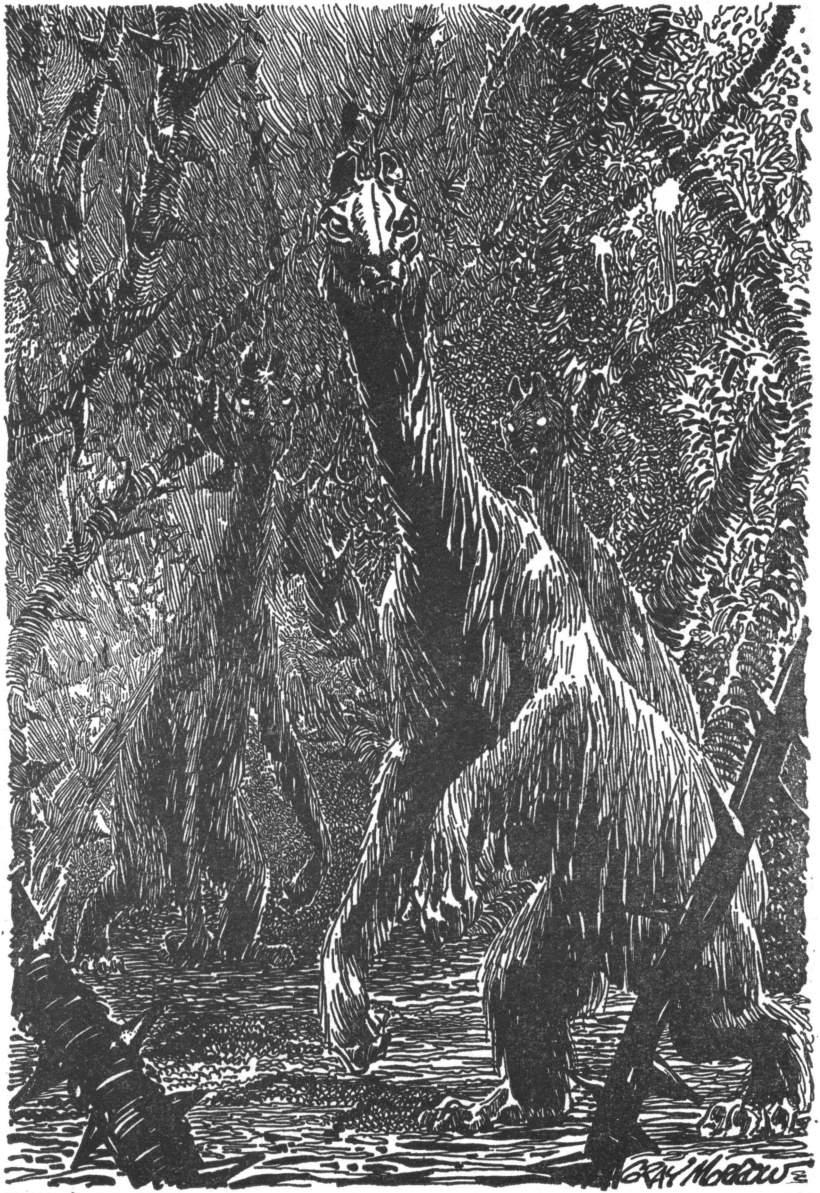
"No, no," the Tech Third said, moving to the table and jabbing with a forefinger. "The elbow was completely double-jointed. There is nothing to stop it bending backward, see?" He looked thoughtful. "Although you are right. Except for the arms, it *is* much like a Sabril. The peculiar shoulder-slope, and the lankiness . . . No; this could hardly be a deformity. But it is not too far to the Sabril region. Possibly we should look for an unnoticed variation there."

Steve said, "I understand there was a weapon and some kind of communicator."

The Third nodded. "A simple radio, worn at the waist. The weapon was a sidearm, a pellet-thrower, based on chemical explosives. The pellets were all gone — perhaps fired at some predator that killed this humanoid. Anyway, the race must have had space travel, even if not the null, for this skeleton is no more indigenous to this planet than the ull-ulls."

Steve said, "I was watching a band of those the other day. They must be pretty intelligent, to build those pathways."

"We think not," the Tech said. "We've tested them under incentive and drugs and torture, as well as observing them thoroughly in their natural environment. They can chop or strike with a handy stone or stick, but they do not even make the simplest tools or weapons. We are sure



the path-building is instinctual. Certainly they've had a strong threat to meet in those flying things."

Steve said, "But I understood they hadn't been here long."

"Fifty generations, perhaps," the B'lant said, "equivalent to forty humanoid ones. Long enough, apparently. Or maybe they already had it on their home world."

"Oh," Steve said. "Well, speaking of those flying predators, I had better get around and make sure they are not carrying away my sentries. Thank you very much for the *nazz*."

III

The sentries were still nervous and disorganized, which suited Steve fine. He reached Ralph Parr and found him talking to a pair of Gjiss. "Something wrong?"

Parr said, "My partner hasn't showed up." He gave Steve a warning look.

Steve caught it. Something was wrong; he had to get rid of the Gjiss fast. "Well, don't worry about it. He was probably manning a gun, and someone told him to stay on it. Is this your post?"

Parr nodded.

Steve asked the stocky Gjiss, "How about you?"

One of them, a Tools Tech First, said, "We not know. I thought, here, but . . . I guess the ones we should find, they already gone, and there are changes."

Steve said, "Yes. Well, just walk around the fence until you find an unmanned post."

The Gjiss made a little bobbing motion of his head. "Yes, Gunner, we will do that."

As soon as they were gone, Parr inclined his head at the gate. He and Steve looked around, made sure no one was watching and shoved it outward. They got out and closed it quickly behind them. A few yards away, with sand hastily tossed over it, was the body of a man in a white Gree Slave uniform. Parr said in a low voice, "I had to do it. He saw that the gate had been opened and demanded an explanation."

Steve swore softly, turned, and peered through the fence. No one looking this way. "Take his feet!"

They got the corpse far enough away, threw sand over it and went back to fix the gate. There were ticklish moments as sentries walked by, but they got it rewired. Then they dug up their drab coveralls and got into them, spent ten minutes smoothing sand and sneaked away. They couldn't do anything about their footprints except hope the drizzle would obscure them enough. Then they lugged the body toward the ull-ull pathway they'd used. As they went, Steve asked, "How'd you do it?"

"Slugged him, then put a knife under his ribs," Parr said. "Damned lucky no one came by before I got him outside."

"Short-term luck," Steve said sourly. "Well, we'll have to make the best of it. God knows how soon they'll match up stories and realize something's fishy. And if they ever find enough of the body to see the knife wound . . . About here, I guess." He dropped his end of the

corpse, then led the way toward the ull-ull path. When they were near he called softly, "Fazzool!"

"Here!" They'd missed the hole by thirty yards. Fazzool came to meet them. "I smell blood! Is it—"

"Not ours," Steve said shortly. "Tune up that recording of yours. We need some more help from the meat-eaters."

Fazzool turned on the tape. Steve watched the glow of the camp's lights until they heard real predators overhead. When one swooped down after the Slave Gunner's body, he said, "Let's get back to the tangle. I've got to make sketches of that skeleton while it's fresh in my mind."

When sketches and reports had been coded into a tiny message drone and nulled away to an Effogan outpost, Fazzool and Steve sat in the dark listening-post, talking. Fazzool said, "Suppose zey question ze B'lant Techs you talked to. Zose will surely remember zat you wore a Gunner Third insignia, while ze missing man is only a Second."

Steve sighed. He knew B'lant wouldn't be wrong on such a detail and would *know* they weren't wrong. "The chances are he was the real officer of the guard, since he was alone and questioned Ralph. We'll just have to hope the Overseers don't make too much of the discrepancy. Anyway, there's nothing we can do, so let's not worry. Right now I'm puzzled about that skeleton."

Fazzool said, "I have been zinking about zat. If all ze bones were zere, zen ze humanoid was not killed by ze flying beasts. Maybe he drowned in ze winter, when ze flat was flooded and was covered wiz mud before anyzing found him."

"Possibly," Steve said. "But the pellet weapon indicates they didn't have compact enough power units to build practical laser pistols, so they can't have had null either. That means multiple-generation trips, at fractions of light-speed. So they wouldn't be turning around and going home. And if not, there ought to be at least a few old rusted hulls somewhere."

"Unless," the B'lant said, "zey hid zem very carefully. Zey had reason to be furtive, wiz Gree already in zis whole part of ze galaxy."

"Well, probably," Steve agreed. "Still, in the whole search Gree's made here, there's only the one skeleton been found, and a few other traces here and there. This is a livable planet for protein life. Where are their descendants?"

"Maybe zere were no females along. Or ze ships could have been mostly automatic. Maybe what crew zere was just died of old age, wizzout descendants."

Steve said, "That just doesn't feel right. Gree's team has established that the ull-ulls were put down in a lot of different spots. Why would anyone stock a planet with an animal like the ull-ull, plus eight or ten smaller species, if he didn't intend to move in? Why odd things like ull-ulls, anyway? There's probably a clue there somewhere."

Fazzool said, "Why not for food? Ze ull-ulls and smaller zings zrive on zese vines. A whole world full of good pasturage."

The dark hid Steve's grin. It was a standing joke that B'lant could, and with a little encouragement would, eat almost anything. "Possibly. But then what scared them off? And why hasn't Gree been able to find their home world, if it's only a slower-than-light trip from here? Even if some disaster hit them, a civilization dead such a short time would still show."

Fazzool was silent for a minute. "I begin to see what you mean. You zink ze skeleton is not representative."

"Right," Steve said. "Somebody else may have brought it here, along with the animals. Maybe the skeleton belonged to some sort of herder or watchman. And the somebody, whoever it was, *did* have null. Then, for some reason — probably that they became aware of Gree — they went away again."

Ralph Parr, who'd just come up from the cache, cleared his throat for attention. "I'm afraid you'll have to change the theory."

"Why?"

"Because I'm sure that a couple of the guns aren't quite *exactly* where I left them."

If he hadn't looked hard, Steve wouldn't have noticed anything to support Parr's claim. However, he found it. There were fresh Gree uniforms and other garments stored against possible need; and they weren't refolded quite right. He called Fazzool. The B'lant looked and nodded.

Parr said, "I'm not arguing against it, but how can you be sure?"

"Remember," Fazzool told him, "zat Steve and I were raised as Gree Slaves. Zere are ways you do certain zings, zat you would do in your sleep. No one who was not of ze Gree background would know zem."

Parr nodded. "Okay. I'm the same way about where I leave a weapon. So we know *two* things: that somebody searched this place and that it wasn't Gree Slaves. Ull-ulls?"

"No," Steve said. "They haven't the brains or the manual dexterity. Something else."

Fazzool said lightly, "It is a good zing we have Gree for ze common enemy. Ozzerwise, we might look like pincushions by now, wiz arrows or poison darts."

Steve told him, "I feel enough like a pincushion from these damned thorns. Well, they've had plenty of opportunity, so if they haven't killed us yet, maybe they won't before morning. I suggest we just put out the lights, bring a radio receiver down here, and wait until morning. Then we'd better wire up some better alarms, if we can. By the time we do that, we may have other things to ward off boredom."

IV

Before daybreak, it was obvious from the talk on the radio that the Gree camp now knew it was missing a man. Steve listened to the guarded talk. "At least they don't suspect anyone else on the planet with radio. When they do, there'll be a sudden silence, if I guess right; then, within a few minutes, they'll resume broadcasting to fool us."

They waited. Daylight started to filter into the tangle. About that time, a clamor of small creatures began somewhere not far away. "God," Steve said, "what now? I guess we'd better go look, but keep your eyes open."

Before they reached the spot, they could see the reddish fur through the tangle. The small creatures—some picking at the ull-ull corpse, some just hopping around in excitement—set up a new clamor as the men approached. Steve's particular little demon flew at him shrieking, to skitter about just out of reach. He made a vicious swipe at it, missed and clambered nearer the dead ull-ull to chase away the other things. Fazzool and Parr came up beside him to stare. Steve asked the B'lant, "Same one that's been hanging around?"

"I zink so. It is immature; about ze same size."

The thing's throat had been torn open. Blood stained the more brickish red of the fur. Seen lifeless, it was a rather insignificant animal; bedraggled by the near rain, its long neck limp and weak looking.

Steve moved back from it and raised his head to listen. "Something sounds different."

Fazzool said, "Zere are no ull-ulls close by. Zey are not too stupid to make ze association: ze one zat hung around us is killed. But why?"

"My guess," Steve said, "is that our visitors did it, either because it got in their way, or because they don't want ull-ulls gathering around us. Let's go look where that nearest family lived."

It was a five-minute scramble through the thorns. The spot Steve had in mind was deserted. "Not even any fresh chewed vines. I guess we're under a sort of interdiction."

What bothered Steve most was that none of their electronic alarms had been tripped.

Of course those weren't capable of detecting a tresspasser more than a few yards away—that would have required more power than he dared use, this close to the Gree camp — but they were spotted along the easy approaches and were well hidden. Either the thing or things that had searched the cache were too small (or too insubstantial) to register, or they were scientifically sophisticated enough to find and avoid the detectors. In all the galaxy, no race that was nonhumanoid, or much smaller than a man, had ever been found so far with more than brute intelligence. Of course there were the Gree entities, like three-foot metal cables with intelligence programmed into them, but they weren't natural beings. And he didn't want to think another race like *that* was loose. No, come to think of it, the searchers must have had hands, or something like them.

"All right," he said, half listening to an earplug that would keep tab on the Gree radio, "there's an intelligent race here, with scientific understanding if not actual technology, in complete hiding. They've hidden successfully from Gree, and we wouldn't know about them either if they hadn't made one or two very small mistakes. That's one thing we have in our advantage. They don't know we know about them. Unless they're listening and understand English, which is pretty unlikely.

We can't leave without finding them. So, we invest whatever time we have in trying to flush them out."

Parr asked, "Just how much time *do* we have, and what are the odds?"

Steve pondered. "Well, actually, the odds are rotten at any time before the set rendezvous. Suppose we called a ship. It would take six or seven hours for it to get here. Half an hour to get down through atmosphere; God knows how much longer to reach us. Say half an hour, with luck. Ten minutes for us to get aboard. Balance that against how long it would take the Gree expedition to spot the ship as it came out of null, challenge it, radar-range it and get ships manned and aloft to clobber it."

Parr shook his head. "Even I can assess those odds. Why can't the Birds null a big enough task force here to handle the Gree expedition? Aren't we worth it?"

Steve grinned. "The last point's doubtful. Anyway, we're right in Gree's back yard, you know. A thing like that would escalate fast into a full-scale battle, and we couldn't begin to match him here. Not to mention that we, and the planet, would get crisped. The rendezvous was supposed to be hit-and-run, and it can't be moved up."

"So," Parr said, "a few hours doesn't make any difference, eh?"

"Except for one thing," Steve reminded him. "Gree's not looking for us now. He will be before long."

Parr said, "I really cooked it when I killed that Gunner."

Steve shrugged. "You had no choice; and we haven't any now. We've got to contact these hidden people, fast; that's all."

Fazzool said, "Zat may not be easy to do. Zey are evidently professionals at hiding, and zey have no reason to trust us. Even if we let zem know we recognize zey are here, zey will avoid us. Zey will have to assume we might be frauds—Gree Slaves pretending ozzerwise, to draw zem out of hiding."

"That's right," Steve said, "but we don't have to give them the choice."

Parr looked questioning. Steve grinned. "Just as a crude basic proposition, suppose we climbed to the top of this tangle—after letting them know for sure we knew they were around—and started waving a flag. Could they afford to let us fall into Gree's hands?"

Parr scratched at his beard. "I see the reasoning. But isn't it based on a lot of suppositions and hopes?"

Fazzool said, "I will listen gladly to a better reasoning. But I cannot zink of it myself."

"All right," Steve said, "Fazzool, you know better than I do what we have along. Can we send a radio beam—a weak one, but all over the spectrum—the opposite way from Gree's camp? And swing it around an arc, to cover nearly a hundred eighty degrees?"

The B'lant said, "Yes, we can do zat. But what if a Gree ship or aircar happens to be in ze way?"

"Keep it narrow and aimed a little down, so it'll be absorbed by the nearest tangles. Any bounce off the sand-flat will be weak and scrambled until it sounds like static. Just send a simple pattern. Three dots, a pause, three more dots; something like that. Use your own judgment."

Fazzool pondered, nodding slowly. "All right. For how long shall I keep it up?"

"Intermittently, for about half an hour," Steve said. "Meanwhile I'm going out to that spy post. I'll be back." He started through the tangle, carrying a few small instruments and the field glasses.

Halfway to the outpost he stopped. Something was missing . . . Oh—the small flying thing that had always heckled him before. He waited a minute, but it didn't appear. He shrugged off a prickly feeling and went on. The creature couldn't devote *all* its time to him—there was no reason to suppose it might not be somewhere attending to affairs of its own.

He reached the outpost, saw that an excavation team was working at the same spot on the sand-flat, and squirmed himself into a passably comfortable position to watch. They were just digging around and probing with metal detectors, apparently not finding anything. He had a small receiver with him now, and he listened to the talk on the various Gree wavelengths. Things sounded all right. There was no mention of the missing man. Possibly about now, the B'lant archeologist Steve had talked to was giving his story to the Overseers and insisting he'd talked to someone in a Gunner Third

uniform. He used the glasses for a few minutes (the morning heat wasn't burbling the air too much yet) and satisfied himself that nothing more was being dug up.

It came to his mind suddenly that the skeleton and pellet-firing pistol might have been a deliberate plant. Maybe the hidden people had scattered a few such bones and artifacts about the planet, to disguise their own presence. He lowered the glasses and squatted there, pondering. Assume a highly advanced race. Was it possible they maintained this planet as a sort of spy post against Gree and that their own strongholds were far away, in remote parts of the galaxy? If so, they doubtless had other outposts and knew about the Birds of Effogus; knew the Birds were resisting Gree. Why, then, hadn't they offered their help?

Maybe they were too weak numerically and didn't want to be swallowed up in a space war. Or maybe they just weren't militarily inclined.

All that was futile speculation. He had another look at the Gjiss team out on the flat, then put away the glasses and started back.

Before he got there the Gree transmitters suddenly went off the air.

V

Fazzool had discovered the same thing and wasn't sending out his own beam any more. He looked at Steve expressionlessly. "I wonder if I attracted zem."

"Probably not," Steve said. "More likely someone just had a rushing of brains to the head. Let's listen."

It was about five minutes later that the transmission resumed. An Overseer's voice explained smoothly, in English then in B'lant, on an all-station wavelength, "We have had a temporary power failure, but it is fixed now."

Steve grimaced. "That lights the fuse. Well, I'm tired of sitting anyhow. Ralph down below?"

"Yes."

Steve called out, "Parr!" When the Terran came clambering up, Steve told him, "I think you'd better start making up three backpacks. Rations, guns, first aid, power units, grenades, about a dozen message-drones. Leave room for a few things Fazzool may decide we want. If we're lucky enough to last till night, we may be playing hide-and-seek. Oh. Put in pencils and scratch pads."

Parr turned to start down, hesitated. "Scratch pads?"

"Sure," Steve said. "If we do find our secretive neighbors, we'll want to communicate with them. Sketching is the best way."

Parr left. Steve turned toward the center of the tangle, cupped his hands to his mouth, and began making ull-ull howls. He frowned at Fazzool's grin. "If they're listening, it'll at least alert them." He began to give the calls a pattern—three howls, a pause, three more. Fazzool said, "Zere will be Gree ships listening."

"I know," Steve said curtly. "That's why I'm doing this before they get here."

Presently he stopped, sat on a branch and thought. "Do you have any spare throat-radios up here?"

"Yes."

The B'lant went to a pouch hung from a thorn and brought back a small instrument on a strap. Steve took it and said, "I'll be back."

He made his way to where the body of the dead ull-ull, now pretty much eaten by small things, still hung. He stood dangling the radio by the strap for a minute, pondering. No, there was nothing to identify it to Gree as Effogan technology. He glanced at his chronometer, listened for a few moments, then called not too loudly, "Here. Here. I have left something." His listeners, if any, probably spoke no English, but his voice would be enough. He buckled the radio's strap around a branch and left it hanging there, then retreated to the hideout. Fazzool blinked at him. "You left ze radio in sight? What if Gree finds it first?"

Steve said, "They'll probably take their time with each tangle. They'll put ships over the nearest ones, surround one at a time, and work their way into each. We're closer to the edge than where I left that radio, so they'll be here before they would find it anyway."

"Why will zey not simply drop gas bombs?"

Steve scowled. He should have thought of that. "Well, maybe they'll think whoever they're hunting may have masks. I'm going down to see how Ralph's coming."

Fifteen minutes later, lugging two backpacks, he climbed back up, Ralph Parr behind him with the third. Steve asked Fazzool, "Can you drop your excess stuff into the tangle so it'll take longer to find?"

"I guess so," Fazzool said, looking unhappy at having to junk so much excellent miniaturized equipment. "Are we starting already?"

"I think we'd better," Steve told him. "It may take a while to get our message across to our secretive friends."

They both looked at him oddly, but went to work junking the stuff Fazzool didn't want to take. Steve joined them, tossing equipment off the crude platform, uncoupling it first when it was too bulky to fall through the tangle. "Damn!" he exclaimed suddenly. "Did you put flashlights in the backpacks?"

"Sure," Parr said.

Steve grunted in relief. His hunches were crystallizing now, and he knew what his plans were for the next hour or so. If they didn't pan out . . .

He looked around to make sure nothing obvious was left. The platform, purposely, looked as if it might have been built by primitives. He walked around the edge, peering down to make sure nothing had lodged just below. He could see a few pieces of equipment, but only by looking hard. With luck, he'd gain a few minutes. He shrugged, reached for his backpack, fumbled in it for the flashlight, put that in a pocket and swung the pack to his shoulders. "Let's go."

He led them down toward the nearest ull-ull tunnel and along that toward the center of the tangle. After a couple of hundred yards he stopped to listen. From various di-

rections came faint sounds of the beasts. He wished he had directional sound pickups, settled instead for cupping hands to his ears and turning this way and that. There seemed to be ull-ulls in every direction except the one from which they'd come. That wasn't encouraging. If there were aliens in the tangle, the beasts ought to avoid them. The nervousness was in his veins now, making him tingle uncomfortably, making his hands feel numb. "Well," he muttered and started on.

Here the tunnel was about fifty feet above ground, but the center of the tangle, at the peak of the knoll, was on higher ground and might be about level with them. There was a good two hundred feet of vinery overhead, which made it dark down here. He was depending on that.

The tunnel finally angled down to the ground. Now it was joined by others, convergent toward the center. Two red forms scuttled across before them. There were coughs of other unseen denizens. Steve muttered cursewords. A concentration of ull-ulls was the last thing he'd hoped to find.

The ground leveled off, and he stopped. "Well . . ." He aimed the flashlight at random, flashed three times, changed direction slightly, flashed again. He continued that around the circle and around again. After five minutes he stopped and waited. There was no sound except the coughing of ull-ulls and the chittering of smaller things.

Fazzool, who'd rigged some equipment to wear on his person, said, "Zere is a Gree ship overhead."

Steve's tension made him almost bark, "Well, that's what we expected, isn't it?" He waited, forcing himself to stand still, listening for the sound of missiles falling. Gas bombs he could do nothing about. But maybe Gree wouldn't want to warn possibly prepared quarry. Maybe, even, there'd be a war of nerves, with the expedition troops waiting for the unknowns to fire a weapon, null a ship, show themselves somehow.

Now Fazzool suddenly adjusted a plug he had in his left ear, put a hand over his other ear, and listened. He faced various directions. "Zere are troops coming into ze tangle. Not close yet, but working zere way in from all directions. At several levels, I zink."

Steve shrugged, wooden-faced. The expedition must have picked up something from this particular tangle, then. Maybe a faint bounce of that radio beam, just at the moment when they were already suspicious. Maybe, he thought, this was his last reckless gamble. He'd gambled on hunches often enough; was way overdue.

He glanced at Parr. The man's face showed neither fear nor resentment. He'd fight to the end, if he had any opportunity. So, of course, would Fazzool. Steve fingered his pistol, sickness growing in his middle. He'd sort of highhanded them into this, without explaining. "Well . . . I guess I was wrong. Maybe we'd better find a thick spot and ambush as many as we can." Nevertheless he waited a minute more, tried the flashlight routine one last time with no result. He breathed deeply to relieve the tension in his chest, clenched and unclenched his fists. He hated to give up on his hunch. Faintly, now, he could hear Gree's Slave-troopers moving in. He looked toward a thick-grown spot. "There, I guess." He took two steps.

Suddenly he stopped. Like wraiths, a squad of ull-ulls—aiming heavy laser guns—stepped from the tangle.

No! Not ull-ulls! The heads were slightly larger, the hands not quite so paw-like. The eyes gleamed with intelligence; with purpose. Suddenly he felt like giggling. "Drop your guns," he told his companions in an unsteady voice. "We have to make it plain we're willing prisoners." He heard their weapons thud to the ground a second behind his own. He raised his hands shoulder-high, open, away from his body.

The aliens eyed him steadily for a moment. Then one of them said something in a totally unfamiliar language and inclined his head in an unmistakable gesture. Steve, following it, turned and began to walk. Other aliens—all nude, but armed—came from concealment to lead them down the slope at an ungainly trot.

Fazzool said in a bemused voice, "So *zat* is why ze ull-ulls are here. For camouflage."

Steve chuckled. "Yeah. Not to eat."

They reached a very thick growth of vine, and the aliens, except for a few still pointing weapons, went to work. Laser tools zipped through thick stalks until a way was cleared. Now they began tossing aside dead branches.

It was nothing so easy to find as a frequently used trapdoor. The hatch had laid buried under authentic dead litter for years—maybe centuries. It screeched open. Steve and his companions were urged in. There was a ladder, of some rustless metal, and a dim orange light below. It took minutes for the whole party to get in and for the hatch to close above them. At the foot of the ladder, they hurried along a tunnel, around several turns, heading deeper into the ground, then along a straight stretch. They must have gone for fifteen minutes before a mild explosion sounded from behind. There was no pause in the trotting. A second mild explosion came, and now the red-furred aliens tensed a little. Another five minutes, perhaps—then a real blast went off. The floor of the tunnel heaved; metal groaned. Steve could hear the tunnel collapsing behind him. Fazzool, trotting beside Steve, said, "Not nuclear, I zink."

"No, and only local." Steve turned his head to look at their guards. "I've been wondering about that. They'll leave our hideout intact long enough for Gree to find and identify the stuff. Then, I'll bet you, that whole knoll and whatever's under it will go up."

Parr said, "You mean, I hope, when we're far enough away."

They weren't there to find out, for they entered a chamber containing two small ships, looking fairly much like Gree scouts. Fazzool looked around. "No null tanks."

"No," Steve said, "we'd hardly be likely to have picked a tangle that happened to have an incoming station under it. These have been here a long time, unused, waiting."

Parr said, "You mean you think every knoll has an escape tunnel and ships under it?"

"Tunnels, yes," Steve told him, "ships, no. We've come quite a ways from our tangle."

"Huh." Parr shook his head in wonder. "Do you really think Gree'll be fooled very long? By our hideout, I mean."

Steve made a gesture of dismissal. "I doubt it. But it won't matter. Once we get these people in contact with the Birds, this planet can be written off."

They were urged into one of the ships. Hatches closed, and from various activities Steve judged they were nulling. The three men sat under guard in the middle compartment of the ship—which, while not precisely like a Gree ship of the same class, was too nearly so to be a coincidence. This race *had* known Gree before, apparently.

Presently an alien, clothed now in a white uniform, appeared. His long neck looked very odd sticking up from the jacket. He had a slate and stylus of some kind. First he drew a circle with lines radiating from it—a sun. Then he held up four fingers. A flick of his thumb cleared the slate. Now he drew a ship, suddenly made it disappear.

Steve looked at Fazzool. "Null? *Four days?*"

The B'lant nodded. "I zink zat is what he means."

Ralph Parr whistled. "That's a *long* trip!"

Fazzool said, "I hope zey have something we can eat ozzer zan our rations."

The alien was watching them silently. Steve gestured for the slate and began the long, tedious job of establishing communication.

VI

When the null trip was up, he'd described the space war and tried, not quite successfully, he thought, to convince the aliens they could trust him and the Birds of Effogus. They told him very little in return—they were still being cautious—except that they were enemies of Gree. He had to wait until they spaced out before he understood. Then, cursing his own slow wittedness, he stood with his two companions and stared at viewscreens.

The largest screen showed the entire galaxy. He'd been out far enough before to recognize it, but they were farther now, judging by the angle. He calculated, a little dazed. Four days. That planet's day and night amounted to about thirty-one hours. A hundred twenty-plus hours of *straight null* . . .

Another screen showed a cylindrical object he didn't grasp at first. Then, realizing the black background was starless space, he suddenly understood the scale. At about the same instant, Fazzool gasped. "Zat zing—it must be a hundred miles long, if ze angle of the viewer is normal. It is—not even from our own galaxy!"

Parr, not grasping the enormity of it, said, "Huh? Wouldn't that be an impossible trip even by null?"

Steve stared at the image of the cylinder, turning slowly on its axis, crusted white with the ice of ages, pitted from deep-space debris. He let out his breath slowly. "Eight hundred Terran years," he said to Parr, "from even the closest. God!"

The alien who'd been working with Steve joined his hands and rested his head on them in pantomime of sleeping. Fazzool said, "Suspended animation for hundreds of years? Zey've solved *zat*?" He blinked in unbelief. "Even so—to send zat huge zing a zousand years, two zousand years, of null . . . zat is incomprehensible! How would you store such energy? How would you conduct ze currents?"

Steve mumbled something. He gestured for the slate, sat down, started to draw something, then looked helplessly at the alien.

A few hours later he was explaining it to his companions as well as he understood it. "They came from the same galaxy the Gree creatures did. I hope it's not a foretaste of what *we're* in for. Gree had almost won the war there, and the last coalition holding out began the desperate project of a great Ark, to carry their kind of life to some new galaxy. They designed automatic equipment to revive them when they got close to one. Imagine the shock when they found Gree apparently had overrun this one too!"

Parr said, "I can understand all that. But how can these be some of the original crew?"

Steve said, "They've been waking each other up in relays. When one

bunch got old, they came back to the Ark to die, and a young bunch took over. They had a long time to prepare that planet before Gree got curious about it." He grinned. "They say they nearly decided to kill the three of us and hide the bodies. The only reason they didn't was that they had to know who was fighting Gree."

Parr asked, "What were they going to do if they found Gree did control the whole galaxy?"

Steve told him, "They were scouting to make sure. That may explain a few strange drones that have been reported in this spiral arm. If things turned out bad, they were just going to land what flora and fauna they had on suitable planets, then throw themselves in a suicidal attack against Gree. They had no second choice. The Ark can't null itself."

Fazzool said, "Zey made a big gamble. How could zey be sure zey would survive suspended animation after such a long time?"

"They weren't sure," Steve said. "The Ark has automatic living environments not only for animals such as the ull-ulls, but for their own races—there are several of them—in primitive cultures. They didn't think they could maintain civilized cultures for so long without bizarre drifts; maybe even Gree worship. The launchers hoped that if the ones in suspended animation didn't come out of it, some civilized race in some free galaxy would rescue the primitive cultures and the animals."

Parr shook his head in wonder. "It's too much for me. Funny. There's one thing sticks in my mind. I could like them except for that. The way they killed that half-friendly ull-ull. Seems they could have done what they wanted some other way."

Steve smiled wryly. The same thing had been on his own mind. "You have to balance that against something pretty big." He stood up. "I've *got* to get my report coded and persuade these people to let me null it off. I've put off writing it as long as I can. I'm damned if I know quite how to begin." END

THE HOUR BEFORE EARTHRISE

by JAMES BLISH

XIII

TRACK OF THE CAT

That motionless, frightening, unreadable hieroglyph in the Martian dust brought back into Dolph's mind another sign that he had been trying — more or less successfully — to ignore for months: the function of the sting in the arthropods' tails. Had the thing not had survival value for the animals, in present time, evolution would have selected against it, and no matter how useful it might have been in the past, today it would be gone or at best only vestigial. Progessive loss of structure with loss of function is one of evolution's firmest decrees — as witness the human vermiform appendix.

"So it had to follow," Dolph said

Illustrated by MORROW

They had broadcast an S.O.S. for help. Now someone — or something — was answering their call!

What Has Gone Before—

Teen-ager Dolph Haertel was attempting to discover the secret of anti-gravity. He had three things going for him — his intelligence; a family that encouraged research — and the fact that he didn't know it was impossible, in the orthodox view of relativistic science. And so he succeeded. He fitted out his tree house with an antigravity generator and propelled himself on a tryout expedition to Mars.

But there his luck ran out. The basic power tube was damaged in landing. It was irreplaceable on Mars — and he had no way to get off Mars. Nor could Earth's much-vaunted space programs help him. Relying on chemical rockets, they were years behind schedule — worst of all, no one knew he had gone.

Or almost no one. Dolph's nearest neighboring teen-ager back home — who happened to be a girl named Nanette — had been let into his secret, just a little bit — but enough so that, with what he had told her and what preliminary models he had left behind, she was able to follow him.

She did . . . and now there were two teen-agers stranded on Mars! They managed to stay alive, with the help of a strange lichen that made breathing a pleasure but not a necessity and a water-mine that uncovered drinkables under Mars's arid soil a few yards from their tree-house shack. Then — one morning — Dolph found a footprint by the water source.

They were not alone on Mars!

gloomily, "that there *was* — there *is* at least one animal on Mars larger than this invertebrate, that either hunts them, or that they hunt. Well, we can see that they don't hunt anything larger than the lichen mites, themselves. And now we know the answer. We should have been making preparations against it long ago."

"What kind of preparations?" Nanette said, peering out the porthole at the deceptively peaceful noon. "I don't see any trees to make a palisade of, out there — or any water to run in a moat."

"I don't know," Dolph admitted. "Electrified wire, maybe, if I hadn't used up most of the available stuff making that antenna for the jammer."

"I wouldn't put any faith in anything that could be jumped over," Nanette said. "How big do you think it is?"

"Bigger than the crustaceans. That's as close as I can come. If it were Earthly, I might make some guess by the size of the track, but we've got no reason to think the same proportional relationships apply here. Also, it's a desert creature. It might be pretty small and still have a big foot to walk on sand with. Like the snowshoe rabbit — going from *its* track, you might think it was as big as a dog."

"Well, I'm going to think of this one as being about the size of a small elephant," Nanette said. "That way, I won't be upset if it turns out to be only as big as, say, a large rhinoceros. And now that we've settled that, just what *are* we going to do?"

"Trap it," Dolph said.

"Dolph Haertel, I know doggone well you were going to go too far sooner or later! And once you catch it, I suppose you'll want to keep it in the lean-to!"

"Well, it's in the back yard already," Dolph pointed out with a wry grin. "And we've fed and watered it, so it'll probably keep on coming back. There really doesn't seem to be much left to do but give it a name. How about 'Bertram'? Or 'Pywacket'?"

"You're impossible," she said, for at least the fiftieth time. "All right, I give up. Why do we want to trap it, O Mighty Hunter?"

"Well, to see what it looks like, for a starter. Though since we thought to put the mine in sight of the porthole, I suppose all we need to do is keep a lookout early in the morning — it seems to come around at dawn, if we can go by today's performance. But I don't just want to look at the critter. If possible, I want to talk to it."

"Talk to it! But — oh, Dolph do you think it's one of the Martians? I mean — somehow I hadn't thought —"

"I know what you mean," he said soberly. "I thought it was just an animal at first, too. After all, people that can build radio beacons don't go about robbing traps. Or do they? We just don't know. All we've got to go on, really, is one fact and one footprint. I don't want a dangerous animal hanging around here, any more than you do, but there's no way I know of to make it go away now — and frankly I don't want it to go away unless and until I'm dead sure it *isn't* a Martian. Otherwise I did all that climbing around last month for nothing."

"All right. I can see that, I guess, even if I don't have to like it. What are you going to use for bait? It doesn't need to blunder into a trap to catch one of those lobster-things."

"No, I'm sure not," he agreed. "I thought I'd try something a little more intellectual. If it hunts those crustaceans, maybe it'd like to have some sort of tool to get through the shells with — a knife, say. Even if it's a Martian and he has knives and forks of his own, such a thing would show him that *we're* intelligent."

"The house and the well show that."

"Hmm . . . that's perfectly true. Well, what would you suggest? I

don't really want to trap him, physically, anyhow — even trying that might be dangerous. I just want to attract his attention, and if the house and so on haven't done that already, what would?"

"Oh, in that case the knife ought to do nicely," Nanette said promptly. "The house and the well are just *here,* but the knife would obviously be a present. I mean, a gift. That's entirely different."

"Well, it can't do any harm to try," Dolph said. "I hope."

Dolph made the knife from scraps; he had no intention of giving away any of his imported, machine-made possessions, and he assumed that almost any assemblage of cut wood and smelted metal — especially the wood — would look strange on Mars, and perhaps unique. They put the tool inside the repaired lobster trap, which was secured in turn only by a simple latch, and set the whole lure out on the dusty ice at the bottom of the mine shaft.

Whether or not the reasoning was sound, the knife was gone the next morning; and this time the trap, though left open, was unharmed. For his next bait, after some thought about what else might be both Mars-unique and useful the year round in a desert, Dolph put out a nine-foot length of clothesline. That, too, was taken . . . which was all well and good in its way, but they had yet to see the taker, which after all was the object of the proceedings. In what he decided would be his last attempt, Dolph now put out his canteen, with a chunk of ice rattling in it to show what it was for. That went, too, and on the fourth day he left the trap empty. Then he and Nanette settled at the porthole for a last vigil.

The great dune-cat came to the shack in the first light of day and knocked on the door of the lean-to. He was carrying the knife and wearing the canteen slung around his waist by several turns of the rope. He would have been awe inspiring anywhere, but here, after so many months of isolation, he was fearsome; but these signs left no doubt that he was intelligent — a tool-using creature — and no choice but to confront him.

Dolph got ready. He was frightened almost speechless — but after all, he had invited this confrontation himself. There was no ducking out of it now.

It was the creature's size that was impressive first of all. Even in a quasi-sitting position, he stood a good six feet high at the shoulder. His coarse, shaggy fur — which was tawny, mottled in large patches the exact blue-green of the tumble-lichens — inevitably suggested a wild animal, but except for his leonine face and mane he really did not look much like a cat. His stance in the resting position was rather like that of a kangaroo, and his arms (or forelegs?) were almost as short in proportion to the rest of him, although a good deal more powerfully muscled. They terminated in true hands: five long, spatulate fingers *and* an opposable thumb. Dolph concluded that he had been resting on his knuckles when he had made

the prints in the sand, with the thumb folded inside the fist. Yet he did not look much like a kangaroo either, despite the presence — unnoticed by Dolph until later — of an abdominal pouch. For one thing, he had no tail. For another, the legs were obviously as well adapted to running as to leaping.

But it was his eyes that, in the long run, made the deepest and most lasting impression. When fully open — for they could be covered inside the lids by nearly transparent shutters, like the nictitating membrane of a lizard or a bird — they were large, still and an incredible dark aquamarine, like the Martian sky at high noon. Meeting their steady gaze was an almost physical shock. Staring into them, Dolph could not help but be sure — despite the fact that the dune-cat was naked, except for the trappings which had come from Dolph himself — that he had indeed at last met an authentic Martian.

Then the cat moved, very quietly and gently. One paw reached out toward Dolph's head and unfolded its long fingers. The back of the hand was woolly, but the knuckles were bare and calloused. From the knobby tip of the central finger there emerged an inch-long claw, as curved and cruel as a saber.

Dolph stood still and sweated, listening to the thin sound of the wind and the abrasive whispering of the sand against his mask. He was as cold as he had ever been in his life.

The sharp claw — why did this creature want, let alone need, a knife? — touched first one eyepiece of Dolph's mask, and then the other: *Tick . . . tick.* Dolph stood fast, although the urge to flinch was almost more than he could bear.

The paw went back to the cat's tawny side, and then the other arm came up — the one bearing the knife. The blade probed for his eyes.

Dolph would have broken and run then, except that he did not dare to move. The great lynx-head bent down over him gravely, as though trying to decide what was the matter with him. Then the knife, in turn, went *tick . . . tick* against the lenses of the goggles. Dolph felt his eyes trying to cross, and two scalding tears ran down on each side of his nose; but he fought to keep himself looking directly up at the cat's sternly savage face. Somehow, he succeeded.

The cat's hand opened. The knife dropped into the sand between them, and the great beast stepped back. In a voice like a wind blowing over a thirty-two-foot organ pipe, it said: *"Mmrreeornn-dmmannn."*

Dolph tried to answer, but his mouth was completely dry. Helplessly, he raised his own hands and showed them, open, to the intent creature.

Astonishingly, it nodded. "Dmnn," it drummed inside its vast chest. "Dmmnnn."

"Mnn," Dolph growled hesitantly, trying to make his voice as deep as possible. The result sounded absurdly thin to him; but the cat cocked his head, and the flattened, lynx-like ears tipped toward him, tufts quivering gently in the aftermath of the

morning sandstorm. Tentatively, Dolph tried it again, and this time managed to make a little more noise.

The cat nodded again — although Dolph realized suddenly that he could not yet guess whether this spuriously familiar signal meant "Yes," "No," or "Look out!" Deciding to be reassured for the time being, however, he turned slightly to beckon to the cabin porthole, behind which Nanette was waiting and watching.

The long colloquy had begun.

The task of communicating with the dune-cat proved difficult indeed. More than once Dolph thought with rueful envy of stories he had read in which the imaginary alien creatures had come pre-equipped with telepathy or a mechanical translator. This time, unfortunately, the job had to be done the hard way.

At least, there was no shortage of cooperation. The cat left the camp each day before noon, but he was back each morning, just after the dawn sandstorm had ebbed. Early on, he showed a readiness to help with the physical labor — on one occasion supporting the shoring of the mine while Dolph replaced a timber, in a show of brute strength that was even greater than what Dolph had suspected was in reserve beneath that smoothly rippling hide. He seemed, too, to understand the simple diagrams Dolph drew in the sand, although how far or how deep this understanding went was difficult to assess.

The real problem, of course, was language. The dune-cat's mouth and sound-producing organs were simply incapable of producing the characteristic noises of the English language; it could shape only a few simple words and syllables, and those imperfectly and with obvious pain. Dolph, on the other hand, lacked both the length of vocal cord and the chest capacity to imitate the deep-throated grunts and growls which were natural to the cat, though he could manage a few of them well enough to make them understood. As a result, the "conversations" evolved gradually into a sort of pidgin, in which isolated cat-growls and English words were stitched together imperfectly — if at all — with gestures.

Any attempt to reduce this dialogue to the printed word could only have suggested that nothing at all was being communicated, and in fact what little information did pass among them was fairly primitive. But certain ideas did gradually become established. The dune-cat could manage "Dolph" quite well, although the "f" sound was rather slushy, and it applied the name indiscriminately to both of them. (Except for size, Dolph reflected, they doubtless looked much alike anyhow in their masks.) "Dmmnnn" seemed to be its name for itself, which Dolph managed as "Dohmn". If he pronounced the name with a forced, hollow boom, the cat responded at once.

As for their origin, Dolph's experiments with diagrams soon revealed — to his disappointment — that the cat had only the most rudimen-

tary knowledge of astronomy. His attempts to convey that he and Nanette had come from the blue-green star of Earth were met with flat incomprehension. After some weeks, Dohmn seemed to decide, rather dubiously, that they were visitors from Deimos, and Dolph let that pass for the time being. It was at least a step in the right direction.

There were, it appeared, not many dune-cats. More than twelve, which was Dohmn's unit of counting, but not many twelves more than twelve. Beautifully adapted to Mars though the creature seemed to be, Dolph wondered nevertheless whether it was in danger of becoming extinct. It allowed physical inspection of itself with patient indulgence, and Dolph was fascinated to find that the greenish patches on its hide were not part of its fur, but a lichen with its fungal filaments deeply embedded in the skin. The vegetable stuff was not an infestation, but a commensal partner; it drew nourishment from the cat's bloodstream, but it returned oxygen. The arrangement explained how so big an animal could live in Mars's oxygen-starved air, even given the benefits of the tumble-lichen ichor, on which the cat browsed sparingly about once a week. Its staple food was the crustaceans, which it killed with one surgical swipe of a paw. It hardly needed the knife, for the paws proved to be equipped with saber-like claws quite like those of an Earthly tiger, but more completely retractable. Nevertheless it learned to use the knife quickly and once dissected a crustacean for Dolph with all the skill of an anatomist, to show him where the females carried their eggs; these Dohmn in turn stowed in his pouch, apparently as rations for long trips.

Ordinarily, the cat was migratory, following the summer up and down the planet. The oasis was one of its regular stops or feeding stations, and Dohmn was able to draw a more than passable map showing the locations of the others. This Dolph copied carefully, though the session was a disappointment in another way: it revealed that Dohmn thought Mars was flat. The map placed considerable emphasis on an immense, wheel-shaped area which Dolph recognized as the ambiguous territory Earth astronomers had dubbed *Lacus Solis* — the Lake of the Sun. Why this was important to Dohmn, Dolph could not immediately figure out.

The map session also established that the cat had not come to the oasis in response to Dolph's radio jamming and indeed was entirely unaware of it. This did not prove that confreres of Dohmn's might not or could not be producing the beacon signal all the same, but Dolph doubted it. Dohmn seemed ignorant of elementary electricity, let alone radio.

Nevertheless, he pressed this line of questioning as rapidly as possible. Nanette was of enormous help as the subjects of the dialogue became more complex. She imitated the cat's noises even more poorly than Dolph, since her voice was higher; but she often understood what Dohmn was getting at long before

Dolph did and could suggest ways of putting things in the limited common vocabulary available when Dolph despaired of framing a question at all.

The day finally came, however, when they were able to put the problem to Dohmn with partial success. It was accomplished with a sand-diagram of the crater, on the edge of which Nanette drew a mark like a little sun. From this she drew two lines, 180° from each other, in the two directions from which the radio "beacon" might be radiating and trailing out into dots in the sand. As she marked the dots, Nanette cupped her ears as if listening and made the questioning sound.

Dohmn's own ears, which he normally carried flattened along the back of his head, stood straight up, and he bounded away from the diagram as if alarmed.

When he came back, he quickly scrawled a huge circle around the drawing with his knife — his usual sign that he did not want the picture erased for a while. Then he charged up the side of the crater and vanished, though it was a good hour before his usual departure time.

Dolph and Nanette waited — they could do nothing else — and after about half an hour Dohmn was back. To Dolph's intense irritation, he was carrying the jammer. Dolph could only hope that he could persuade the cat to put it back, for he did not relish the thought of another climb.

But Dohmn was not ready to listen to Dolph yet. Putting the machine down next to the sand diagram, he made three long bounds away from it. At each stop, he drew a sun; and at the last, his standard diagram of Lacus Solis. Then he returned for the jammer and, carrying it carefully, planted it firmly in the center of his new map.

Now it was Dolph's turn to be excited. He drew a line from his own diagram to Dohmn's; pointed to all three of them and then up and out of the crater; and at last, he pantomimed marching. The dune-cat made the questioning noise and marked time in place, with a peculiar mincing gait which would have been funny in so huge a creature if its implications had not been so urgent. Dolph nodded. So did the cat.

"Does that mean what I think it means?" Nanette said, almost whispering.

"I sure hope so," Dolph said. "I still can't believe he knows what the jammer is for — but obviously he's seen something like it before and is telling us where and how long a trip it is for him. Three days."

"And what's more," Nanette said, "he's willing to take us there. Do we dare to try it?"

"I don't see how we'd dare not to," Dolph said. "And with his help, we just might make it, too!"

XIV

WHEN DREAMERS DIE

Once they had become settled in their own minds that the immense trip needed to be undertaken, Dolph and Nanette felt daily under

greater and greater pressure to get it under way. The prospect of something new, of some unknown but possibly drastic change in their circumstances, made their ramshackle camp seem more and more squalid, the whole oasis feel more and more like a trap.

Yet there was an enormous amount of work to be done before they dared to venture up and out onto the high desert. It seemed obvious that they must take with them every scrap of food, every drop of water and elixir and every drop of clothing and bedding that they could manage — all this, plus the battery, the binoculars, Dolph's signal generator, a tent, all their line and such minor items as maps and knives. The risk of gutting the camp had to be run, despite the very good possibility that the trip would prove fruitless and they would need to return to the oasis and set up housekeeping as before. Yet it seemed equally obvious that they could not carry all this on their backs, even with Dohmn's help.

The only possible solution, Dolph finally decided, was a sledge, if Dohmn could be persuaded to help pull it. Nanette queried him with several quick sketches and stances, and the dune-cat assented. Then all that remained was to build it, but it was an emotional wrench to get started on the task, since it required demolishing the lean-to for lumber.

When it was finished, the sledge was a tobogganlike platform seven feet long and two feet broad, with a canted prow and side rails. The rails would help in carrying it up the crater wall, as well as providing hand-grips for passengers later. Also for better portage, they distributed the supplies and equipment equally throughout its length; they would reload everything on the trailing end when they reached the high desert.

Next came the making of a harness and a horse collar for Dohmn — the latter to distribute the mass of the sledge evenly across his shoulders without cutting off his wind, on the assumption — which seemed likely — that he had a windpipe in the usual place. The dune-cat tolerated the fitting of these arrangements with what seemed to be good-humored curiosity, and Dolph surveyed the result with some pride.

"Neat, if not gaudy," Nanette agreed.

"Did you know the Romans never thought of that gadget?" Dolph said. "So they never got half the work out of their oxen that they should have. No decent yoke was invented until the Middle Ages."

"Maybe that's why the Romans needed so many slaves."

"That's a thought. I don't remember Gibbon's mentioning that, either. Now, is there anything around here we can make buckles with?"

"I don't think so. I know how to tie a sliding knot, though. And that reminds me. If we could make some kind of a shoulder pack for Dohmn, it would lighten the load on the sledge while we're climbing the crater."

"It wouldn't lighten it for him," Dolph pointed out, "since he'll be helping to hoist the sledge up, too.

But he looks like he could take it, and we could give him the pack afterward — he could probably find plenty of uses for it. Anyhow, it's worth trying."

Despite the constant emotional pressure to be under way, they worked harder on the project than they had worked since their earliest days on Mars. Made a little morose, too, by the prospect of leaving what despite all hazards and discomforts they had come to think of as home, they were both convinced that they were bound to leave something crucial behind, whose absence would be discovered only after it was too late. Hence, despite their day-end exhaustion, they lost considerable sleep trying to decide in advance what that thing would be — since obviously the whole contents of the house could not be loaded onto the sledge.

On the last day, Nanette firmly insisted that they do nothing at all. She invented a particularly preposterous story, about why a mouse, named Aelfrida flunked her Ph.D exam in Landscape Garbaging, specifically to waste the time with. Dolph actually succeeded in falling asleep before the story ended, which was probably just as well, since Nanette didn't have an ending for it.

They started up the side of the crater after the dawn sandstorm. In their hearts, each wondered if they would ever come back; but the question remained unspoken. Behind them, the watery sunlight crawled down the terraces toward the empty and half-demolished house.

With the dune-cat's help, the ascent took only a day, and they were able to launch their small expedition out onto the desert the next morning.

Dohmn pulled the sledge. One human being rode, the other walked alongside until he tired, after the example of Arctic expeditions they had seen pictured, long ago and on another world. The sledge glided almost as easily over the fine sand and dust as it might have over snow, and the dune-cat never seemed to tire.

Dolph's projected route proposed that a good three-quarters of the trip be made along the floor of a tributary of the mighty Thoth-Nepenthes Canal, which passed between their own oasis and Arabia, and thence northeast toward Lacus Solis. On the map, the overland distance had looked short enough to make reaching the canal bottom possible by the second day; and in fact, they were halfway down the western side of that vast valley — a chasm which made the Grand Canyon look like a scratch on a windowpane in comparison — before night caught them.

Despite the higher air pressure at that distance below "sea" level, the night was bitter beyond all imagining. They would never have survived it without the added warmth of the dune-cat, who slept sprawled across the mounds of sand they had buried themselves in, filling virtually all the rest of the tent space. This innovation made Dolph nervous at first. He was reasonably sure of Dohmn's good will, but after all the creature was obviously a superb kill-

ing machine about which they really knew very little; but Nanette accepted it readily and even with some pleasure, as though the alien monster were some sort of gigantic Teddy Bear. Whatever the risks, they could hardly have done without him, and they got through the night both unfrozen and uneaten.

The floor of the canal was warm by Martian standards, and a heavy carpet of tumble-lichen made the going harder for the sledge. This was compensated for to some extent, however, by the fact that down here they were once more able to dig for ice when they needed it. Dohmn took care of that task, in a great fountain of sand which took him down to the aquasphere in one furious five-minute flurry.

Paradoxically, the sound of the beacon in the earphones was dimmer in the canal. Dolph could only hope that some new shielding factor, perhaps a heavy deposit of iron ore in the canal walls, was responsible. On the third day, he was worried enough to ask Dohmn if they were indeed going in the right direction, although the compass said that they were. The dune-cat said so too, emphatically. Dolph let it rest at that — and sure enough, on the other side of an immense bend which they rounded on the fourth day the signal abruptly became loud and clear.

The fifth day saw the end of the stores. Dohmn pulled them on regardless, and the sledge, now markedly lighter, almost skimmed over the sedgey valley floor. Their heads feeling afloat like balloons with hunger, Dolph and Nanette clung to the straps and tried to believe that the dune-cat, now galloping ahead of them completely out of control, still knew where he was going and why. The sledge rocked and bucked as the cat picked up speed; the moons scooted through the ink-blue sky; the signal became louder; the sand fountained away behind them; the dust and the cold bit through their clothing.

By noon, half delirious with thirst — for Dohmn still would not stop; he seemed truly to be running away with them, his heavy haunches pounding away at the smoking waves of rust with single-minded, almost mechanical ferocity — Dolph and Nanette were clinging to the rails and to each other. Spraying sand from under its tailboard, the sledge toboganned down into a narrow col. Cliffs beetled above it, steadily shutting out more and more of the sky.

Then, near dusk, the col widened and debouched onto the Lake of the Sun.

Dohmn slewed the sledge to a stop and sat down, his vast chest heaving evenly; Dolph could not remember ever having noticed him breathing before. At his feet, the ground fell away toward a broad, almost circular plain, terraced with ringwalls to a floor as flat as the center of a target. The lake itself stretched evenly out to the horizon, lightly dusted with rippled sand which fumed in a steady wind, from under which there shone forth occasionally a dull green gleam of compacted, ridged ice.

Here was a crater to end all craters — as undamaged and regular as Plato on the Moon, yet bigger from side to side than the Moon's Mare Imbrium. The unthinkably massive asteroid that had exploded this enormous well out of the crust of Mars must have hit very recently, as such events go in cosmic time, to produce so perfectly formed a wound and leave behind a genuine lake of open water, stripped from the deep aquasphere to be exposed to the arid air.

Now, at last, the dune-cat allowed them to make camp and even took elaborate pains to help them. Relieving himself of his yoke, but without bothering to take off his pack, Dohmn promptly went hunting, returning before long with two of the lobster-creatures — one, the largest they had ever seen. A second expedition took longer and produced a cake of ice which on Earth would have weighed a good forty-five pounds; since the floor of the col was too far above the aquasphere to permit digging for such a thing, he must have had to cut and fetch it from the Lake itself. Then he pitched in to help dig a tent site and drive stakes.

This abrupt return to cooperation, even solicitude, was welcome enough, but Dolph could not help being made faintly uneasy by it. It reminded him disquietingly of a story he had once read, called "The Price of the Head," in which a castaway finds too late that the kindness of the natives is due to his position as the appointed sacrifice to their gods. He left the thought unvoiced, however; and in his advanced state of physical exhaustion, no thought could have been sufficient to keep him awake.

In the morning, Dohmn was eager to be moving again, but this time without the sledge. Dolph and Nanette were just as pleased to be able to go without having to undertake another portage. Not that it would have been difficult, for the terraces here were broad and shallow and not much weathered, strongly resembling a colossal staircase. Nevertheless, the dune-cat did not take the most direct way down, but instead drew them off along the circle toward the northeast, descending gradually as he went.

By noon they had reached the level of the Lake and Dohmn's apparent goal: a pair of intricately carved pillars at least twenty feet high, cut from the stone of the ringwall. They flanked an open entrance into the cliff, of equal height and far too regular to be a natural cave. Dohmn went in promptly and then, finding that he was not followed, sat down on the smooth floor and made an imperative rumbling sound: "Dohwnn . . . dohwnn."

"Don't rush us," Dolph said, peering dubiously into the opening. "All right, so this is where we were going — but suddenly I'm in no hurry."

"Me either," Nanette agreed. "It's pitch black in there, after the sunlight gives out — and it slants down."

"There's a turn just beyond where Dohmn is sitting, too. What do you make of these carvings, Nanette?"

The girl studied the pillars. "Not very much. They're pretty worn. They seem to be written in columns, like Chinese — or like numbers."

"Which doesn't tell us anything, I'm afraid. We can't even guess whether the characters are alphabet-letters or pictographs. But what I meant was, do you think somebody like Dohmn could have made them?"

"N-n-no," Nanette said slowly. "They're too small. I don't see how those big paws of his could have done such delicate work."

"I agree. So now we're up against creature or creatures unknown. Do we take the chance?"

Nanette contemplated the enigmatic tunnel somberly. At last she said: "Well . . . whether we like it or not, isn't this what we came to see."

Dolph donned the earphones and listened for a moment. The beacon was louder than it had ever been before.

"I'm afraid it is," he said. "All right, Dohmn. Here we come."

The darkness in the tunnel was absolute after the first turn. They could proceed only by holding onto the straps of the dune-cat's pack. He seemed to be in no doubt about where he was going, however, and pressed ahead as rapidly as they could walk.

The bend continued, modifying itself gradually into a long smooth curve. After a while, Dolph was almost sure that they were going back the way they had come — but on a much lower level, for the downward slant that Nanette had noticed was continuous.

Shortly, the descent became steeper. The floor of the tunnel was still smooth, which was fortunate, for in the blackness the slightest irregularity would have caused a stumble. With nothing to see and no notion of what was ahead of them, the inhuman, steady yowling in the earphones was almost too eerie to bear.

Nor was it possible, deprived of the sun, to guess at the passage of time. Already it seemed as though they had been sinking into the ground for hours. Curiously, the air around them did not seem to be colder; in fact, Dolph thought, the temperature had gone up a little.

After another indefinitely long period, he was sure of it. On a venture, he took off one glove and reached out — very tentatively — for the nearer wall. He snatched his fingers back as soon as he encountered it, but the expected searing flash of frostbite did not follow. The wall was far from warm, but he judged that its surface temperature could not be much below freezing.

He realized suddenly that it had also felt abnormally smooth, almost silky; and rubbing his fingertips together, he was astonished to find that they were wet. Donning the glove hastily, he stamped and listened to the quality of the sound. It was distinctly changed.

"What it is?" Nanette whispered, tugging at his belt.

"The texture's different, somehow. We're not going through rock any more."

"What, then?"

"I'm not sure, but I think it's ice. And it's warmer here."

"Do you think we're under the Lake?"

"That's my guess." He slipped slightly and righted himself. "That's ice underfoot, sure enough. I wish we had a light — now'd be our chance to find out how thick the aquasphere is."

"If we keep on going down like this," Nanette said, "we'll wind up under it."

"Yes, if the pressure doesn't close the tunnel up first. There's a warm draft here — wonder if that helps keep it open?"

Dohmn growled slightly and tugged.

"All right, all right."

Almost immediately, however, the tunnel walls began to retreat; and so — judging by the echoes — did its roof. While Dolph was still puzzling over what this might portend, his straining eyes detected a faint glow, seemingly in the very air around them at first, but brightening with each new step until they could see that it came from above. The first impression was that they had come out again, under a dim, overcast sky; but that of course was impossible. It was the roof that was glowing, enormously far above them.

"Oh, Dolph! Look!"

He needed no urging. As they rounded a last bend, the ground sloped away before them, and at their feet there stretched out the dream-like ruins of a silent, entombed city.

Or was it waiting to be born? The air was warm, moist and thick, almost like an Earthly fog — and there was enough oxygen in it to breathe, for metabolisms slowed by the elixir. The city lay bathed in greenish-gray light, cast across it by the over-arching Lake, which concentrated the distant weak sunlight like a lens.

Dolph took off his mask and earphones and drew a deep, solemn breath. Nanette clung to his hand. The stillness was profound and made all the more marked by a far-away trilling of running water . . . a sound so awesome on this dry little planet that it almost suggested some supernatural presence.

The buildings of the city were tall, slender and widely spaced. Cut from some immemorial crystal which showed not the slightest age or wear, the transparent shapes towered like a convocation of thin ghosts — or like many droplets of topaz, balanced impossibly upon their narrow ends, their long facets unflashing in the even fill of the light.

Dohmn had stopped, standing erect, silent and motionless as a statue. Inside the clear walls of the city, nothing moved; yet it did not seem dead. Here under all the sand and ice of Mars, it spoke silently for a deep-buried stratum of life — a biosphere, a sheltering place for whatever unknown powers had built this principality and might still rule it . . .

The dune-cat made a soft sighing sound and, dropping back to all fours, padded away down a wide avenue — or was it a plaza? There was no time left to speculate or to sightsee; now that he was once more in motion, Dohmn went rapidly. It was

odd to see how much at home he seemed here, as though the city were only an extension of the silence of the desert. Here, however, the prosaic Earthly pack between his shoulders was ugly; it did not belong to this underworld of silent sky-high jewels.

The doorless towers flowed by. Here and there, fugitive glitters and knots of light shone and vanished behind their clear dark sides, like the essences of machines also cut from crystal and remembered from a dream.

Dolph lifted one earphone. The sound of the beacon still went on inside it, insistent and unchanged, but somehow it did not seem disturbing any more. It reminded him, instead, of some long aria, like that song the Sirens sang in Homer. The strident overtones which had sounded so inhuman before were still there, but now they were all too human — distortions of the pure melody introduced by the earphones themselves.

The avenue continued to broaden, as though the crystal towers were drawing aloofly away from the three little figures who were following that thread of song into their labyrinth. At the trail's end, the adamant pavement swooped suddenly away from the level of the road into a great pool of light, where the lens of Lacus Solis came to a focus: a marble-white amphitheater, with a perfect paraboloid floor which reflected the light back up against the icy sky in an almost solid-looking column.

"Dohwnn," Dohmn said.

They went down carefully, crossing terraces which were too large to be steps, too small to be stone benches. At the very center of the depression there was another crystal structure, like a box set on end on a stone dais; it was perhaps fifteen feet high.

Inside it was a throne. Someone or something was seated on it.

The figure was not easy to see, for the crystal case seemed to be filled with some dimly sparkling fluid. It was tall and not manlike, suggesting rather a serpent or worm with a cluster of six or eight small arms near the head end. On the whole, Dolph was just as glad he could see it no better.

Then it spoke.

There was no visible motion of the figure in the case, but a deep voice rolled slowly through the amphitheater. Dolph guessed that it was amplified. It seemed to have no specific source.

"You are the Earthmen," it said in perfect English. "Our dune rover has done well: *rrlr-ahmn-oh-ohrr,* Dohmn. Please come closer, so my machines may sense you better."

The two stepped closer hesitantly. "Who are you?" Dolph said.

"I no longer have a name," the voice said. "You might well call me the one who sleeps. I am the last master of the city."

"How do you know who we are?" Dolph said. "And speak our language?"

"Oh, as to language," the sleeper said, "I know all Earthly languages, except for some minor dialects. All your radio broadcasts reach Mars plainly. As for yourselves, I heard your interference pattern and deduced your presence, as I assume you had planned."

"Yes," Dolph said. "We were hoping somebody would eventually respond."

"Not possible. My signal is only a beacon and mechanical, intended to guide others of my race to this city. As you can see, we were a burrowing people. But today it serves only as a life-signal, to announce that I am still alive.

"I have heard no other such for many years, so it is probable that I am the last."

"Did you send Dohmn, then?" Nanette asked.

"No, sir," the sleeper said, revealing with that one word how great an information gap still existed between itself and its visitors. "The dune rovers are free agents, though once they were to us rather as your dogs are to you. They are now the coming race here — provided of course that you will help them, as one creature of light to another. I so charge you."

"We're not doing too well at helping ourselves at the moment," Dolph said.

"That will change. After all, you are only the first of many men. Quarry our cities for whatever is there that you may need. It is your inheritance . . . I have waited a thousand of my years to bequeath it."

"Then you can't help us now?" Nanette said.

"No. My people are already dead,

or deep in dreams from which we shall not awaken any more. But your people are coming — indeed, are nearly above us now."

"What! But how —"

"They are on their way; I have heard them. We give you our world. Use it well and love and guide our *dohmnimi*, who deserved the best from us."

"I hope we will," Dolph said, shaken. "But we're sort of a predatory race —"

"Yes, you are young. Otherwise you would not have managed to come here. But the *dohmnimi* are wise in their own half-savage way. If you abuse them, they will avoid you. If you seek their friendship, they will give you much. The choice is yours; but you will never wholly possess high and ancient Mars without their good will. They have already offered you that, freely, when you were in most need of it. Will you forget?"

"No," Dolph said. "We won't forget. I promise."

"Then my dream ends here. Go now. Your people are at hand. All Praise to That Which Dreams and never ceases; I can sleep now. Good-by, *dohmn* and men."

The voice ceased — and so, Dolph realized suddenly, did the signal in the earphones.

There was a long, terrible silence; and then, a low hoarse sound which Dolph would remember all his life. It was the funeral keening of the dune-cat, mourning the passing of old Mars.

Overhead, the new Mars waited expectantly.

XV

PROJECT ARES

Something had gone out of the city when they passed back through it. The topaz flanks of the towers were dim and lusterless, and there were no longer any lights behind them. Even the air seemed colder.

On the surface, it was brilliant blue-black night, not far from dawn. Had they really been underground that long? But obviously they had. Beyond the stone pillars, the dune-cat paused and looked up at the stars. Then, suddenly, he pointed.

At first, Dolph thought he was indicating the racing spark of Phobos. While he watched it in puzzlement, he realized that Phobos should not be visible from this latitude at this hour — and at the same moment, the spark flared, briefly but brilliantly, like a tiny candle. Behind it, two more flares licked out and died again. Nanette gasped.

"Ships!" Dolph shouted. "Quick, quick — the beacon's stopped — we've got to start our generator!"

They scrambled wildly up the terraces. By the time they reached their camp, the sparks were long vanished over the half-circumscribed horizon. Dolph got his signal going again with shaking hands — this time not to attract Martian attention, but Terrestial.

Then they settled down to wait, wondering if they had dreamed everything that had happened since they had left their remote oasis — now almost cozy in memory, with

the loss of any hope of help from the dead or dreaming Sleeper to get them back to it. Even the morning apparently was never going to come.

But after a freezing eternity the sun shot up over the rim of the Lake with its customary abruptness — there was no real dawn on Mars, only an unceremonious blast of sunlight in a still-black sky — and the thin wind whirled the sand in spirals over the outspread ice. Still disbelieving, they watched the sky until their eyes ached and watered behind the masks.

Nanette saw the skiff first. It grew from a black dot low in the sky to a thing like a thin bat and then rapidly into a preposterous kite-like contraption with enormous, swept-back vanes which seemed only barely able to keep its needle-slim fuselage airborne. It came skimming down along the Lake to a seemingly certain crash and disappeared in a roaring ball of fire which plowed a deepening trench all the way across the ice to the near ringwall.

When the fire went out, the skiff's sails were stripped and crumpled behind it like so many wadded newspapers abandoned in its track. Its body, however, was miraculously intact, though half imbedded in the surface of the Lake.

"Oh, Dolph! How could *anybody* live through that?"

"People are tough," Dolph said, smiling tightly. "Let's go see them. I think they'll be surprised!"

They descended the terraces again, with Dohmn loping easily behind. While they went down, the dart cooled with shrill squeaks of metal against ice, and after a while a beehive on its top turned around solemnly three times and fell off with a muted clang.

A man in full space armor struggled out and slid clumsily down to the Lake, wrestling with a U.N. flag on a long metal spread which kept trying to trip him; evidently he had not expected any such buffeting as the morning wind was giving him. When he was sure of his footing, he planted the flag in the ice with a stab almost as angry as it was ceremonious.

By the time he looked up again, the two ragged castaways and the mottled, spectacularly dangerous-looking dune-cat were grinning at him from a distance of only five or six yards. He simply froze inside his elaborate armor. Under his bubble helmet, his honest, craggy hero's face was a study in disbelief and chagrin.

Dolph stepped forward and held out his hand, pulling Nanette along with him. The spaceman retreated one elephantine step and then stood fast.

Then his public-address box squawked and cleared its throat. "Are you —" he said, "are *you* Miss Ford and Master Haertel?"

Nanette laughed, which seemed to upset him even more, but Dolph said gravely:

"Yes, we are. And this is Dohmn, the present Jeddak of Barsoom. Welcome to Mars, Earthman!"

The Earthman made a truly memorable answering speech. He said: "Ulp."

One of the great ships of the Ares fleet came down the next day in a fury of smoke, sand and steam, in response to a terse call from the skiff, and Dolph and Nanette were taken aboard.

The subsequent catechism was an involved one. Dolph could not remember having been asked so many questions since he had taken his college board exams. Gradually, however, he and Nanette were able to piece together a picture of what had happened on Earth that had finally brought Project Ares here — finally, and yet far sooner than they had ever had any reason to expect.

Some of the story was political or diplomatic and hence seemed likely to remain permanently unclear. Though the Gold War had long been over, the governmental habit of "security" had never been entirely extirpated. That part had something to do with Dolph's invention and with a complex maneuver by some corporation research director who had pressured NASA into trying for Mars far ahead of its cobwebbed schedule. Also involved, it appeared, was some adaptation of Dolph's discovery which had led to a vastly improved form of ion-drive for spaceships — hence the unprecedented maneuverability of the rebuilt *von Braun* and her two sister ships; but this part of the story was especially unclear, since none of the vague references to the new drive suggested to Dolph that his antigravity principle was even understood, let alone contributory.

The skiff pilot's astonishment, on the other hand, proved to be entirely easy to understand. He had been told to more than half expect to find "the children" alive, for Dolph's jamming signal *and* the Sleeper's beacon had been heard aboard the *von Braun* while she was still six months away from planetfall; but though the two signals had heterodyned into one, so that no source for the absurdly complicated noise could be plotted on a map of Mars, the expedition's navigator and commander had gone on assuming that Dolph and Nanette — or whichever of them might still be alive — were to be sought in the Sinus Sabaeus area for which Dolph's charts had shown him to have set out.

The sudden transformation of the signal into a simpler one, easily pinpointed in Lacus Solis half a hemisphere away from where Dolph and Nanette were supposed to be — and this, almost at the very moment that the three Ares ships were settling into their parking orbits around Mars — had baffled everyone, and there had been a sharp argument over whether or not to risk sacrificing the one-shot skiff (which had been designed for a long slow mapping sweep of the planet at a lower altitude than the three spaceships could maintain, not for a hot landing inside a narrow boundary) to the hope of solving a mystery which close approach to Mars had made more mysterious than ever.

But the decision had been made at last, for some reason which the *von Braun's* officers would not explain at all, but which made them

snicker in stifled voices every time they thought of it, like so many children who knew where the Christmas presents were hidden and were having a hard time trying to look innocent. Every time that interesting secret was approached, the questions veered off into wholly expectable quizzing about Mars — and about Dohmn, who had evidently given the skiff's pilot a bad shock.

Finally, Dolph cut off the questioning himself. "Dohmn is all right. He's been a big help, and I'm sorry I made a joke about him to begin with — I should have known it would just confuse everybody. He's a member of the new ruling race here, that's all, and a friend of ours. But look here, Captain — we're glad to see you, of course, but — *what is it you're keeping from us?*"

"Nothing to be alarmed about," the skipper said hastily, but he could not quite stop smiling. "Just one more interview. We want you to talk to the mission's bacteriologist."

"Do you think we're carrying some sort of Martian mold?" Nanette demanded. "Why, we haven't been sick a minute since we got here. Not sneezing sick, I mean. Just undernourished and things like that."

The commander laughed outright. "No, nothing like that. But it's not up to me to explain. Lieutenant Gulliver, will you take our visitors to the xenology lab?"

When the laboratory bulkhead swung back and Dolph and Nanette stepped through it, the last mystery explained itself. The expedition's bacteriologist was Mrs. Haertel — Dolph's mother.

Nothing the least bit unpredictable was said for quite a while; but after the first flurries of surprise and joy, Dolph found that he was feeling a little strange. His mother looked older than he had expected and markedly thinner. He was reminded that these years must have brought her an ordeal of her own.

It was Nanette, however, who first put the feeling into words.

"We're very sorry, Mrs. Haertel," she said. "It was stupid and thoughtless of us, shooting off like that and causing so much worry and trouble."

"It doesn't matter now," Mrs. Haertel said. "I knew all along that you were alive, somehow. You *were* a little hasty, but you were far from stupid — otherwise you wouldn't have survived. I suppose the whole thing, bad *and* good, couldn't have happened the way it did if you'd been older. Your various failures of foresight were just what anyone would expect from teen-agers — but on the other hand, once you were here, you saw direct, simple, unorthodox solutions to a lot of your problems that would have escaped an adult completely, even an engineer, because his mind would have been too thoroughly set in the conventional grooves."

She smiled suddenly. "In fact, you got the fleet to Mars, between your precipitousness and Dolph's discovery. Nobody your age had made so much history since the Children's Crusade — and what you did was a lot more useful! It isn't over yet, either. There's that business of the elixir, which may be the one thing

that makes true colonization possible, that, and your dealings with the Old Martian, and much more — why, you're the resident experts on the planet!"

"We didn't do much exploring," Dolph said regretfully. "We couldn't."

"No matter. You'll probably be spending the rest of your lives leading expeditions, now that we've got more equipment here. Unless, of course, you let us sidetrack you into being colonial governors or some other such administrative job." Mrs. Haertel paused and looked at them critically. "Though there's one oversight we'd better repair right away, before the newspapers get hold of this story. You'd better get Captain Friedman to marry you, before he's too busy to pin down about it."

Dolph shot a helpless glance at Nanette, but she only grinned impudently and offered no help. He said:

"Married! Not that I'd mind — I mean, I think it's a great idea if Nanette — that is, if you don't think that — I mean, we're not exactly —"

Nanette said, with the barest trace of malice, "*I* think he thinks he's too young. Besides, he hasn't asked me yet. For all he knows, I might be much more interested in Dohmn."

"Dohmn?"

"The dune-cat," Dolph said, feeling that the conversation was now utterly out of control.

"Oh, nonsense. Dolph, it's a little late in the game for you to be gunshy. If you doubt me, I've got a witness. Look over there."

For some time, Dolph had been

marginally aware that there was someone else in the cabin: a tall man standing opposite him, behind his mother and well in the background. Now, for the first time, he looked closely at the silent shape.

He saw a bearded figure, dressed like Nanette and himself in fresh green Space Force fatigues. His expression was hard to read behind all the whiskers, but his gaze was level and probing. Judging by his color and stance, he had spent many years out in hard weather; he looked lean and competent.

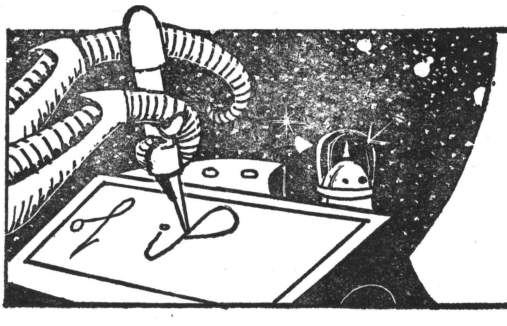
"Anybody you know?" Mrs. Haertel said softly.

"I don't —" Dolph started to say and then stopped, for as he spoke, the stranger spoke too. He said exactly the same words.

He was, in fact, only a reflection in the polished metal of the *von Braun's* hull. The tall man was Dolph himself. It had been that many years since he had seen a mirror.

Dolph took Nanette's hand and bowed solemnly to the image.

"How do you do, Mr. and Mrs. Haertel," he said solemnly. "And — welcome to Mars!" END



HUE AND CRY

Dear Editor:

I am writing this letter in answer to the question posed in your June editorial, viz, ". . . bearing in mind that light itself has mass; it is deflected by gravitational fields, just like an orbiting rock — what happens when *light* travels at light speeds?" Well, bearing in mind that I may not be at all qualified to write on this subject (I believe that I may be hopelessly out of date), I shall forge ahead.

When I first read the above stated question, I thought, "Of course, how obvious. Light has a rest mass of zero!" But, heh heh, doubts began to slyly insinuate themselves. "Light is deflected by a gravitational field." So I was forced (hating every minute of it) to go to my books.

One of the reasons for my trepidation was immediately apparent when I ran across a passage like this: "The energy of the photon is proportional to the frequency of the field. But energy of a particle is the time component of a four-vector with space components proportional to the momentum of the particle, and the frequency is the time component of a four-vector with space components proportional to the wave number (reciprocal of the wave length) of the wave." (From *Methods of Theoretical Physics*, by Morse and Feshbach, McGraw-Hill, 1953. Sounds like something Frank Herbert might write, doesn't it?)

There was one last recourse to easy truth. I tried to think of what my old physics professor might say. I visualized him as he was, a saintly old man, always on the verge of retirement, a kind of cross between Albert Einstein and Albert Schweitzer — strong in his quest for truth! (You took that course too, eh?) I could see his lips moving, but I couldn't hear him. (He spoke softly and I sat in the back of the class.) Ah, well, back to the hard way.

I think the easiest thing to do is to let the path that a beam of light (a packet of photons) would take be a straight line. "That straight line's curved, professor." "Back, dummkopf! That's a straight line!" So, then, "space must be curved" to account for this hypothesis. Is that so strange, though? We know of "bending of a "straight" path by

the movement of stars when the path is near the surface of the sun. Consider a sheet of some elastic substance stretched out flat. Place a rather heavy object in the center of the sheet. Now roll a ball so that it will pass near the center and fast enough that it will reach the other side. The path of the ball is of course, curved. "But," you say, "this is just an analogy to gravitation." Yes, it is. That is exactly what it is. And the ball is a photon, a "bundle" of "waves". Well then, consider a light "massless" string laid out along the floor with a curve in it. Flip the end of the string to start a pulse moving. When the pulse reaches the curve, the peak of the pulse will lean out away from the direction of the curve! The pulse seems to be undergoing an acceleration! It wants to move in a straight path! Well, the pulse is not undergoing an acceleration; the pulse has no mass, and any mass a real string would have is simply going up and down. The seeming acceleration is due to forces pulling the pulses into a new line, but these forces act on a massless pulse.

Suppose you plotted the path of the peak of the pulse as it moves along the curved path. Now bend the X axis so that it fits the curve of the string. A similar orientation of the Y axis will take care of the sloping of the pulse as it rounds the curve. You now have the pulse moving in a "straight line".

You may attribute a "momentum" to this pulse; a momentum proportional to its energy where its energy is proportional to the frequency of the wave, but it must be remembered that in the case of the photon this momentum is a result of considerations of wave-particle duality.

No, I can't say what happens when *light* travels at light speed, and I don't have any sort of positive conviction that what I have just said is any where near the truth. I haven't any idea what is meant by massless momentum; and I have the awful feeling that what I have just belabored is ridiculous. —Roy E. Kimbrell III, 2d Lt. AF, Box 4216, College Station, Texas 77801.

* * *

● There we are, filled up tight for another month. Our "first" this month is *The Empty Man* by Gardner Raymond Dozois (whose writing time, for the next little while at least, will be preempted by other calls — he's just entered the army). We do print one "first" story each issue, you know — which proves (a) that we *do* read all the unsolicited manuscripts submitted, because that's where we find them, and (b) that writing science-fiction is not yet a dead art form!

See you next month, when we'll have a lineup that includes A. Bertram Chandler, J. T. McIntosh, Gordon R. Dickson and (speaking of "firsts") one of our most pleasing graduates from that status, Larry Niven, with the first in a group of stories (not exactly a series — they won't all have the same characters, etc.) that we are pretty sure will be well liked indeed. It's about a neutron star. You can tell that right away from the title — *Neutron Star* — and it's that recent rarity, *science* fiction.

— *The Editor*

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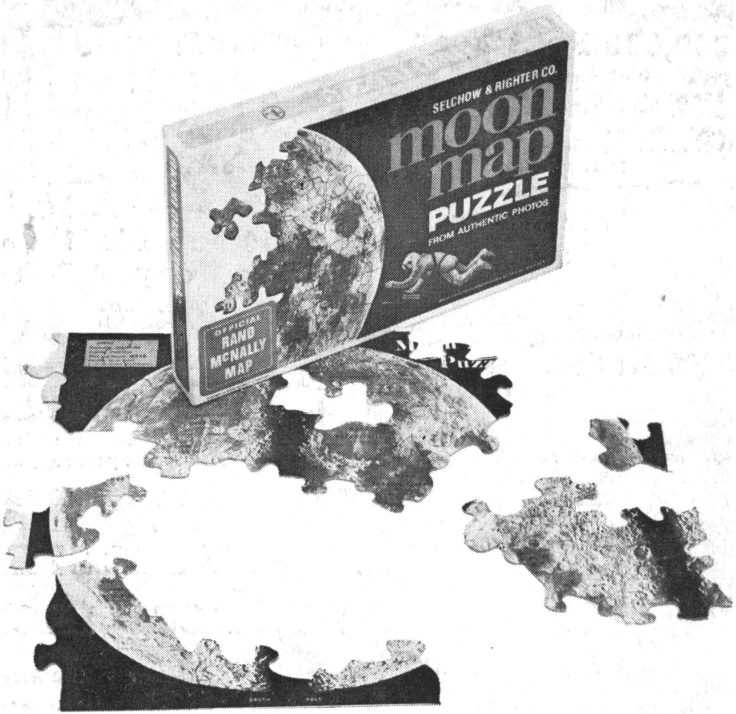

MOON MAP PUZZLE

Official Rand McNally Map taken from actual photos of the moon. This circular Map Puzzle shows mountains, craters, seas, basins and valleys, with frame containing information about eclipses, tides, and seasons. Map when completed 21¼" x 14¼". Made of heavy cardboard and diecut.

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