WORLDS OF

JANUARY 1963 • 35c

if SCIENCE FICTION

The Five Hells of Orion by FREDERIK POHL

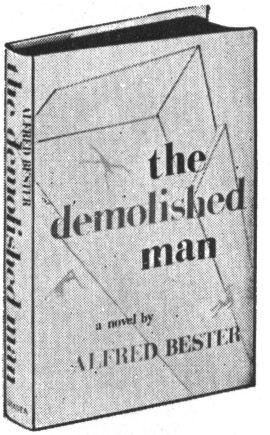
Podkayne of Mars by ROBERT A. HEINLEIN

BESTER'S BEST!

Have you read his famed THE DEMOLISHED MAN? Lived in its vividly real telepathic society, detailed so ingeniously and dramatically that, finishing the book, you'll find it hard to believe that society doesn't exist — yet!

By special arrangement with the publisher of THE DEMOLISHED MAN, we can offer you this magnificent book for $1.00, 2/3 off the regular price, plus 25¢ for postage and handling.

⅓ OF LIST PRICE



CASE BOUND $1.00

Supplies are limited! Send your order in immediately!

(Use Coupon or Separate Sheet)

GALAXY PUBLISHING CORP.

Please rush me ☐ copies of THE DEMOLISHED MAN

421 Hudson St. New York 14, N. Y.

THE DEMOLISHED MAN
The Original Edition — Complete!
Not A Low Cost Reprint — Yet Yours For Only $1.00!
Plus Postage 25¢

Name_____

Address_____

City_____ State_____

I Enclose_____

worlds of if science fiction

JANUARY 1963
All Stories New

Vol. 12, Number 6

Sol Cohen, *Publisher*

Frederik Pohl, *Editor*

Theodore Sturgeon, *Feature Editor*

Cover by Schelling from The Five Hells of Orion

Next issue (March) on sale January 14th

IF published bi-monthly by Digest Productions Corporation, Robert M. Guinn, President, Vol. 12, No. 6, Main Office: 421 Hudson Street, New York 14, New York. 35c per copy. Subscriptions 12 issues $3.00 in the United States, Canada, Mexico, South and Central America and U. S. Possessions, elsewhere $4.00. Second-class postage paid at New York, New York, and at additional mailing offices.

Printed in the U. S. A. by the Guinn Company, Inc., New York 14, N.Y.

NOSTRADAMUS CONCLUDED

The main conclusion to be concluded from our little game (can you predict what the lead story in the paper will be 90 days from now?) is that people read sf, or at least people who read *If*, will *not* limit themselves. They wouldn't follow format. (So and so has been happening. Such and such has happened. Therefore this and that will happen in 90 days.) They wouldn't predict for three months.

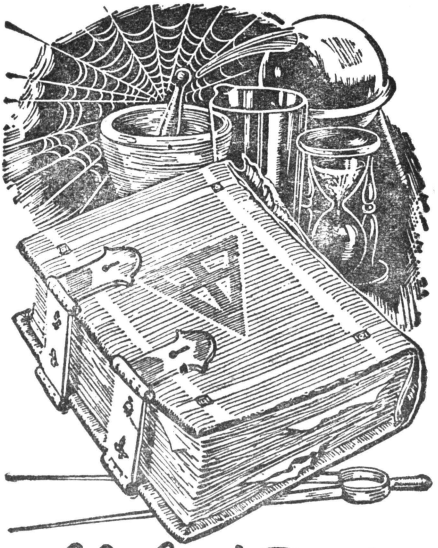
But boy, they go high and far out!

A surprising number used the safe "I predict that things will happen as usual" kind of prognostication, and used it amusingly, like L. J. Fremstad of El Paso, who said, "The Democrats will start a piece of legislation, the Republicans will call it Socialism, the Democrats will call it Liberalism, the American public will put up with it." Rosalyn Woldin, of Brooklyn, N. Y., came up with a terrifying clutch of disasters, not one of which would fall within the 90-day limit, but which included a generation of muscle-bound youth due to the success of the Kennedy physical-fitness program and the failure of other kinds of education; a deterioration in public confidence in doctors because of Medicare arguments and the Canadian strike, plus a rise in quackery; religious protests against space exploration to the point of dangerous fanaticism; monetary inflation to the point of economic ruin, and union recognition of purchasing power as a more important consideration than more dollars; a worsening of interracial strife, then its ultimate solution by boycott; and finally, scandalous behavior by movie people will abate, then continue as before.

One respondent made a prediction which I shall not repeat, though I shall acknowledge it if and when it turns out to be true. It has to do with a course of action to be taken by a public figure. If we modestly assume that this personage probably never would see the copy of *If* with the prediction and, further, would probably do nothing of the kind, the possibility still remains that if the prediction is right, the prediction itself might have been a motivating factor. I wouldn't want that on your conscience or mine.

Space prohibits a listing of all contributors. Our warm thanks to all participants. Maybe we'll try this again some time, when I am better able to phrase the limitations of the problem. A prize one-year subscription to IF goes to Mrs. Angelo Castagna of Thompsonville, Conn., she of the "man-powered space ship", with our thanks and our blessings.

—THS



Secrets entrusted to a few

The Unpublished Facts of Life

THERE are some things that cannot be generally told—*things you ought to know.* Great truths are dangerous to some—but factors for *personal power* and *accomplishment* in the hands of those who understand them. Behind the tales of the miracles and mysteries of the ancients, lie centuries of their secret probing into nature's laws—their amazing discoveries of *the hidden processes of man's mind,* and *the mastery of life's problems.* Once shrouded in mystery to avoid their destruction by mass fear and ignorance, these facts remain a useful heritage for the thousands of men and women who privately use them in their homes today.

THIS FREE BOOK

The Rosicrucians (not a religious organization) an age-old brotherhood of learning, have preserved this secret wisdom in their archives for centuries. *They now invite you to share the practical helpfulness of their teachings.* Write today for a free copy of the book, "The Mastery of Life." Within its pages may lie a new life of opportunity for you. Address: Scribe S.C.X.

SEND THIS COUPON

Scribe S.C.X.
The ROSICRUCIANS (AMORC)
San Jose, California

Please send me the *free* book, *The Mastery of Life,* which explains how I may learn to use my faculties and powers of mind.

Name_____

Address_____

City_____

The Rosicrucians (AMORC) SAN JOSE, CALIFORNIA, U.S.A.

The initials AMORC indicate the true and authentic Rosicrucian Order

THE FIVE HELLS OF ORION

BY FREDERICK POHL

Illustrated by Schelling

Out in the great gas cloud of the Orion Nebula McCray found an ally — and a foe!

His name was Herrell McCray and he was scared.

As best he could tell, he was in a sort of room no bigger than a prison cell. Perhaps it was a prison cell. Whatever it was, he had no business in it; for five minutes before he had been spaceborne, on the Long Jump from Earth to the thriving colonies circling Betelgeuse Nine. McCray was ship's navigator, plotting course corrections—not that there were any, ever; but the reason there were none was that the check-sightings were made every hour of the long flight. He had read off the azimuth angles from the computer sights, automatically locked on their beacon stars, and found them correct; then out of long habit confirmed the locking mechanism visually. It was only a personal quaintness; he had done it a thousand times. And while he was looking at Betelgeuse, Rigel and Saiph . . . it happened.

The room was totally dark, and it seemed to be furnished with a collection of hard, sharp, sticky and knobby objects of various shapes and a number of inconvenient sizes. McCray tripped over something that rocked under his feet and fell against something that clattered hollowly. He picked himself up, braced against somtthing that smelled dangerously of halogen compounds, and scratched his shoulder, right through his space-tunic, against something that vibrated as he touched it.

McCray had no idea where he was, and no way to find out.

Not only was he in darkness, but in utter silence as well. No. Not quite utter silence.

Somewhere, just at the threshold of his senses, there was something like a voice. He could not quite hear it, but it was there. He sat as still as he could, listening; it remained elusive.

Probably it was only an illusion.

But the room itself was hard fact. McCray swore violently and out loud.

It was crazy and impossible. There simply was no way for him to get from a warm, bright navigator's cubicle on *Starship Jodrell Bank* to this damned, dark, dismal hole of a place where everything was out to hurt him and nothing explained what was going on. He cried aloud in exasperation: "If I could only *see!*"

He tripped and fell against something that was soft, slimy and, like baker's dough, not at all resilient.

A flickering halo of pinkish light appeared. He sat up, startled. He was looking at something that resembled a suit of medieval armor.

It was, he saw in a moment, not armor but a spacesuit. But what was the light? And what were these other things in the room?

Wherever he looked, the light danced along with his eyes. It was like having tunnel vision or wearing blinders. He could see what he was looking at, but he could see nothing else. And the things he could see made no sense. A spacesuit, yes; he knew that he could construct a logical explanation for that with no trouble—maybe a subspace meteorite striking the *Jodrell Bank*, an explosion, himself knocked out, brought here in a suit . . . well, it was an explanation with more holes than fabric, like a fisherman's net, but at least it was rational.

How to explain a set of Gibbon's *Decline and Fall of the Roman Empire?* A space-ax? Or the old-fashioned child's rocking-chair, the chemistry set—or, most of all, the scrap of gaily printed fabric that, when he picked it up, turned out to be a girl's scanty bathing suit? It was slightly reassuring, McCray thought, to find that most of the objects were more or less familiar. Even the child's chair—why, he'd had one more or less like that himself, long before he was old enough to go to school. But what were they doing here?

Not everything he saw was familiar. The walls of the room itself were strange. They were not metal or plaster or knotty pine; they were not papered, painted or overlaid with stucco. They seemed to be made of some sort of hard organic compound, perhaps a sort of plastic or processed cellulose. It was hard to tell colors in the pinkish light. But they seemed to have none. They were "neutral"—the color of aged driftwood or unbleached cloth.

Three of the walls were that way, and the floor and ceiling. The fourth wall was something else. Areas in it had the appearance of gratings; from them issued the pungent, distasteful halogen odor. They might be ventilators, he thought; but if so the air they brought in was worse than what he already had.

McCray was beginning to feel more confident. It was astonishing how a little light made an impossible situation bearable, how quickly his courage flowed back when he could see again.

He stood still, thinking. Item, a short time ago—subjectively it seemed to be minutes — he had been aboard the *Jodrell Bank* with nothing more on his mind than completing his check-sighting and meeting one of the female passengers for coffee. Item, apart from being sha-

ken up and—he admitted it—scared damn near witless, he did not seem to be hurt. Item, wherever he was now, it became, not so much what had happened to him, but what had happened to the ship?

He allowed that thought to seep into his mind. Suppose there had been an accident to the *Jodrell Bank*.

He could, of course, be dead. All this could be the fantasies of a cooling brain.

McCray grinned into the pink-lit darkness. The thought had somehow refreshed him, like icewater between rounds, and with a clearing head he remembered what a spacesuit was good for.

It held a radio.

He pressed the unsealing tabs, slipped his hand into the vacant chest of the suit and pulled out the hand mike. "This is Herrell McCray," he said, "calling the *Jodrell Bank*."

No response. He frowned. "This is Herrell McCray, calling *Jodrell Bank*.

"Herrell McCray, calling anybody, come in, please."

But there was no answer.

Thoughtfully he replaced the microphone. This was ultrawave radio, something more than a million times faster than light, with a range measured, at least, in hundreds of light-years. If there was no answer, he was a good long way from anywhere.

Of course, the thing might not be operating.

He reached for the microphone again—

He cried aloud.

The pinkish lights went out. He was in the dark again, worse dark than before.

For before the light had gone, McCray had seen what had escaped his eyes before. The suit and the microphone were clear enough in the pinkish glimmer; but the hand—his own hand, cupped to hold the microphone—he had not seen at all. Nor his arm. Nor, in one fleeting moment of study, his chest.

McCray could not see any part of his own body at all.

II

Someone else could.

Someone was watching Herrell McCray, with the clinical fascination of a biochemist observing the wigglings of paramecia in a new antibiotic—and with the prayerful emotions of a starving, shipwrecked, sailor, watching the inward bobbing drift of a wave-born cask that *may* contain food.

Suppose you call him "Hatcher" (and suppose you call it a "him.") Hatcher was not exactly male, because his race had no true males; but it did have females and he was certainly not that. Hatcher did not in any way look like a human being, but they had features in common.

If Hatcher and McCray had somehow managed to strike up an acquaintance, they might have got along very well. Hatcher, like McCray, was an adventurous soul, young, able, well-learned in the technical sciences of his culture. Both enjoyed games—McCray baseball, poker and three-dimensional chess; Hatcher a number of sports which defy human description. Both held positions of some importance—considering their ages—in the affairs of their respective worlds.

Physically they were nothing alike. Hatcher was a three-foot, hard-shelled sphere of jelly. He had "arms" and "legs," but they were

not organically attached to "himself." They were snakelike things which obeyed the orders of his brain as well as your mind can make your toes curl; but they did not touch him directly. Indeed, they worked as well a yard or a quarter-mile away as they did when, rarely, they rested in the crevices they had been formed from in his "skin." At greater distances they worked less well, for reasons irrelevant to the Law of Inverse Squares.

Hatcher's principal task at this moment was to run the "probe team" which had McCray under observation, and he was more than a little excited. His members, disposed about the room where he had sent them on various errands, quivered and shook a little; yet they were the calmest limbs in the room; the members of the other team workers were in a state of violent commotion.

The probe team had had a shock.

"Paranormal powers," muttered Hatcher's second in command, and the others mumbled agreement. Hatcher ordered silence, studying the specimen from Earth.

After a long moment he turned his senses from the Earthman. "Incredible—but it's true enough," he said. "I'd better report. Watch him," he added, but that was surely unnecessary. Their job was to watch McCray, and they would do their job; and even more, not one of them could have looked away to save his life from the spectacle of a creature as odd and, from their point of view, hideously alien as Herrell McCray.

Hatcher hurried through the halls of the great buried structure in which he worked, toward the place where the supervising council of all probes would be in permanent session. They admitted him at once.

Hatcher identified himself and gave a quick, concise report:

"The subject recovered consciousness a short time ago and began to inspect his enclosure. His method of doing so was to put his own members in physical contact with the various objects in the enclosure. After observing him do this for a time we concluded he might be unable to see and so we illuminated his field of vision for him.

"This appeared to work well for a time. He seemed relatively undisturbed. However, he then reverted to physical-contact, manipulating certain appurtenances of an artificial skin we had provided for him.

"He then began to vibrate the atmosphere by means of resonating organs in his breathing passage.

"Simultaneously, the object he was holding, attached to the artificial skin, was discovered to be generating paranormal forces."

The supervising council rocked with excitement. "You're sure?" demanded one of the councilmen.

"Yes, sir. The staff is preparing a technical description of the forces now, but I can say that they are electromagnetic vibrations modulating a carrier wave of very high speed, and in turn modulated by the vibrations of the atmosphere caused by the subject's own breathing."

"Fantastic," breathed the councillor, in a tone of dawning hope. "How about communicating with him, Hatcher? Any progress?"

"Well . . . not much, sir. He suddenly panicked We don't know why; but we thought we'd better pull back and let him recover for a while."

The council conferred among itself for a moment, Hatcher waiting. It was not really a waste of time for him; with the organs he had left in the probe-team room, he was in fairly close touch with what was going on—knew that McCray was once again fumbling among the objects in the dark, knew that the team-members had tried illuminating the room for him briefly and again produced the rising panic.

Still, Hatcher fretted. He wanted to get back.

"Stop fidgeting," commanded the council leader abruptly. "Hatcher, you are to establish communication at once."

"But, sir . . . " Hatcher swung closer, his thick skin quivering slightly; he would have gestured if he had brought members with him to gesture with. "We've done everything we dare. We've made the place homey for him—" actually, what he said was more like, *we've warmed the biophysical nuances of his enclosure*—"and tried to guess his needs; and we're frightening him half to death. We *can't* go faster. This creature is in no way similar to us, you know. He relies on paranormal forces—heat, light, kinetic energy—for his life. His chemistry is not ours, his processes of thought are not ours, his entire organism is closer to the inanimate rocks of a sea-bottom than to ourselves."

"Understood, Hatcher. In your first report you stated these creatures were intelligent."

"Yes, sir. But not in our way."

"But in *a* way, and you must learn that way. I know." One lobster-claw shaped member drifted close to the councillor's body and raised itself in an admonitory gesture. "You want time. But we don't have time, Hatcher. Yours is not the only probe team working. The Central Masses team has just turned in a most alarming report."

"Have they secured a subject?" Hatcher demanded jealously.

The councillor paused. "Worse than that, Hatcher. I am afraid their subjects have secured one of them. One of them is missing."

There was a moment's silence. Frozen, Hatcher could only wait. The council room was like a tableau in a museum until the councillor spoke again, each council member poised over his locus-point. his members drifting about him.

Finally the councillor said, "I speak for all of us, I think. If the Old Ones have seized one of our probers our time margin is considerably narrowed. Indeed, we may not have any time at all. You must do everything you can to establish communication with your subject."

"But the danger to the specimen—" Hatcher protested automatically.

"—is no greater," said the councillor, "than the danger to every one of us if we do not find allies *now*."

Hatcher returned to his laboratory gloomily.

It was just like the council to put the screws on; they had a reputation for demanding results at any cost—even at the cost of destroying the only thing you had that would make results possible.

Hatcher did not like the idea of endangering the Earthman. It cannot be said that he was emotionally involved; it was not pity or sympathy that caused him to regret the

dangers in moving too fast toward communication. Not even Hatcher had quite got over the revolting physical differences between the Earthman and his own people. But Hatcher did not want him destroyed. It had been difficult enough getting him here.

Hatcher checked through the members that he had left with the rest of his team and discovered that here were no immediate emergencies, so he took time to eat. In Hatcher's race this was accomplished in ways not entirely pleasant to Earthmen. A slit in the lower hemisphere of his body opened, like a purse, emitting a thin, pussy, fetid fluid which Hatcher caught and poured into a disposal trough at the side of the eating room. He then stuffed the slit with pulpy vegetation the texture of kelp; it closed, and his body was supplied with nourishment for another day.

He returned quickly to the room. His second in command was busy, but one of the other team workers reported—nothing new—and asked Hatcher's appearance before the council. Hatcher passed the question off. He considered telling his staff about the disappearance of the Central Masses team member, but decided against it. He had not been told it was secret. On the other hand, he had not been told it was not. Something of this importance was not lightly to be gossiped about. For endless generations the threat of the Old Ones had hung over his race, those queer, almost mythical beings from the Central Masses of the galaxy. One brush with them, in ages past, had almost destroyed Hatcher's people. Only by running and hiding, bearing one of their planets with them and abandoning it—with its population—as a decoy, had they arrived at all.

Now they had detected mapping parties of the Old Ones dangerously near the spiral arm of the galaxy in which their planet was located, they had begun the Probe Teams to find some way of combating them, or of fleeing again.

But it seemed that the Probe Teams themselves might be betraying their existence to their enemies—

"Hatcher!"

The call was urgent; he hurried to see what it was about. It was his second in command, very excited. "What is it?" Hatcher demanded.

"Wait . . . "

Hatcher was patient; he knew his assistant well. Obviously something was about to happen. He took the moment to call his members back to him for feeding; they dodged back to their niches on his skin, fitted themselves into their vestigial slots, poured back their wastes into his own circulation and ingested what they needed from the meal he had just taken . . . "Now!" cried the assistant. "Look!"

At what passed among Hatcher's people for a viewing console an image was forming. Actually it was the assistant himself who formed it, not a cathode trace or projected shadow; but it showed what it was meant to show.

Hatcher was startled. "Another one! And—is it a different species? Or merely a different sex?"

"Study the probe for yourself," the assistant invited.

Hatcher studied him frostily; his patience was not, after all, endless. "No matter," he said at last. "Bring the other one in."

And then, in a completely different mood, "We may need him badly. We may be in the process of killing our first one now."

"Killing him, Hatcher?"

Hatcher rose and shook himself, his mindless members floating away like puppies dislodged from suck. "Council's orders," he said. "We've got to go into Stage Two of the project at once."

III

Before Stage Two began, or before Herrell McCray realized it had begun, he had an inspiration.

The dark was absolute, but he remembered where the spacesuit had been and groped his way to it and, yes, it had what all spacesuits had to have. It had a light. He found the toggle that turned it on and pressed it.

Light. White, flaring, Earthly light, that showed everything — even himself.

"God bless," he said, almost beside himself with joy. Whatever that pinkish, dancing halo had been, it had thrown him into a panic; now that he could see his own hand again, he could blame the weird effects on some strange property of the light.

At the moment he heard the click that was the beginning of Stage Two.

He switched off the light and stood for a moment, listening.

For a second he thought he heard the far-off voice, quiet, calm and almost hopeless, that he had sensed hours before; but then that was gone. Something else was gone. Some faint mechanical sound that had hardly registered at the time, but was not missing. And there was, perhaps, a nice new sound that had not been there before; A very faint, an almost inaudible elfin hiss.

McCray switched the light on and looked around. There seemed to be no change.

And yet, surely, it was warmer in here.

He could see no difference; but perhaps, he thought, he could smell one. The unpleasant halogen odor from the grating was surely stronger now. He stood there, perplexed.

A tinny little voice from the helmet of the space suit said sharply, amazement in its tone, "McCray, is that you? Where the devil are you calling from?"

He forgot smell, sound and temperature and leaped for the suit. "This is Herrell McCray," he cried. "I'm in a room of some sort, apparently on a planet of approximate Earth mass. I don't know —"

"McCray!" cried the tiny voice in his ear. "Where are you? This is *Jodrell Bank* calling. Answer, please!"

"I *am* answering, damn it," he roared. "What took you so long?"

"Herrell McCray," droned the tiny voice in his ear, "Herrell McCray, Herrell McCray, this is *Jodrell Bank* responding to your message, acknowledge please. Herrell McCray, Herrell McCray . . ."

It kept on, and on.

McCray took a deep breath and thought. Something was wrong. Either they didn't hear him, which meant the radio wasn't transmitting, or — no. That was not it; they *had* heard him, because they were responding. But it seemed to take them so long . . .

Abruptly his face went white. Took them so long! He cast back in his mind, questing for a fact, unable

to face its implications. When was it he called them? Two hours ago? Three?

Did that mean — did it *possibly* mean — that there was a lag of an hour or two each way? Did it, for example, mean that at the speed of his suit's pararadio, millions of times faster than light, it took *hours* to get a message to the ship and back?

And if so . . . where in the name of heaven was he?

Herrell McCray was a navigator, which is to say, a man who has learned to trust the evidence of mathematics and instrument readings beyond the guesses of his "common sense." When *Jodrell Bank,* hurtling faster than light in its voyage between stars. made its regular position check, common sense was a liar. Light bore false witness. The line of sight was trustworthy directly forward and directly after — sometimes not even then — and it took computers, sensing their data through instruments, to comprehend a star bearing and convert three fixes into a position.

If the evidence of his radio contradicted common sense, common sense was wrong. Perhaps it was impossible to believe what the radio's message implied; but it was not necessary to "believe," only to act.

McCray thumbed down the transmitter button and gave a concise report of his situation and his guesses. "I don't know how I got here. I don't know how long I've been gone, since I was unconscious for a time. However, if the transmission lag is a reliable indication —" he swallowed and went on — "I'd estimate I am something more than five hundred light-years away from you at this moment. That's all I have to say, except for one more word: Help."

He grinned sourly and released the button. The message was on its way, and it would be hours before he could have a reply. Therefore he had to consider what to do next.

He mopped his brow. With the droning, repetitious call from the ship finally quiet, the room was quiet again. And warm.

Very warm, he thought tardily; and more than that. The halogen stench was strong in his nostrils again.

Hurriedly McCray scrambled into the suit. By the time he was sealed down he was coughing from the bottom of his lungs, deep, tearing rasps that pained him, uncontrollable. Chlorine or fluorine, one of them was in the air he had been breathing. He could not guess where it had come from; but it was ripping his lungs out.

He flushed the interior of the suit out with a reckless disregard for the wastage of his air reserve, holding his breath as much as he could, daring only shallow gasps that made him retch and gag. After a long time he could breath, though his eyes were spilling tears.

He could see the fumes in the room now. The heat was building up.

Automatically — now that he had put it on and so started its servo-circuits operating — the suit was cooling him. This was a deep-space suit, regulation garb when going outside the pressure hull of an FTL ship. It was good up to at least five hundred degrees in thin air, perhaps three or four hundred in dense. In thin air or in space it was the elastic joints and couplings that de-

polymerized when the heat grew too great; in dense air, with conduction pouring energy in faster than the cooling coils could suck it out and hurl it away, it was the refrigerating equipment that broke down.

McCray had no way of knowing just how hot it was going to get. Nor, for that matter, had the suit been designed to operate in a corrosive medium.

All in all it was time for him to do something.

Among the debris on the floor, he remembered, was a five-foot space-ax, tungsten-steel blade and springy aluminum shaft.

McCray caught it up and headed for the door. It felt good in his gauntlets, a rewarding weight; any weapon straightens the back of the man who holds it, and McCray was grateful for this one. With something concrete to do he could postpone questioning. Never mind why he had been brought here; never mind how. Never mind what he would, or could, do next; all those questions could recede into the background of his mind while he swung the ax and battered his way out of this poisoned oven.

Crash-clang! The double jolt ran up the shaft of the ax, through his gauntlets and into his arm; but he was making progress, he could see the plastic — or whatever it was — of the door. It was chipping out. Not easily, very reluctantly; but flaking out in chips that left a white powdery residue.

At this rate, he thought grimly, he would be an hour getting through it. Did he have an hour?

But it did not take an hour. One blow was luckier than the rest; it must have snapped the lock mechanism. The door shook and slid ajar. McCray got the thin of the blade into the crack and pried it wide.

He was in another room, maybe a hall, large and bare.

McCray put the broad of his back against the broken door and pressed it as nearly closed as he could; it might not keep the gas and heat out, but it would retard them.

The room was again unlighted — at least to McCray's eyes. There was not even that pink pseudo-light that had baffled him; here was nothing but the beam of his suit lamp. What it showed was cryptic. There were evidences of use: shelves, boxy contraptions that might have been cupboards, crude level surfaces attached to the walls that might have been workbenches. Yet they were queerly contrived, for it was not possible to guess from them much about the creatures who used them. Some were near the floor, some at waist height, some even suspended from the ceiling itself. A man would need a ladder to work at these benches and McCray, staring, thought briefly of many-armed blind giants or shapeless huge intelligent amoebae, and felt the skin prickle at the back of his neck.

He tapped half-heartedly at one of the closed cupboards, and was not surprised when it proved as refractory as the door. Undoubtedly he could batter it open, but it was not likely that much would be left of its contents when he was through; and there was the question of time.

But his attention was diverted by a gleam from one of the benches. Metallic parts lay heaped in a pile. He poked at them with a stiff-fingered gauntlet; they were oddly fami-

liar. They were, he thought, very much like the parts of a bullet-gun.

In fact, they were. He could recognized barrel, chamber, trigger, even a couple of cartridges, neatly opened and the grains of powder stacked beside them. It was an older, clumsier model than the kind he had seen in survival locker, on the *Jodrell Bank* — and abruptly wished he were carrying now — but it was a pistol. Another trophy, like the strange assortment in the other room? He could not guess. But the others had been more familiar; they all have come from his own ship. He was prepared to swear that nothing like this antique had been aboard.

The drone began again in his ear, as it had at five-minute intervals all along:

"Herrell McCray, Herrell McCray, Herrell McCray, this is *Jodrell Bank* calling Herrell McCray . . ."

And louder, blaring, then fading to normal volume as the AVC circuits toned the signal down, another voice. A woman's voice, crying out in panic and fear: *"Jodrell Bank!* Where are you? Help!"

IV

Hatcher's second in command said: "He has got through the first survival test. In fact, he broke his way out! What next?"

"Wait!" Hatcher ordered sharply. He was watching the new specimen and a troublesome thought had occurred to him. The new one was female and seemed to be in pain; but it was not the pain that disturbed Hatcher, it was something far more immediate to his interests.

"I think," he said slowly, "that they are in contact."

His assistant vibrated startlement.

"I know," Hatcher said, "but watch. Do you see? He is going straight toward her."

Hatcher, who was not human, did not possess truly human emotions; but he did feel amazement when he was amazed, and fear when there was cause to be afraid. These specimens, obtained with so much difficulty, needed so badly, were his responsibility. He knew the issues involved much better than any of his helpers. They could only be surprised at the queer antics of the aliens with attached limbs and strange powers. Hatcher knew that this was not a freak show, but a matter of life and death. He said, musing:

"This new one, I cannot communicate with her, but I get — almost — a whisper, now and then. The first one, the male, nothing. But this female is perhaps not quite mute."

"Then shall we abandon him and work with her, forgetting the first one?"

Hatcher hesitated. "No," he said at last. "The male is responding well. Remember that when last this experment was done every subject died; he is alive at least. But I am wondering. We can't quite communicate with the female —"

"But?"

"But I'm not sure that others can't."

The woman's voice was at such close range that McCray's suit radio made a useful RDF set. He located her direction easily enough, shielding the tiny built-in antenna with the tungsten-steel blade of the ax, while she begged him to hurry. Her voice was heavily accented, with

some words in a language he did not recognize. She seemed to be in shock.

McCray was hardly surprised at that; he had been close enough to shock himself. He tried to reassure her as he searched for a way out of the hall, but in the middle of a word her voice stopped.

He hesitated, hefting the ax, glancing back at the way he had come. There had to be a way out, even if it meant chopping through a wall.

When he turned around again there was a door. It was oddly shaped and unlike the door he had hewn through, but clearly a door all the same, and it was open.

McCray regarded it grimly. He went back in his memory with meticulous care. Had he not looked at this very spot a matter of moments before? He had. And had there been an open door then? There had not. There hadn't been even a shadowy outline of the three-sided, uneven opening that stood there now.

Still, it led in the proper direction. McCray added one more inexplicable fact to his file and walked through. He was in another hall — or tunnel—rising quite steeply to the right. By his reckoning it was the proper direction. He labored up it, sweating under the weight of the suit, and found another open door, this one round, and behind it —

Yes, there was the woman whose voice he had heard.

It was a woman, all right. The voice had been so strained that he hadn't been positive. Even now, short black hair might not have proved it, and she was lying face down but the waist and hips were a woman's, even though she wore a bulky, quilted suit of coveralls.

He knelt beside her and gently turned her face.

She was unconscious. Broad, dark face, with no make-up; she was apparently in her late thirties. She appeared to be Chinese.

She breathed, a little raggedly but without visible discomfort; her face was relaxed as though she were sleeping. She did not rouse as he moved her.

He realized she was breathing the air of the room they were in.

His instant first thought was that she was in danger of asphyxiation; he started to leap up to get, and put her into, the small, flimsy space suit he saw slumped in a corner. At second thought he realized that she would not be breathing so comfortably if the air were full of the poisonous reek that had driven him out of the first room.

There was an obvious conclusion to be drawn from that; perhaps he could economize on his own air reserve. Tentatively he cracked the seal of his faceplate and took a cautious breath. The faint reek of halogens was still there, but it was not enough even to make his eyes water, and the temperature of the air was merely pleasantly warm.

He shook her, but she did not wake.

He stood up and regarded her thoughtfully. It was a disappointment. Her voice had given him hope of a companion, someone to talk things over with, to compare notes — someone who, if not possessing any more answers than himself, could at least serve as a sounding-board in the give-and-take of discussion that might make some sort of sense out of the queerness that permeated this place.

What he had instead was another burden to carry, for she was unable to care for herself and surely he could not leave her in this condition.

He slipped off the helmet absently and pressed the buttons that turned off the suit's cooling units, looking around the chamber. It was bare except for a litter of irrelevant human articles — much like the one in which he himself had first appeared, except that the articles were not *Jodrell Bank's.* A woven cane screen, some cooking utensils, a machine like a desk calculator, some books — he picked up one of the books and glanced at it. It was printed on coarse paper, and the text was in ideographs, Chinese, perhaps; he did not know Oriental languages.

McCray knew that the *Jodrell Bank* was not the only FTL vessel in this volume of space. The Betelguese run was a busy one, as FTL shipping lanes went: Almost daily departures from some point on Earth to one of the colonies, with equal traffic in the other direction.

Of course, if the time-lag in communication did not lie, he was no longer anywhere within that part of the sky; Betelgeuse was only a few hundred light-years from Sol, and subspace radio covered that distance in something like fifty minutes. But suppose the woman came from another ship; perhaps a Singapore or Tokyo vessel, on the same run. She might easily have been trapped as he was trapped. And if she were awake, he could find out from her what had happened, and thus learn something that might be of use.

Although it was hard to see what might be of use in these most unprecedented and unpleasant circumstances.

The drone from *Jodrell Bank* began again: "Herrell McCray, Herrell McCray, Herrell McCray, this is *Jodrell Bank* responding —"

He turned the volume down but did not dare turn it off. He had lost track of time and couldn't guess when they would respond to his last message. He needed to hear that response when it came. Meanwhile, what about his fellow-captive?

Her suit was only a flimsy workabout model, a airtight as his but without the bracing required for building jet propulsors into it. It contained air reserves enough, and limited water; but neither food nor emergency medical supplies.

McCray had both of these, of course. It was merely one more reason why he could not abandon her and go on . . . if, that is, he could find some reason for going in one direction preferably to another, and if a wall would conveniently open again to let him go there.

He could give her an injection of a stimulant, he mused. Would that improve the situation? Not basically, he decided, with some regret. Sleep was a need, not a luxury; it would not help her to be awakened chemically, when body was demonstrating its need for rest by refusing to wake to a call. Anyway, if she were not seriously injured she would undoubtedly wake of her own accord before long.

He checked pulse and eye-pupils; everything normal, no evidence of bleeding or somatic shock.

So much for that. At least he had made one simple decision on his own, he thought with grim humor. To that extent he had reestablished

his mastery of his own fate, and it made him feel a touch better.

Perhaps he could make some more. What about trying to find a way out of this place. for instance?

It was highly probable that they would not be able to stay here indefinitely, that was the first fact to take into account. Either his imagination was jumpy, or the reek of halogens was a bit stronger. In any case there was no guarantee that this place would remain habitable any longer than the last, and he had to reckon with the knowledge that a spacesuit's air reserve was not infinite. These warrens might prove a death trap.

McCray paused, leaning on the haft of his ax, wondering how much of that was reason and how much panic. He knew that he wanted, more than anything to get out of this place, to see sky and stars, to be where no skulking creatures behind false panels in the walls, or peering through televiewers concealed in the furnishings, could trick and trap him. But did he have any reason to believe that he would be better off somewhere else? Might it not be even that this place was a sort of vivarium maintained for his survival — that the leak of poison gases and heat in the first room was not a deliberate thrust at his safety, but a failure of the shielding that alone could keep him alive?

He didn't know, and in the nature of things could not. But paradoxically the thought that escape might increase his danger made him all the more anxious to escape. He wanted to know. If death was waiting for him outside his chamber, McCray wanted to face it — now — while he was still in good physical shape.

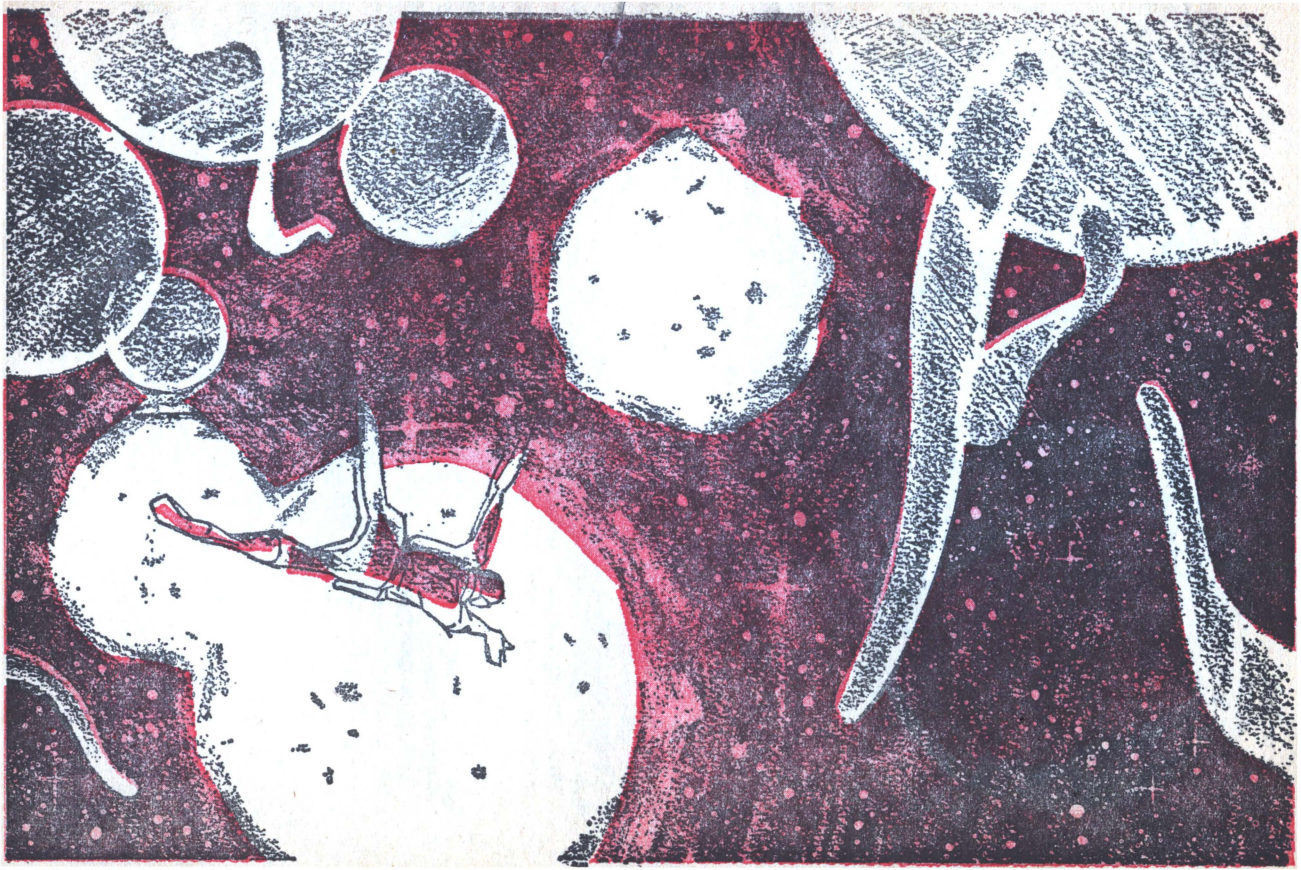
While he was still sane. For there was a limit to how many phenomena he could store away in the back of his mind; sooner or later the contradictions, the puzzles, the fears would have to be faced.

Yet what could he do with the woman? Conceivably he could carry her; but could he also carry her suit? He did not dare take her without it. It would be no kindness to plunge her into another atmosphere of poison, and watch her die because he had taken her from her only hope of safety. Yet the suit weighed at least fifty pounds. His own was slightly more; the girl, say, a hundred and thirty. It added up to more mass than he could handle, at least for more than a few dozen yards.

The speaker in his helmet said suddenly: "Herrell McCray, this is *Jodrell Bank*. Your transmission received. We are vectoring and ranging your signal. Stand by. We will call again in ten minutes." And, in a different tone: "God help you, Mac. What the devil happened to you?"

It was a good question. McCray swore uselessly because he didn't know the answer.

He took wry pleasure in imagining what was going on aboard *Jodrell Bank* at that moment. At least not all the bewilderment was his own. They would be utterly baffled. As far as they were concerned, their navigator had been on the bridge at one moment and the next moment gone, tracelessly. That in itself was a major puzzle; the only way off an FTL ship in flight was in the direction called "suicide." That would have been their assumption, all right, as soon as they realized he was gone



and checked the ship to make sure he was not for some reason wandering about in a cargo hold or unconscious in a closet after some hard-to-imagine attack from another crewman. They would have thought that somehow, crazily, he had got into a suit — there was the suit — and jumped out of a lock. But there would have been no question of going back to look for him. True, they could have tracked his subspace radio if he had used it. But what would have been the good of that? The first question, an all but unanswerable one, would be how long ago he had jumped. Even if they knew that, *Jodrell Bank,* making more than five hundred times light-speed, could not be stopped in fewer than a dozen light-years. They could hardly hope to return to even approximately the location in space where he might have jumped; and there was no hope of reaching a position, stopping, casting about, starting again — the accelerations were too enormous, a man too tiny a dust-mote.

And, of course, he would have been dead in the first place, anyway. The transition from FTL drive to normal space was instantly fatal except within the protecting shield of a ship's engines.

So they would have given him up and, hours later — or days, for he had lost track of time — they would have received his message. What would they make of that?

He didn't know. After all, he hardly knew what he made of it himself.

The woman still slept. The way back was still open. He could tell by sniffing the air that the poisons in the atmosphere were still gaining. Ahead there was nothing but blank walls, and the clutter of useless equipment littering the floor. Stolidly McCray closed his mind and waited.

The signal came at last.

"Mac, we have verified your position." The voice was that of Captain Tillingher, strained and shaking. "I don't know how you got there, but unless the readings lie you're the hell of a long way off. The bearing is identical with Messier object M-42 and the distance —" raggedly —" is compatible. About a thousand light years from us, Mac. One way or another, you've been kidnaped. I— I—"

The voice hesitated, unable to say what it could not accept as fact but could not deny. "I think," it managed at last, "that we've finally come across those super-beings in space that we've wondered about."

Hatcher's detached limbs were quivering with excitement — and with more than excitement, because he was afraid. He was trying to conceal from the others just how afraid he was.

His second in command reported: "We have the second subject out of consciousness. How long do you want us to keep her that way?"

"Until I tell you otherwise! How about the prime subject?"

"We can't tell, Hatcher. But you were right. He is in communication with others, it seems, and by paranormal means." Hatcher noted the dismay in what his assistant said. He understood the dismay well enough. It was one thing to work on a project involving paranormal forces as an exercise in theory. It was something else entirely to see them in operation.

But there was more cause for dismay than that, and Hatcher alone knew just how bad the situation was. He summoned one of his own members to him and impressed on it a progress report for the Council. He sent it floating through the long warrens of his people's world, ordered his assistants back to their work and closed in his thoughts to consider what had happened.

These two creatures, with their command of forces in the paranormal — i.e., the electromagnetic — spectrum, seemed able to survive in the environments prepared for them. That was step one. No previous team had done as well. This was not the first time a probe team of his race had snatched a warmblooded biped from a spaceship for study — because their operation forces, psionic in nature, operated in non-Euclidean ways, it was easiest for them to make contact with the crew of a ship in the non-Euclidean space of FTL drive.

But it was the first time that the specimens had survived. He reviewed the work they had already done with the male specimen. He had shown himself unable to live in the normal atmospheric conditions of Hatcher's world; but that was to be expected, after all, and the creature had been commendably quick about getting out of a bad environment. Probably they had blundered in illuminating the scene for him, Hatcher conceded. He didn't know how badly he had blundered, for the concept of "light" from a general source, illuminating not only what the mind wished to see but irrelevant matter as well, had never occurred to Hatcher or any of his race; all of their senses operated through the mind itself, and what to them was "light" was a sort of focusing of attention. But although something about that episode which Hacher failed to understand had gone wrong, the specimen had not been seriously harmed by it. The specimen was doing well. Probably they could now go to the hardest test of all, the one which would mean success or failure. Probably they could so modify the creature as to make direct communication possible.

And the other specimen?

Hatcher would have frowned, if he had had brow muscles to shape such an expression — or a brow to be shaped. The female specimen was the danger. His own people knew how to shield their thoughts. This one evidently did not. It was astonishing that the Old Ones had not already encountered these bipeds, so loosely guarded was their radiation — when they radiated at all, of course, for only a few of them seemed to possess any psionic power worth mentioning.

Hatcher hastily drove that thought from his mind, for what he proposed to do with the male specimen was to give him that power.

And yet there was no choice for Hatcher's people, because they were faced with disaster. Hatcher, through his communications from the Council, knew how close the disaster was. When one of the probers from the Central Masses team disappeared, the only conclusion that could be drawn was the Old Ones had discovered them. They needed allies; more, they needed allies who had control of the electromagnetic forces that made the Old Ones so potent and so feared.

In the male and female they had

snatched out of space they might have found those allies. But another thought was in Hatcher's mind: Suppose the Old Ones found them too?

Hatcher made up his mind. He could not delay any longer.

"Open the way to the surface," he ordered. "As soon as possible, take both of them to where we can work."

The object Captain Tillinger had called "M-42" was no stranger to Herrell McCray. It was the Great Nebula in Orion, in Earth's telescopes a fuzzy patch of light, in cold fact a great and glowing cloud of gas. M-42 was not an external galaxy, like most of the "nebulae" in Messier's catalogue, but it was nothing so tiny as a single sun either. Its hydrogen mass spanned dozen of light-years. Imbedded in it — growing in it, as they fed on the gas that surrounded them — were scores of hot, bright new suns.

New suns. In all the incongruities that swarmed around him McCray took time to consider that one particular incongruity. The suns of the Orion gas cloud were of the spectral class called "B" — young suns, less than a thousandth as old as a Sol. They simply had not been in existence long enough to own stable planetary systems — much less planets which themselves were old enough to have cooled, brewed chemical complexes and thus in time produced life. But surely he was on a planet . . .

Wasn't he?

McCray breathed a deep sigh and for one more time turned his mind away from unprofitable speculations. The woman stirred slightly. McCray knelt to look at her; then, on quick impulse, opened his medical kit, took out a single-shot capsule of a stimulant and slipped it neatly into the exposed vein of her arm.

In about two minutes she would be awake. Good enough, thought McCray; at least he would have someone to talk to. Now if only they could find a way out of this place. If a door would open, as the other door had, and —

He paused, staring.

There was another door. Open.

He felt himself swaying, threw out an arm and realized that he was . . . falling? Floating? Moving toward the door, somehow, not as though he were being dragged, not as though he were walking, but surely and rather briskly moving along.

His feet were not touching the ground.

It wasn't a volitional matter. His intentions had nothing to do with it. He flailed out, and touched nothing; nor did he slow his motion at all. He fought against it, instinctively; and then reason took over and he stopped.

The woman's form lifted from the floor ahead of him. She was still unconscious. From the clutter on the floor, her lightweight space suit rose, too; suit and girl, they floated ahead of him, toward the door and out.

McCray cried out and tried to run after them. His legs flailed and, of course, touched nothing; but it did seem that he was moving faster. The woman and her suit were disappearing around a bend, but he was right behind them.

He became conscious of the returning reek of gases. He flipped up the plate of his helmet and lunged at the girl, miraculously caught her

in one hand and, straining, caught the suit with the other.

Stuffing her into the suit was hard, awkward work, like dressing a doll that is too large for its garments; but he managed it, closed her helmet, saw the flexible parts of her suit bulge out slightly as its automatic pressure regulators filled it with air.

They drove along, faster and faster, until they came to a great portal, and out into the blinding radiance of a molten copper sky.

Gathered in a circle were a score or more of Hatcher's people.

McCray didn't know they were Hatcher's people, of course. He did not know even that they were animate beings, for they lacked all the features of animals that he had been used to. No eyes. No faces. Their detached members, bobbing about seemingly at random, did not appear to have any relation to the irregular spheres that were their owners.

The woman got unevenly to her feet, her faceplate staring toward the creatures. McCray heard a smothered exclamation in his suitphones.

"Are you all right?" he demanded sharply. The great crystal eye turned round to look at him.

"Oh, the man who spoke to me." Her voice was taut but controlled. The accent was gone; her control was complete. "I am Ann Mei-Ling, of the *Woomara*. What are—those?"

McCray said, "Our kidnappers, I guess. They don't look like much, do they?"

She laughed shakily, without answering. The creatures seemed to be waiting for something, McCray thought; if indeed they were creatures and not machines or—or whatever one might expect to find, in the impossible event of being cast away on an improbable planet of an unexplored sun. He touched the woman's helmet reassuringly and walked toward the aliens, raising his arms.

"Hello," he said. "I am Herrell McCray."

He waited.

He half turned; the woman watching him. "I don't know what to do next," he confessed.

"Sit down," she said suddenly. He stared. "No, you must! They want you to sit down."

"I didn't hear—" he began, then shrugged. He sat down.

"Now lie stretched out and open your face mask."

"Here? Listen—Ann—Miss Mei-Ling, whatever you said your name was! Don't you feel the heat? If I crack my mask—"

"But you must." She spoke very confidently. "It is *s'in fo*—what do you call it—telepathy, I think. But I can hear them. They want you to open your mask. No, it won't kill you. They understand what they are doing."

She hesitated, then said, with less assurance, "They need us, McCray. There is something . . . I am not sure, but something bad. They need help, and think you can give it to them. So open your helmet as they wish, please."

McCray closed his eyes and grimaced; but there was no help for it, he had no better ideas. And anyway, he thought, he could close it again quickly enough if these things had guessed wrong.

The creatures moved purposefully

toward McCray, and he found himself the prisoner of a dozen unattached arms. Surprised, he struggled, but helplessly; no, he would not be able to close the plate again! . . . But the heat was no worse. Somehow they were shielding him.

A tiny member, like one of the unattached arms but much smaller, writhed through the air toward him, hesitated over his eyes and released something tinier still, something so small and so close that McCray could not focus his eyes upon it. It moved deliberately toward his face.

The woman was saying, as if to herself, "The thing they fear is—far away, but—oh, no! My God!"

There was a terrible loud scream, but McCray was not quite sure he heard it. It might have been his own, he thought crazily; for that tiny floating thing had found his face and was burrowing deep inside; and the pain was beyond belief.

The pain was incredible.

It was worse than anything he had ever felt, and it grew . . . and then it was gone.

What it was that the spheroidal aliens had done to his mind McCray had no way of learning. He could only know that a door had been open. An opaque screen was removed. He was free of his body.

He was more than free, he was extended—increased—enlarged. He was inside the body of an alien, and the alien was in him. He was also outside both, looking at them.

McCray had never felt anything like it in his life. It was a situation without even a close analogue. He had had a woman in his arms, he had been part of a family, he had shared the youthful sense of exploration that comes in small, eager groups: These were the comparisons that came to his mind. This was so much more than any of these things. He and the alien—he and, he began to perceive, a number of aliens— were almost inextricably mingled. Yet they were separate, as one strand of colored thread in a ball of yarn is looped and knotted and intertwined with every other strand, although it retains its own integrity. He was in and among many minds, and outside them all.

McCray thought: This is how a god must feel.

* * *

Hatcher would have laughed—if he had lips, larynx or mouth to laugh with. He would have laughed in pure exultation, and, indeed, his second in command recognized the marionette quivering of his detached limbs as a shout of glee. "We've done it," cried the assistant, catching his delight. "We've made the project work!"

"Weve done a great deal more than that," exulted Hatcher. "Go to the supervisors, report to them. Pass on the word to the Central Masses probe. Maintain for the alien the pressure and temperature value he needs—"

"And you, Hatcher?"

"I'm going with him—out in the open! I'm going to show him what *we* need!"

Hatcher. McCray recognized that this was a name—the name of the entity closest to himself, the one that had somehow manipulated his forebrain and released the mind from the prison of the skull. "Hatcher" was not a word but an image,

and in the image he saw a creature whose physical shape was unpleasant, but whose instincts and hopes were enough like his own to provide common ground.

He saw more than that. This Hatcher was trying to persuade him to move. To venture farther. To come with him . . .

McCray allowed himself to be lead and at once he was outside not only of his own body but of all bodies. He was free in space.

The entity that had been born of Herrell McCray was now larger than a sun. He could see, all around him, the wonder and beauty of the great gas cloud in which his body rested, on one tiny planet of one trivial star. His sense of time was not changed from what it had been —he could count the pulses of his own body, still thudding in what, however remote, was his ear—but he could see things that were terribly slow and vast. He could see the motion of the streamers of gas in the cloud as light-pressure drove them outward. He could hear the subtle emanations of ion clashing with hurtling ion. He could see the great blue new suns tunneling through the cloud, building their strength out of the diffuse contaminated hydrogen that made the Orion nebula, leaving relatively clear "holes" behind them. He could see into the gas and through it. He could perceive each star and gassy comet; and he could behold the ordered magnificence of the galaxy of stars, and the universe of galaxies, beyond.

The presence beside him was urging him to look beyond, into a denser, richer region of suns. McCray, unsure of his powers, stretched toward it—and recoiled.

There was something there which was terrifying, something cold and restless that watched him come toward it with the eyes of a crouched panther awaiting a deer.

The presence beside him felt the same terror, McCray knew. He was grateful when Hatcher allowed him to look away from the central clusters and return to the immediate neighborhood of his body.

Like a child's toy in a diminishing glass, McCray could see the planet he had left.

But it was no planet. It was not a planet, but a great irregular sphere of metal, honeycombed and warrened. He would have thought it a ship, though huge, if it had had engines or instruments . . . No. It *was* a ship. Hatcher beside him was proof that these creatures needed neither, not in any Earthly sense, at least. They themselves were engines, with their power to move matter apart from the intervention of other matter. They themselves were instruments, through the sensing of force, that was now within his own power.

A moment's hesitant practice, and McCray had the "planet" in the palm of his hand—not a real palm, not a real hand; but it was there for his inspection. He looked at it and within it and saw the interior nests of Hatcher's folk, found the room where he had been brought, traced his course to the surface, saw his own body in its spacesuit, saw beside it the flaccid suit that had held the strange woman's body . . .

The suit was empty.

The suit was empty, and in the moment of that discovery McCray heard a terrible wailing cry—not in his ears, in his mind—from the

aliens around him. The suit was empty. They discovered it the same moment as he. It was wrong and it was dangerous; they were terrified.

The companion presence beside him receded into emptiness. In a moment McCray was back in his own body, and the gathering members let him free.

VI

Some hundreds of light-years away, the *Jodrell Bank* was making up lost time on its Betelgeuse run.

Herrell McCray swept the long line from Sol to Betelgeuse, with his perceptions that were not his eyes and his touch that was not of matter, until he found it. The giant ship, fastest and hugest of mankind's star vessels, was to him a lumbering tiny beetle.

It held friends and something else—something his body needed—air and water and food. McCray did not know what would happen to him if, while his mind was out in the stars, his body died. But he was not anxious to find out.

McCray had not tried moving his physical body, but with what had been done to his brain he could now do anything within the powers of Hatcher's people. As they had swept him from ship to planet, so he could now hurl his body back from planet to ship. He flexed muscles of his mind that had never been used before, and in a moment his body was slumped on the floor of the *Jodrell Bank's* observation bubble. In another moment he was in his body, opening his eyes and looking out into the astonished face of Chris Stoerer, his junior navigator. "God in heaven," whispered Stoerer, "it's you!"

"It is," said McCray hoarsely, through lips that were parched and cracked, sitting up and trying the muscles of the body. It ached. He was bone-weary. "Give me a hand getting out of this suit, will you?"

It was not easy to be a mind in a body again, McCray discovered. Time had stopped for him. He had been soaring the star-lanes in his released mind for hours; but while his mind had been liberated, his body, back on Hatcher's "planet," had continued its slow metabolism, its steady devouring of its tissues, its inevitable progress toward death. When he had returned to it he found its pulse erratic and its breathing ragged. A grinding knot of hunger seethed in its stomach. Its muscles ached.

Whatever might become of his mind, it was clear that his body would die if it were left unfed and uncared-for much longer. So he had brought it back to the *Jodrell Bank*. He stood up and avoided Chris's questions. "Let me get something to eat, and then get cleaned up a little." (He had discovered that his body stank.) "Then I'll tell you everything you want to know—you and the captain, and anybody else who wants to listen. And we'll have to send a dispatch to Earth, too, because this is important . . . But, please, I only want to tell it once." Because—he did not say—I may not have time to tell it again.

For those cold and murderous presences in the clustered inner suns had reached out as casually as a bear flicking a salmon out of a run and snatched the unknown woman from Hatcher's planet. They could reach anywhere in the galaxy their thoughts roamed.

They might easily follow him here.

It was good to be human again, and McCray howled with pain and joy as the icy needle-spray of the showers cleansed his body. He devoured the enormous plates of steak and potatoes the ship's galley shoved before him, and drank chilled milk and steaming black coffee in alternate pint mugs. McCray let the ship's surgeon look him over, and laughed at the expression in the man's eyes. "I know I'm a little wobbly," he said. "It doesn't matter, Doc. You can put me in the sickbay as long as you like, as soon as I've talked to the captain. I won't mind a bit. You see, I won't be there—" and he laughed louder, and would not explain.

An hour later, with food in his belly and something from the surgeon's hypospray in his bloodstream to clear his brain, he was in the captain's cabin, trying to spell out in words that made sense the incredible story of (he discovered) eight days since he had been abducted from the ship.

Looking at the ship's officers, good friends, companions on a dozen planetside leaves, McCray started to speak, stumbled and was for a moment without words. It was too incredible to tell. How could he make them understand?

They would have to understand. Insane or not, the insane facts had to be explained to them. However queerly they might stare, they were intelligent men. They would resist but ultimately they would see.

He settled his problem by telling them baldly and plainly, without looking at their faces and without waiting for their questions, everything that had happened. He told them about Hatcher and about the room in which he had come to. He told them about the pinkish light that showed only what he concentrated on—and explained it to them, as he had not understood it at first; about Hatcher's people, and how their entire sense-world was built up of what humans called E.S.P., the "light" being only the focusing of thought, which sees no material objects that it is not fixed on. He told them of the woman from the other ship and the cruel, surgical touch on his brain that had opened a universe to him. He promised that that universe would open for them as well. He told them of the deadly, unknowable danger to Hatcher's people—and to themselves—that lay at the galaxy's core. He told them how the woman had disappeared, and told them she was dead—at the hands of the Old Ones from the Central Masses—a blessing to her, McCray explained, and a blessing to all of them; for although her mind would yield some of its secrets even in death, if she were alive it would be their guide, and the Old Ones would be upon them.

He did not wait for them to react.

He turned to the ship's surgeon. "Doc, I'm all yours now, body and soul . . . cancel that. Just body!"

And he left them, to swim once more in space.

In so short a time McCray had come to think of this as life, and a sort of interregnum. He swept up and out, glancing back only to see the ship's surgeon leaping forward to catch his unconscious body as it fell and then he was in space

between the stars once more.

Here, 'twixt Sol and Betelgeuse, space was clear, hard and cold, no diffuse gas cloud, no new, growing suns. He "looked" toward Hatcher's world, but hesitated and considered.

First or last, he would have to look once more upon the inimical presences that had peered out at him from the Central Masses. It might as well be now.

His perceptions alert, he plunged toward the heart of the galaxy.

Thought speeds where light plods. The mind of Herrell McCray covered light-millenia in a moment. It skipped the drifty void between spiral arms, threaded dust clouds, entered the compact central galactic sphere to which our Earth's sector of the galaxy is only a remote and unimportant appendage. Here a great globular cluster of suns massed around a common center of gravity. McCray shrank himself to the perspective of a human body and stared in wonder. Mankind's Sol lies in a tenuous, stretched-out arm, thinly populated by stellar standards: if Earth had circled one of these dense-clustered suns, what a different picture of the sky would have greeted the early shepherds! Where Man's Earthbound eyes are fortunate to count a thousand stars in a winter sky, here were tens of thousands, bright enough to be a Sirius or a Capella at the bottom of a sink of atmosphere like Earth's —tens of billions of stars in all, whirling close to each other, so that star greets star over distances that are hardly more than planetary. Sol's nearest neighbor star is four light-years away. No single sun in this dense, gyrating central mass was as much as one light-year from its fellows.

Here were suns that had been blazing with mature, steady light when Sol was a mere contracting mass of hydrogen—whose planets had cooled and spawned life before Earth's hollows cupped the first scalding droplets that were the beginnings of seas.

On these ancient worlds life existed.

McCray had not understood all of what Hatcher had tried to communicate to him, but he had caught the terror in Hatcher's thoughts. Hatcher's people had fled from these ancients many millenia before—fled and hidden in the heart of the Orion gas cloud, their world and all. Yet even there they were not safe. They knew that in time the Old Ones would find them. And it was this fear that had led them to kidnap humans, seeking allies in the war that could not forever be deferred.

Hatcher's people were creatures of thought. Man was the wielder of physical forces — "paranormal" to Hatcher, as teleportation and mind-seeing were "paranormal" to McCray. The Old Ones had mastered both.

McCray paused at the fringe of the cluster, waiting for the touch of contemptuous hate. It came and he recoiled a thousand light-years before he could stop.

To battle the Old Ones would be no easy match—yet time might work for the human race. Already they controlled the electromagnetic spectrum, and hydrogen fusion could exert the force of suns. With Hatcher's help—and his own—Man would free his mind as well; and perhaps the Old Ones would find themselves

against an opponent as mighty as themselves.

He drew back from the Central Masses, no longer afraid, and swept out to see Hatcher's planet

It was gone.

In the great gas cloud the tunneling blue suns swept up their graze of hydrogen, untroubled by planets. Themselves too young to have solid satellites, Hatcher's adopted world removed again, they were alone.

Gone!

It was for a moment, a panicky thought. McCray realized what they had done. Hatcher's greatest hope had been to find another race to stand between his people and the Old Ones. And they had found it!

Now Hatcher's world could hide again and wait until the battle had been fought for them.

With a face light-years across, with a brain made up of patterns in the ether, McCray grinned wryly.

"Maybe they made the right choice,' he thought, considering. "Maybe they'd only be in the way when the showdown comes." And he sought out *Jodrell Bank* and his body once more, preparing to return to being human . . . and to teach his fellow-humans to be gods.

END

Coming in our next issue —

SALINE SOLUTION

A Retief novelette by Keith Laumer

THE TIME BOMBS

by J. G. Ballard

The pulse-stirring climax of

PODKAYNE OF MARS

by Robert A. Heinlein

— and many more!

THE SHIPSHAPE MIRACLE

BY CLIFFORD D. SIMAK

The castaway was a wanted man — but he didn't know how badly he was wanted!

Illustrated by Jackson

If Cheviot Sherwood ever had believed in miracles, he believed in them no longer. He had no illusions now. He knew exactly what he faced.

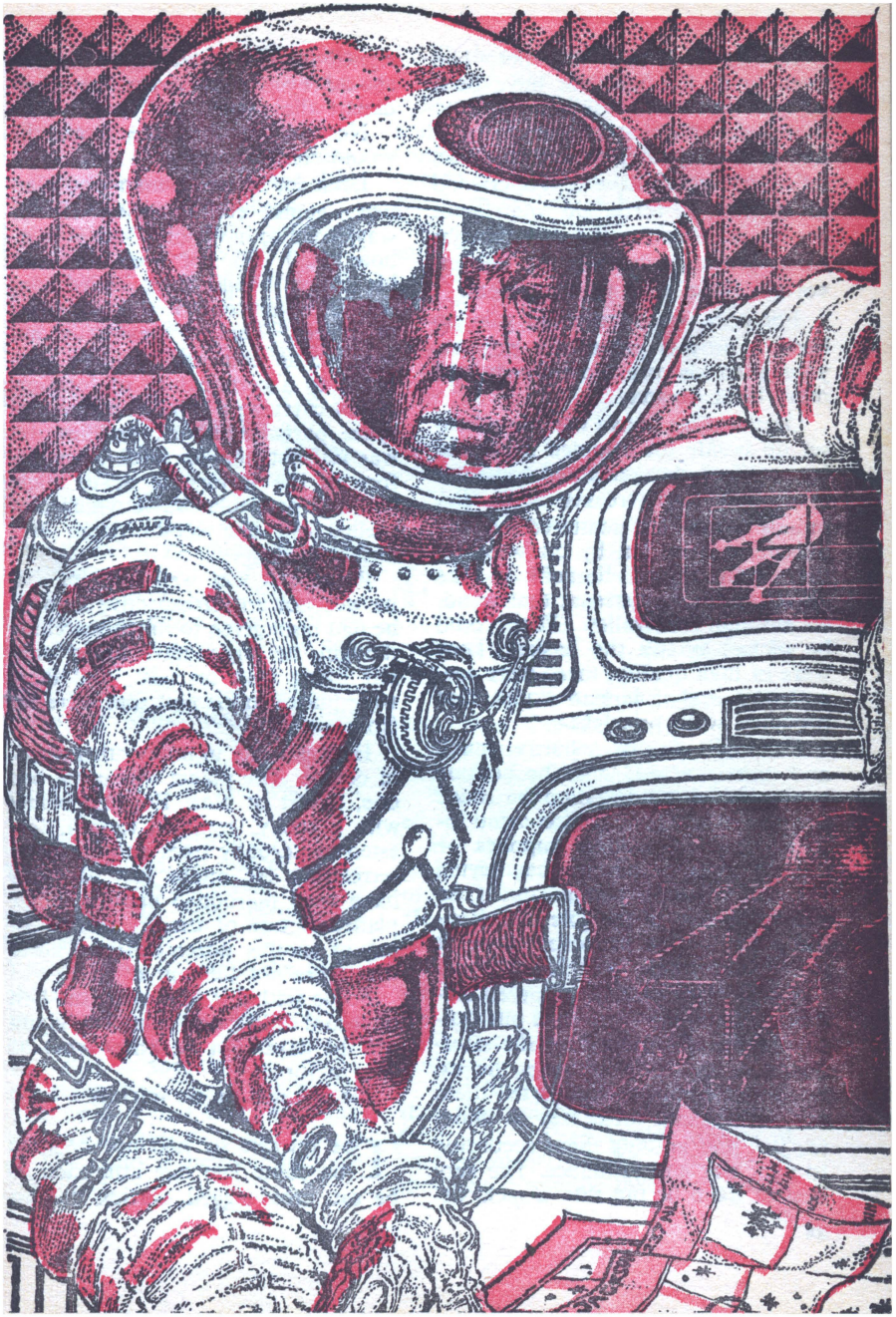
His life would come to an end on this uninhabited backwoods planet and there'd be none to mourn him, none to know. Not, he thought, that there would be any mourners, under any circumstance. Although there were those who would be glad to see him, who would come running if they knew where he might be found.

These were people, very definitely, that Sherwood had no desire to see.

His great, one might say his overwhelming, desire not to see them could account in part for his present situation, since he had taken off from the last planet of record without filing flight plans and lacking clearance.

Since no one knew where he might have headed and since his radio was junk, there was no likelihood at all that anyone would find him — even if they looked, which would be a matter of some doubt. Probably the most that anyone would do would be to send out messages to other planets to place authorities on the alert for him.

And since his spaceship, for the lack of a certain valve for which he had no replacement, was not going anywhere, he was stuck here on this planet.



If that had been all there had been to it, it might not have been so bad. But there was a final irony that under other circumstances (if it had been happening to someone else, let's say), would have kept Sherwood in stitches of forthright merriment for hours on end at the very thought of it. But since he was the one involved, there was no merriment.

For now, when he could gain no benefit, he was potentially rich beyond even his own most greedy and most lurid dreams.

On the ridge above the camp he'd set up beside his crippled spaceship lay a strip of clay-cemented conglomerate that fairly reeked with diamonds. They lay scattered on the hillside, washed out by the weather; they were mixed liberally in the gravel of the tiny stream that wended through the valley. They could be picked up by the basket. They were of high quality; there were several, the size of human skulls, that probably were priceless.

Sherwood was of a hardy, rough and tumble breed. Once he became convinced of his situation he made the best of it. He made his camp into a home and laid in supplies — digging roots, gathering nuts, drying fish and making pemmican. If he was to be cast in the role of a Robinson Crusoe, he proposed to be at least comfortable well fed.

In his spare time he gathered diamonds, dumping them in a pile outside his shack. And in the idle afternoons or the long evenings, he sat beside his campfire and sorted them out — washing them free of clinging dirt and grading them according to their size and brilliance. The very best of them he put into a sack, designed for easy grabbing if the time should ever come when he might depart the planet.

Not that he had any hope this would come about.

Even so, he was a man who planned against contingencies. He always tried to have some sort of loophole. Had this not been the case, his career would have ended long before, at any one of a dozen times or places. That it apparently had come to an end now could be attributed to a certain lack of foresight in not carrying a full complement of spare parts. Although perhaps this was understandable, since never before in the history of space flight had that particular valve which now spelled out Sherwood's doom ever misbehaved.

Perhaps it was well for him that he was not an introspective man. If he had been given to much searching thought, he might have found himself living with his past, and there were places in his past that were far from pretty.

He was lucky in many other ways, of course. The planet was not a bad one, a sort of New England planet with a rocky, tumbled terrain, forested by scrubby trees and distinctly terrestrial. He might just as easily have been marooned upon a jungle planet or one of the icy planets or any of another dozen different kinds that were not tolerant of life.

So he settled in and made the best of it and didn't even bother to count off the days. For he knew what he was in for.

He counted on no miracle.

The miracle he had not counted on came late one afternoon as he sat, cross-legged, sorting out his

latest haul of priceless diamonds.

The great black ship came in from the east across the rolling hills. It whistled down across the ridges and settled to the ground a short distance from Sherwood's crippled ship and his patched-together shack.

It was no patrol vessel, although in his position, Sherwood would have welcomed even one of these. It was a kind of ship he'd never seen before. It was globular and black and it had no identifying marks on it.

He leaped to his feet and ran toward the ship. He waved his arms in welcome and whooped with his delight. He stopped a hundred feet away when he felt the first whiff of the heat that had been picked up by the vessel's hull in its plunge through atmosphere.

"Hey, in there!" he yelled.

And the Ship spoke to him. "You need not yell," it told him. "I can hear you very well."

"Who are you?" asked Sherwood.

"I am the Ship," the voice told him.

"Quit fooling around," yelled Sherwood, "and tell me who you are."

For the sort of answer it had given was foolishness. Of course it was the ship. It was someone in the ship, talking to him through a speaker in the hull.

"I have told you," said the Ship. "I am the Ship."

"But there is someone speaking to me."

"The ship is speaking to you."

"All right, then," said Sherwood. "If you want it that way, it's okay with me. Can you take me out of here? My radio is broken and my ship disabled."

"Perhaps I can," said the Ship. "Tell me who you are."

Sherwood hesitated for a moment, and then he told who he was, quite truthfully. For it suddenly had occurred to him that this ship was as much an outlaw as he was himself. It had no markings and all ships must have markings.

"You say you left your last port without proper clearance?"

"Yes," said Sherwood. "There were certain circumstances."

"And no one knows where you are? No one's looking for you?"

"How could they?" Sherwood asked.

"Where do you want to go?"

"Just anywhere," said Sherwood. "I have no preference."

For even if they should land him somewhere where he had no wish to be, he still would have a running chance. On this planet he had no chance at all.

"All right," said the ship. "You can come aboard."

A hatch came open in the hull and a ladder began running out.

"Just a second," Sherwood shouted. "I'll be right there."

He sprinted to the shack and grabbed his sack of the finest diamonds, then legged it for the ship. He got there almost as soon as the ladder touched the ground.

The hull still was crackling with warmth, but Sherwood swarmed up the ladder, paying no attention.

He was set for life, he thought. Unless —

And then the thought struck him that they might take the diamonds from him. They could pretend it was payment for his passage. Or they could simply take them with-

out an excuse of any sort at all.

But it was too late now. He was almost in the hatch. To drop the sack of diamonds now would do no more than arouse suspicion and would gain him nothing.

It came of greediness, he thought. He did not need this many diamonds. Just a half dozen of the finest dropped into his pockets would have been enough. Enough to buy him another ship so he could return and get a load of them.

But he was committed now. There was nothing he could do except to see it through.

He reached the hatch and tumbled through it. There was no one waiting. The inner lock stood open and there was no one there.

He stopped to stare at the emptiness and behind him the retracting ladder rumbled softly and the hatch hissed to a close.

"Hey," he shouted, "where is everyone?"

"There is no one here," the voice said, "but me."

"All right," said Sherwood. "Where do I go to find you?"

"You have found me," said the Ship. "You are standing in me."

"You mean . . ."

"I told you," said the Ship. "I said I was the Ship. That is what I am."

"But no one . . ."

"You do not understand," said the Ship. "There is no need of anyone. I am myself. I am intelligent. I am part machine, part human. Rather, perhaps, at one time I was. I have thought, in recent years, the two of us have merged so we're neither human nor machine, but something new entirely."

"You're kidding me," said Sherwood, beginning to get frightened. "There can't be such a thing."

"Consider," said the Ship, "a certain human who had worked for years to build me and who, as he finished me, found death was closing in . . ."

"Let me out!" yelled Sherwood. "Let me out of here! I don't want to be rescued. I don't want . . ."

"I'm afraid, Mr. Sherwood, it is rather late for that. We're already out in space."

"Out in space! We can't be! It isn't possible!"

"Of course it is," the Ship told him. "You expected thrust. There was no thrust. We simply lifted."

"No ship," insisted Sherwood, "can get off a planet . . ."

"You're thinking, Mr. Sherwood, of the ships built by human hands. Not of a living ship. Not of an intelligent machine. Not of what becomes possible with the merging of a man and a machine."

"You mean you built yourself?"

"Of course not. Not to start with. I was built by human hands to start with. But I've redesigned myself and rebuilt myself, not once, but many times. I knew my capabilities. I knew my dreams and wishes. I made myself the kind of thing I was capable of being — not the halfway, makeshift thing that was the best the human race could do."

"The man you spoke of," Sherwood said. "The one who was about to die . . ."

"He is part of me," said the Ship. "If you must think of him as a separate entity, he, then, is talking to you. For when I say 'I', I mean both of us, for we've become as one."

"I don't get it," Sherwood told

the Ship, feeling the panic coming back again.

"He built me, long ago, as a ship which would respond, not to the pushing of a lever or the pressing of a button, but to the mental commands of the man who drove me. I was to become, in effect, an extension of that man. There was a helmet that the man would wear and he'd think into the helmet."

"I understand," said Sherwood.

"He'd think into the helmet and I was so programmed that I'd obey his thoughts. I became, in effect, a man, and the man became in effect the ship he operated."

"Nice deal," Sherwood said enthusiastically, never being one upon whom the niceties of certain advantages were ever lost.

"He finished me and he was about to die and it was a pity that such a one should die — one who had worked so hard to do what he had done. Who'd given up so much. Who never had seen space. Who had gone nowhere."

"No," said Sherwood, in revulsion, knowing what was coming. "No, he'd not done that."

"It was a kindness," said the ship. "It was what he wanted. He managed it himself. He simply gave up his body. His body was a worthless hulk that was about to die. The modifications to accommodate a human brain rather than a human skull were quite elementary. And he has been happy. We have both of us been happy."

Sherwood stood without saying anything. In the silence he was listening for some sound, for any kind of tiny rattle or hum, for anything at all to tell him the ship was operating. But there was no sound and no sense of motion of any sort.

"Happy," he said. "Where would you have found happiness? What's the point of all this?"

"That," the Ship said solemnly, "is a bit hard to explain."

Sherwood stood and thought about it — the endless voyaging through space without a body — with all the desires, all the advantages, all the capabilities of a body gone forever.

"There is nothing for you to fear," said the Ship. "You need not concern yourself. We have a cabin for you. Just down the corridor, the first door to your left."

"I thank you," Sherwood said, although he was nervous still.

If he had had a choice, he told himself, he'd stayed back on the planet. But since he was here, he'd have to make the best of it. And there were, he admitted to himself, certain advantages and certain possibilities that needed further thought.

He went down the corridor and pushed on the door. It opened on the cabin. For a spaceship it looked comfortable enough. A little cramped, of course, but then all cabins were. Space is at a premium on any sort of ship.

He went in and placed his sack of diamonds on the bunk that hinged out from the wall. He sat down in the single metal chair that stood beside the bunk.

"Are you comfortable, Mr. Sherwood?"

"Very comfortable," he said.

It was going to be all right, he told himself. A very crazy setup, but it would be all right. Perhaps a little spooky and a bit hard to believe, but probably better, after all,

than staying marooned, back there on the planet. For this would not last forever. And the planet could have been, most probably would have been, forever.

It would take a while to reach another planet, for space was rather sparsely populated in this area. There would be time to think and plan. He might be able to work out something that would be to his great advantage.

He leaned back in the chair and stretched out his legs. His brain began to click in a ceaseless scurrying back and forth, nosing from every angle all the possibilities that existed in this setup.

It was nice, he thought — this entire operation. The Ship undoubtedly had figured out some angles for itself which no human yet had thought of.

There were a lot of things to do. He'd have to learn the capabilities of the Ship and give close study to its personality, seeking out its weak points and its strength. Then he'd have to plan his strategy and be careful not to give away his thinking. He must not move until he was entirely ready.

There might be many ways to do it. There might be flattery or there might be a business proposition or there might be blackmail. He'd have to think on it and study and follow out the line of action that seemed to be the best.

He wondered at the Ship's means of operation. Anti-gravity, perhaps, so far considered as a source of power.

He got up from the chair and paced, three paces across the room Or a fusion chamber. Or perhaps some method which had not been and back, restlessly pondering odds.

Yes, he thought, it would be a nice kind of ship to have. More than likely there was nothing in all of space that could touch it in speed and maneuverability. Nothing that could overhaul it should he ever have to run. It could apparently set down anywhere. It probably self-repairing, for the Ship had spoken of redesigning and of rebuilding itself. With the memory of his recent situation still fresh inside his mind, this was comforting.

There must be a way to get the Ship, he told himself. There had to be a way to get it. It was something that he needed.

He could buy another ship, of course; with the diamonds in the sacking he could buy a fleet of ships. But this was the one he wanted.

Maybe it had been pure luck this Ship had picked him up. For any other legal ship would probably turn him over to the authorities at its next port of call, but this Ship didn't seem to mind who he was or what his record might be. Any other ship that was not entirely legal would have grabbed off, not only the diamonds that he had but his discovery of the diamond field. But this particular Ship had no concern with diamonds.

What a setup, he thought. A human brain and a spaceship tied together, so closely tied together that their identities had merged. He shivered at the thought of it, for it was a gruesome thing.

Although perhaps it had not meant too much to that old man who was about to die. He had traded an aged and death-marked body for many

years of life. Perhaps life as a part of a space-traveling machine was better than no life at all.

How many years, he wondered, had it been since that old man had translated himself into something else than human? A hundred? Five hundred? Perhaps even more than that.

In those years where had he been and what might he have seen? And, most pertinent of all, what thoughts had run through and congealed and formed within his mind? What was life like for him? Not a human sort of life, of course, not a human viewpoint, but something else entirely.

Sherwood tried to imagine what it might be like, but gave up in dismay. It would necessarily be a negation of everything he lived for — all the sensual pleasure, all the dreams of gain and glory, all the neat behavior patterns he had set up for himself, all his self-made rules of conduct and of conscience.

A miracle, he thought. As a matter of fact, there'd been two miracles. The first had been when he had been able to set his ship down without a crackup when the valve had failed. He had come in close above the planet's surface to find a place to land — and suddenly the valve went out and the engine failed and there he'd been, plunging down above the rough terrain. Then suddenly he had glimpsed a place where a landing might be just barely possible and had fought the controls madly to hit that certain spot and finally had hit it — alive.

It had been a miracle that he had made the landing; and the coming of the Ship to rescue him had been the second miracle.

The bunk dropped down flat against the wall and his sack of diamonds was dumped onto the floor.

"Hey, what goes on?" yelled Sherwood. Then he wished he had not yelled, for it was quite clear exactly what had happened. The support that held the bunk had not been snapped properly into place and had given way, letting down the bunk.

"Something wrong, Mr. Sherwood?" asked the Ship.

"No, not a thing," said Sherwood. "My bunk fell down. I guess it startled me."

He bent down to pick up the diamonds. As he did, the chair quietly and efficiently slid back against the wall, folded itself up and slid into a slight depression that exactly fitted it.

Squatted to pick up the diamonds, Sherwood watched the chair in horrified fascination, then swiftly spun around. The bunk no longer hung against the wall, also had fitted itself into another niche.

Cold fear speared into Sherwood. He rose swiftly to his feet, turning like a man at bay. He stood in a bare cubicle. With both the bunk and chair retracted, he stood within four bare walls.

He sprang toward the door and there wasn't any door. There was only wall.

He staggered back into the center of the cubicle and spun around to view each wall in turn. There was no door in any of the walls. The metal went up from floor to ceiling without a single break.

The walls began to move, closing in on him, sliding in, retracting.

He watched, incredulous, frozen, thinking that perhaps he'd imagined the moving of the walls.

But it was not imagination. Slowly, inexorably, the walls were closing in. Had he put out his arms, he could have touched them on either side of him.

"Ship!" he said, fighting to keep his voice calm.

"Yes, Mr. Sherwood."

"You are malfunctioning. The walls are closing in."

"No," said the Ship. "No malfunction, I assure you. A very proper function. My brain grows tired and feeble. It is not the body only—the brain also has its limits. I suspected that it might, but I could not know. There was a chance, of course, that separated from the poison of a body, it might live in its bath of nutrients forever."

"No!" rasped Sherwood, his breath strangling in his throat. "No, not me!"

"Who else?" asked the Ship. "I have searched for years and you are the first who fitted."

"Fitted!" Sherwood screamed.

"Why, of course," the Ship said calmly, happily. "A man who would not be missed. No one knowing where you were. No one hunting for you. No one who will miss you. I had hunted for someone like you and had despaired of finding one. For I am humane. I would cause no one grief or sadness."

The walls kept closing in.

The Ship seemed to sigh in metallic contentment.

"Believe me, Mr. Sherwood," it said, "finding you was a very miracle." END

THIS WAY TO THE EGRESS

BY ANDREW FETLER

He heard children's voices, but there couldn't be any children — not in that terrible place!

"In the middle of the night," the man said to the landlady over a soft-boiled egg and a slice of toast. "Right under my window." He leaned forward. "You know how children talk to themselves?"

"Was it the same voice you heard the first two nights?" Mrs. Tilton asked.

"I'm not sure now about the first night. Might have been another voice that first night."

"And now it was a child?"

"Yes."

Mrs. Tilton rose to get the coffee. "Are you quite sure?"

"You don't think I'm imagining?"

"We have no children," she said.

"A neighbor's, no doubt."

"There isn't a child in the whole village, Mr. Coat."

"That's what puzzles me. Don't you think we ought to report it?"

"I'll get your coffee," she said, and went into the kitchen.

"I didn't actually *see* the child," he called to her. "But I'm sure I heard the voice."

The woman brought the cup of coffee; she had poured it in the kitchen. The first two mornings, he remembered, she had set the coffee pot on the table.

"Aren't you having any?" he asked.

"I had mine, thank you. Will you want anything else?"

He could see past her into the kitchen — the corner of a large wood-burning stove and a row of brass pots. The floor was flagstoned and a hand pump stood over a sink.

"Do you really grow your own strawberries?" he asked.

"Yes. Would you like some?"

"Very much."

Mrs. Tilton went to get the berries. She had forgotten to serve cream with the coffee. The coffee had a bitter taste and a faint smell

of iodine. But he was not used to natural coffee. And without cream. He took another sip and slowly stretched his stiff legs. In the window he saw lilac bushes in bloom.

"Picked this morning," Mrs. Tilton said, setting a bowl of strawberries before him.

"Oh, thank you." He sniffed at the berries. "They smell of earth," he said, smiling at her.

"You might like a walk after breakfast," Mrs. Tilton suggested. "Then you can have a restful nap at noon."

"Good idea," he said. "Excuse me, but the coffee seems bitter."

Mrs. Tilton looked at the old man as if she did not understand.

"I'm afraid I'm a nuisance," he apologized, "but I take cream with my coffee."

"I'm sorry, I forgot."

She brought a small cream pitcher.

The old man turned the pitcher in his hand. It was lopsided and made of inferior clay. "Do you make your own pottery, too?"

"Such as it is."

"Charming." He set down the pitcher and leaned back with a sigh. "You know, I pretended I did not want a rest, but I could hardly wait to see the country again."

"You weren't born in the city?"

"I was born in a village no larger than this. Of course it's all gone now, swallowed up by the city. But in those days it was an hour's heliride from the city. I remember a thing or two."

Mrs. Tilton watched him drink the coffee.

"Not many people left who remember those days," he said. "For instance, did you know that unadjustables — they called them criminals then—were actually electrocuted? Strapped down to a horrible chair—"

"Don't you want the strawberries, Mr. Coat?"

He looked down at the strawberries in the bowl. "Just imagine —" but he forgot what he had wanted to say.

The woman went into the kitchen.

He had just finished drinking the coffee when he heard the child's voice in the lane outside the window. The same voice. He crossed to the window and looked out. The lane was empty.

"Mrs. Tilton!"

He heard no answer.

He went into the kitchen. The door to the garden stood open. He saw her working in a vegetable patch.

"Pst . . . pst!"

She looked up.

"Did you see the child?" he called. "It must have turned into the garden."

Mrs. Tilton straightened herself, holding her back with both hands. "The child?"

"The voice. I just heard it again."

"I'll be with you in a moment, Mr. Coat."

He looked round the kitchen — the antique flagstones, the brass pots, the stove, the hand pump. There was only one anachronism: on the wall by the door, stuck behind a cluster of radishes, was a World Union Telegram.

Out in the vegetable patch, he saw Mrs. Tilton was looking about for something.

On an impulse he took down the telegram, and read:

RECOAT IF VOICES PERSIST TO THIRD MORNING PROCEED EUTHANASIA SUGGEST USING COFFEE FORMULA TWO ADVISE OFFICE OF CHIEF PSYCH WMA

He stuck the telegram behind the radishes and looked out the door. Mrs. Tilton was coming with a basket on her arm.

"You heard the child again, Mr. Coat?"

"Perhaps . . . I was mistaken."

"Strange, I saw nobody." She put the basket on the kitchen table; it was filled with peas. "Did you have enough coffee?"

He nodded.

"Aren't you feeling well?"

"I . . . am fine. Yes."

The executioner looked as if she could not make up her mind about him. Then she smiled. She brought out a wooden bowl, and sat down at the table to shell the peas.

"Why don't you take your walk now? You'll enjoy our little market place."

"Yes." Such a nice day, he thought, shuffling to the window. Spring.

He had enjoyed the market yesterday until he had noticed that there were no children about. No children at all. Only adult primitives and a few well-trained functionaries like Mrs. Tilton.

In the sky in the window he saw a rocket cutting a thin line as it left the atmosphere.

"I'll have your bed ready for your noon nap," she said.

He turned from the window. "Noon?"

"You'll want a nice restful nap then."

He had imagined the poisoned coffee would work faster. His heart beating, he said, "Those are peas, aren't they?"

She nodded. Her hands were busy shelling. "I hung your cane on the coat rack," she said.

"If you don't mind, Mrs. Tilton, I'd rather not go out today. I'd very much like to try shelling peas for you."

"Why, of course. Pull up that chair, why don't you?"

Sitting down, he reached his trembling hands into the basket and came up with a handful of the green wonders. Mrs. Tilton moved the basket nearer him.

"After a while I'll go up to my room," he promised. "I feel a little tired already."

"Certainly."

He split a shell and slid his thumb under the peas. They rolled into his hand. He counted nine. He dropped them in the bowl, then put one in his mouth and chewed. It had a sweet taste.

"Thank you, Mrs. Tilton."

"Not at all, Mr. Coat."

END

☆ ☆ ☆ ☆ ☆

ESSAY IN COHERENCE

BY THEODORE STURGEON

If you read the above title fast you'll get the same impression as you will if you read this article fast. So take your time—or set it aside until you have the time.

We have blithely set ourselves the task of fumbling through the liver—and lights—of the *laser*, hoping to bring you a simple explanation of one of those scientific breakthroughs that ought to make you glad, and a little awed, to share history with. But like sex and solid-state functions, laser theory seems to drift from time to time into philosophy or fiction. Yet the device is so simple, so fascinating and so extremely potent that it will pay to know a little, at least, about it when it's talked about. And, brother, it will be talked about a whole lot.

To begin with, Junior, laser is not the comparative form of *lazy*. It is the acronym for *L*ight *A*mplification by *S*timulated *E*mission of *R*adiation. The recipe for a laser is:

Take a cylindrical ruby rod. Mix in a pinch (about 1/20th of 1%) of chromium atoms, making sure that that's absolutely all the impurity there is. Grind both ends of the cylinder optically flat. Silver one end thoroughly. Silver the other end not thoroughly. Next take an optical flash tube, stretch it out, bend it into a spiral and insert the ruby rod into the coil so formed. Now activate the flash tube at the correct frequency. Coherent light emerges from the half-silvered end of the ruby. And there's your laser.

If that doesn't suit your palate, try other solids, such as the so-called transition metals (elements with an incomplete inner shell of electrons), or the "rare-earth" elements (called lanthanides), or the actinides (elements 89 through 103). But if your taste is a little more sophisticated, you can run up something tasty in liquids and even gases.

Now, what is coherent light? And why bother? Also, as the ribald Indian said to the mermaid: How?

Coherent light is electromagnetic radiation within the optical spect-

rum, emerging from its source at a single frequency and in a sinusoidal wave-pattern, like radio waves. Most light is non-coherent, or a jumble of many frequencies. If you've ever seen these separated and put down in order by a spectroscope, you know how very many there are. The light produced by laser is in terms of color absolutely pure. It forms a beam with so little dispersion that a beam one tenth of a mil wide at the source would lay a disc of light only 20 miles wide on the moon. Yet even that, in terms of this new science, is strictly model T.

Why bother? First of all, the device produces light of truly fabulous intensity. As every schoolboy knows as soon as you tell him, sunlight produces about one-tenth of a watt per square centimeter. A laser can give you 10 *billion* watts on the same square centimeter and not breathe hard. It is, in other words, a source of high temperatures, almost perfectly directional, easily controlled and (as such things go) inexpensive. Just a moment's reflection (especially for you, or you wouldn't be reading it here) will generate more wild and wonderful applications than most pro authors would dare to perpetrate. In research and industry, how many uses can be found for a needle-beam of heat that can weld a precision joint, puncture a diamond, maintain a microcrucible at high temperatures to study chemistry in an area it has hardly been examined in before? Instantly on, exactly directional.

Or—think a little bigger, and put Buck Rogers' zap-gun back in the funny papers where it belongs. For here is the death ray, the recoilless "searing beam of raw naked energy" we used to read about in our fuzz-edged pulp-blurred space opera. Here—really here—is a way to knock a hole as big as your head in a tank at 2000 yards—a weapon that ignores windage because it's a beam, not a missile-chucker, and for the same reason need not be aimed with any consideration for trajectory. You don't compute and adjust sights. You just shoot it, like a flashlight.

And this is only the beginning. Practical thermonuclear energy awaits temperatures high enough, controllable enough. Well?

And one other whole new area: communications—which covers a great deal more than speech, pictures, facsimile; it means also remote control in all its countless permutations. For with a laser beam we have, as reported above, electromagnetic radiation of a single frequency which varies in a regular sinusoidal pattern—like a radio carrier frequency. There is no theoretical reason why a signal should not be impressed upon such a carrier, by modifying its amplitude (AM) after it's generated. This means, at first glance, two things: communications on such a tight beam that eavesdropping is virtually impossible; and communications over a beam with so little dispersal that it can be thrown hundreds of thousands, even millions of miles, to reach ships and stations in space. And with this we'll

leave the eight billion and two other applications to your imagination, and go on to how this simple-minded gadget makes this all happen.

To understand it you'll have to make yet another change in your concept of the atom, which, you'll recall, appears as a billard ball glued to a stick in chemical models of molecules: or as a sort of solar system, electrons around a nucleus, when they're talking nuclear physics. There's nothing wrong with these concepts as long as they work, and they have worked well.

According to the theory which fits the facts for laser, electrons can travel in orbits far removed from the nucleus, or closer in. When an electron falls from a high energy state (the far-out orbit) to a lower state it gives off the energy difference in the form of light. Conversely, when it leaves a lower orbit for a higher (i.e., goes from a lower-energy state to a higher-energy state) it absorbs light.

The brilliant Max Planck reduced the calculation of energy difference between levels to a simple formula ($E=hv$, in case you wondered, where E is the quantum of energy, v the frequency of radiation, and h is that constant of proportionality known as Planck's Constant.) The only reason for bringing this up is that frequency, the only variable in the equation, is what dictates whether or not electrons can be shifted from one level to another. Therefore the frequency of the pulses in the helical flash tube must be exact and precise in terms of the particular atoms of which the laser is made.

Now let's make another model, not of atoms specifically, but of this laser theory in action. We'll borrow from the local dog kennels a ladder, and set it up against the living room wall. Now if you'll look closely you'll see that the bottom rung of the ladder is populated by fleas. We'll call them atoms at Energy Level One, or E-1. Now if you can persuade these fleas to jump to the second rung, E-2—say by flashing pictures of a fat chihuahua (at the right frequency, of course)—they will absorb light energy as they go up. They won't stay on E-2 very long, and when they drop back, they'll release energy. Now if you can pump the succulent image efficiently enough, you'll get a population inversion. There will be more fleas on E-2 than on E-1. This would give you a gain in emitted energy as they dropped back again.

In practice, it has been found that the E-2-to-ground pumping requires more energy in the pump than you can get out of the emission. However, with the right frequency, at the right intensity, the population can get so excited that it will jump clear to E-3 and then drop back to E-2. At this level you start to show a profit, but good. So with a new slide, say a particularly fat old collie substituting for the chihuahua, you very readily get population inversion between E-2 and E-3, and you have a bunch of wildly excited fleas as well, which is the excitement mentioned in the s e—stimulated

emission—of laser. The profit is the a, or amplification.

Now return the ladder to the kennels. Keep the fleas or let them go; it's up to you. And let's take up the ruby laser again.

You recall that in the pure ruby shaft, a few chromium atoms exist as an impurity. When light at the right frequency is pumped in by the spiral coil, these chromium atoms are driven to higher energy levels, from which they spontaneously fall back, emitting radiation which in turn excites more chromium atoms. This goes on while more and more light goes bashing around inside the rod. Both ends are mirrors, and the sides permit little of it to escape, so the only way out for the light is for that portion of it which bounces off the fully silvered end and is projected at the partly silvered end, where it emerges. Now you can see why the beam is so little dispersed, so perfectly aligned. As to why it is so pure—it has to be, having been generated from the same energy level of the same electron-activity. That is, at the same frequency. The flash-tube that started all this was non-coherent—that is, its light was the usual mess of frequencies emitted by most of our familiar light-sources. The laser beam is coherent. We hope we are by now, and you too.

Experiments are rapidly going forward in both liquid and gaseous lasers. If anyone has succeeded with the former, we haven't heard about it yet. As to the later, it was a helium-neon laser which yielded the 10 billion watt/cm^2 mentioned above. He was excited by radio-frequency energy and transferred its excitement to the neon. Pumping is considerably easier than for solid lasers. Any questions? END

PODKAYNE OF MARS

BY ROBERT A. HEINLEIN

SECOND OF THREE PARTS

Illustrated by Finlay

A radiation storm between planets is no joke — but it's nothing compared to the storm that hovers constantly over the head of my brother, Clark!

SYNOPSIS

My name is Podkayne Fries—rhymes with "breeze"—and don't call me Martian. I am a Marswoman; and they are something else entirely. (Not that you will ever hear me saying anything against the Old Ones—after all I'm named after one of them.) My brother Clark and I, handsomely escorted by our Uncle Tom, are on our way to Venus. Since I am going to be a ship's captain when I grow up (don't laugh; on Mars we don't have these silly notions about where woman's place is), you might say that this is the crowning experience of my life—so far, anyway—and you would be right. Except for a few old biddies who think Marsmen are savages, everybody is wonderful and the trip itself is positively heaven. As for the old biddies. I can fix them. I already have fixed them—I told Clark about them, and that's enough. I don't know what he'll do—but I know they'll wish he hadn't . . . because although he's my brother and I love him, I guess Clark is also a powerful little imp. You've heard of Earth's Mafia? The way we look at it, the Mafia have heard of Clark—that's why they stayed on Earth.

VII

Mr. Savvonavong told me that we are likely to have a radiation storm almost any time now and that we'll have an emergency drill today to practice for it. The solar weather station on Mercury reports that "flare" weather is shaping up and has warned all ships in space and all manned satellites to be ready for it. The flares are expected to continue for about —

Wups! The emergency alarm caught me in the middle of a sentence. We've had our drill and I think the captain has all the passengers properly scared now. Some ignored the alarm, or tried to, whereupon crewmen in heavy armor fetched them. Clark got fetched. He was the very last they tracked down . . . and Captain Darling gave him a public scolding that was a work of art, and finished by warning Clark that if he failed to be the first passenger to reach shelter the next time the alarm sounded, Clark could expect to spend the rest of the trip *in* the shelter, twenty-four hours of the day, instead of having free run of passenger country.

Clark took it with his usual wooden face, but I think it hit home, especially the threat to confine him. I'm sure the speech impressed the other passengers. It was the sort that raises blisters at twenty paces. Perhaps the captain intended it mostly for their benefit.

Then the captain changed his tone to that of a patient teacher and explained in simple words what we could expect, why it was necessary to reach shelter *at once* even if one were taking a bath, why we would be perfectly safe if we did.

The solar flares trigger radiation, he told us, quite ordinary radiation, much like X-rays ("and other sorts," I mentally added), the sort of radiation which is found in space at all times. But the intensity reaches levels from a thousand to ten thousand times as high as "normal" space radiation — And, since we are already inside the orbit of Earth, this is bad medicine indeed; it would kill an unprotected man about as quickly as shooting him through the head.

Then he explained why we would not require a thousand to ten thousand times as much shielding in order to be safe. It's the cascade principle. The outer hull stops over 90 per cent of any radiation; then comes the "cofferdam" (cargo holds and water tanks) which absorbs some more; then comes the inner hull which is actually the floor of the the cylinder which is first-class passenger country.

This much shielding is plenty for all normal conditions. The radiation level in our staterooms is lower than it is at home, quite a lot lower than it is most places on Earth, especially in the mountains. (I'm looking forward to seeing real mountains. Scary!)

Then one day comes a really *bad* storm on the Sun and the radiation level jumps suddenly to 10,000 times normal — and you could get a killing dose right in your own bed and wake up dying.

No trouble. The emergency shelter is at the center of the ship, four shells farther in, each of which stops more than 90 per cent of what hits it. Like this:

10,000
1,000 (after the first inner shell, the floor or first-class passenger country.)
100 (after the second inner shell)
10 (third)
1 (fourth — and you're inside the shelter)

But actually the shielding is better than that and it is safer to be in the ship's shelter during a bad solar storm than it is to be in Marsopolis.

The only trouble — and no small matter — is that the shelter space is the geometrical care of he ship, just abaft the control room and not a whole lot bigger. Passengers and crew are stacked into it about as intimately as puppies in a basket. My billet is a shelf space half a meter wide, half a meter deep and just a trifle longer than I am, with other females brushing my elbows on each side of me. I am not a claustrophobe, but a coffin would be roomier.

Rations are canned ones, kept there against emergencies; sanitary facilities can only be described as "dreadful." I hope this storm is only a solar squall and is followed by good weather on the Sun. To finish the trip to Venus in the shelter would turn a wonderful experience into a nightmare.

The captain finished by saying, "We will probably have five to ten minutes warning from Hermes Station. But don't take five minutes getting here. The instant the alarm sounds *head for the shelter at once* as fast as possible. If you are not dressed, be sure you have clothes ready to grab — and dress when you get here. If you stop to worry about *anything,* it may kill you.

"Crewmen will search all passenger spaces the moment the alarm sounds, and each one is *ordered* to use force to send to shelter any passenger who fails to move fast. He won't argue with you. He'll hit you, kick you, drag you — and I'll back him up.

"One last word. Some of you have not been wearing your personal radiation meters. The law permits me to levy a stiff fine for such failure. Ordinarily I overlook such technical offenses — it's your health, not mine. But, during this emergency, this regulation will be enforced. Fresh personal meters are now being passed out to each of you; old ones will be turned over to the surgeon, examined and exposures entered in your records."

He gave the "all clear" order then and we all went back down to passenger country, sweaty and mussed. At least I was. I was just washing my face when the alarm sounded *again* — and I swarmed up those four decks like a frightened cat.

But I was only a close second. Clark passed me on the way.

It was just another dill. This time all passengers were in the shelter within four minutes.

The captain didn't say anything but looked pleased.

I've been sleeping raw but I'm going to wear pajamas tonight and all nights until this is over, and leave a robe where I can grab it. Captain Darling is a darling but I think he means exactly what he says — and I won't play Lady Godiva. There isn't a horse in the whole ship.

Neither Mrs. Royer nor Mrs. Garcia were at dinner this evening, although they were both amazingly agile both times the alarm sounded. They weren't in the lounge after dinner; their doors are closed, and I saw the surgeon coming out of Mrs. Garcia's room.

I wonder. Surely Clark wouldn't poison them?

Or would he? I don't dare ask him because of the remote possibility that he might tell me.

I don't want to ask the surgeon, either, because it might attract attention to the Fries family. But I surely would like to have ESP sight (if there truly is such a thing) long enough to find out what is behind those two closed doors.

I hope Clark hasn't let his talents run away with him. Oh, I'm as angry at those two as ever . . . because there is just enough truth in the nasty things they said to make it hurt. I *am* of mixed races and I know that some people think that is bad, even though there is no bias against it on Mars. I *do* have "convicts" among my ancestors — but I've never been ashamed of it. Or not much, although I suppose I'm inclined to dwell more on the highly selected ones. But a "convict" is not always a criminal. Admittedly there was that period in the early history of Mars when the commissars were running things on Earth and Mars was used as a penal colony; everybody knows that and we don't try to hide it.

But the vast majority of the transportees were political prisoners — "counter-revolutionists" — enemies of the people. Is this bad?

In any case there was the much longer period, involving fifty times as many colonists, when every new Marsman was selected as carefully as a bride selects her wedding gown — and much more scientifically. And finally, there is the current period, since our Revolution and Independence, when we dropped all bars to immigration and welcome anyone who is healthy and has normal intelligence.

No, I'm not ashamed of my ancestors or my people, whatever their skin shades or backgrounds; I'm proud of them. It makes me boiling mad to hear anyone sneer at them. Why, I'll bet those two couldn't qualify for permanent visa even under our present "open door" policy! Feeble-minded —

But I do hope Clark hasn't done anything too drastic. I wouldn't want Clark to have to spend the rest of his life on Titan; I love the little writch. Sort of.

VIII

We've had the radiation storm. I prefer hives.

I don't mean the storm itself; it

wasn't too bad. Radiation jumped to about 1500 times normal for where we are now — about eight-tenths of an astronomical unit from the Sun, say 120,000,000 kilometers in units you can get your teeth in. Mr. Savvonavong says that we would have been all right if the first-class passengers had simply gone up one deck to second-class passenger country . . . which certainly would have been more comfortable than stuffing all the passengers and crew into that maximum-safety mausoleum at the center of the ship. Second-class accommodations are cramped and cheerless, and as for third class I would rather be shipped as freight. But either one would be a picnic compared with spending eighteen hours in the radiation shelter.

For the first time I envied the half dozen aliens aboard. They don't take shelter; they simply remain locked in their specially conditioned staterooms as usual. No, they aren't allowed to fry. Those "X"-numbered rooms are almost at the center of the ship anyhow, in officers' and crew's country, and they have their own extra layer of shielding, because you can't expect a Martian, for example, to leave the pressure and humidity he requires and join us humans in the shelter. It would be equivalent to dunking him in a bath tub and holding his head under. If he had a head, I mean.

Still, I suppose eighteen hours of discomfort is better than being sealed into one small room for the whole trip. A Martian can simply con-

template the subtle difference between zero and nothing for that long or longer and a Venerian just estivates. But not me. I need unrest oftener than I need rest — or my circuits get tangled and smoke pours out of my ears.

But Captain Darling couldn't know ahead of time that the storm would be short and relatively mild. He had to assume the worst and protect his passengers and crew. Eleven minutes would have been long enough for us to be in the shelter, as shown later by instrument records. But that is hindsight . . . and a captain doesn't save his ship and the lives depending on him by hindsight.

I am beginning to realize that being captain isn't all glorious adventure and being saluted and wearing four gold stripes on your shoulders. Captain Darling is younger than Daddy and yet he has worry lines that make him look years older.

Query: Poddy, are you *sure* you have what it takes to captain an explorer ship?

Answer: What did Columbus have that you don't? Aside from Isabella, I mean. Semper toujours, girls!

I spent a lot of time before the storm in the control room. Hermes Solar Weather Station doesn't actually warn us when the storm is coming; what they do is *fail* to warn us that the storm is *not* coming. That sounds silly but here is how it works:

The weathermen at Hermes are perfectly safe, as they are underground on the dark side of Mercury. Their instruments peek cautiously over the horizon in the twilight zone. They gather data about Solar weather, including running telephotos at several wave lengths.

But the Sun takes about twenty-five days to turn around, so Hermes Station can't watch all of it all the time. Worse yet, Mercury is going around the Sun in the same direction that the Sun rotates, taking eighty-eight days for one lap. So when the Sun again faces where Mercury was, Mercury has moved on. What this adds up to is that Hermes Station faces exactly the same face of the Sun about every seven weeks.

Which is obviously not good enough for weather-predicting storms that can gather in a day or two, peak in a few minutes, and kill you dead in seconds or less.

So the Solar weather is watched from Earth's Luna and from Venus's satellite station as well, plus some help from Deimos. But there is speed-of-light lag in getting information from these more distant stations back to the main station on Mercury — maybe fifteen minutes for Luna and as high as a thousand seconds for Deimos . . . not good when seconds count.

But the season of bad storms is only a small part of the Sun's cycle as a variable star — say about a year out of each six. (Real years, I mean — Martian years. The Sun's cycle is about eleven of those Earth years that astronomers still insist on using.)

That makes things a lot easier. Five years out of six a ship stands very little chance of being hit by a radiation storm.

But, during the stormy season, a careful skipper (the only sort who lives to draw a pension) will plan his orbit so that he is in the worst danger zone, say inside the orbit of Earth, only during such time as Mercury lies between him and the Sun, so that Hermes Station can always warn him of coming trouble. That is exactly what Captain Darling has done. The *Tricorn* waited at Deimos nearly three weeks longer than the guaranteed sight-seeing time on Mars called for by the Triangle Line's advertising, in order to place his approach to Venus so that Hermes Station could observe and warn — because we are right in the middle of the stormy season.

I suppose the Line's business office hates these expensive delays — Maybe they lose money during the stormy season. But three weeks delay is better than losing a whole shipload of passengers.

But when the storm does start, radio communications goes all to pieces at once — Hermes Station can't warn the ships in the sky.

Stalemate? Not quite. Hermes Station can see a storm shaping up; they can spot the conditions on the Sun which are almost certainly going to produce a radiation storm very shortly. So they send out a storm warning—and the *Tricorn* and other ships hold radiation-shelter drills. Then we wait . . . one day, two days, or a whole week, and the storm fails to develop, or it builds up and starts shooting nasty stuff in great quantities.

All during this time the spaceguard radio station on the dark side of Mercury sends a continuous storm warning, never an instant's break, giving a running account of how the weather looks on the Sun.

— and suddenly it stops.

Maybe it's a power failure and the standby transmitter will cut in. Maybe it's just a "fade" and the storm hasn't broken yet and transmission will resume with reassuring words.

But it may be that the first blast of the storm has hit Mercury with the speed of light, no last-minute warning at all, and the station's eyes are knocked out and its voice is swallowed up in enormously more powerful radiation.

The officer-of-the-watch in the control room can't be sure and he dare not take a chance. The instant he loses Hermes Station he slaps a switch that starts a big clock with just a seond hand. When that clock has ticked off a certain number of seconds — and Hermes Station is *still* silent — the general alarm sounds. The exact number of seconds depends on where the ship is, how far from the Sun, how much longer it will take the first blast to reach the ship after it has already hit Hermes Station.

Now here is where a captain bites his nails and gets gray hair and earns his high pay . . . because *he* has to decide how many seconds to set that

clock for. Actually, if the first and worst blast is at the speed of light, he hasn't any warning time at *all* — because the break in the radio signal from Hermes and that first wave front from the Sun will reach him at the same instant. Or, if the angle is unfavorable, perhaps it is his own radio reception that has been clobbered, and Hermes Station is still trying to reach him with a last-moment warning. He doesn't know.

But he does know that if he sounds the alarm and chases everybody to shelter every time the radio fades for a few seconds, he will get people so worn out and disgusted from his crying "Wolf!" that when the trouble really comes they may not move fast enough.

He knows, too, that the outer hull of his ship will stop almost anything in the electromagnetic spectrum. Among photons (and nothing else travels at speed-of-light) only the hardest X-radiation will get through to passenger country and not much of that. But traveling along behind, falling just a little behind each second, is the really dangerous stuff — big particles, little particles, middle-sized particles, all the debris of nuclear explosion. This stuff is moving very fast but not quite at speed-of-light. He has to get his people safe before it hits.

Captain Darling picked a delay of twenty-five seconds, for where we were and what he expected from the weather reports. I asked him how he picked it and he just grinned without looking happy and said, "I asked my grandfather's ghost."

Five times while I was in the control room the officer of the watch started the clock . . . and five times contact with Hermes Station was picked up again before time ran out and the switch was opened.

The sixth time the seconds trickled away while all of us held our breaths . . . and contact with Hermes wasn't picked up again and the alarm sounded like the wakeful trump of doom.

The captain looked stony-faced and turned to duck down the hatch into the radiation shelter. I didn't move, because I expected to be allowed to remain in the control room. Strictly speaking, the control room is part of the radiation shelter, since it is just above it and is enclosed by the same layers of cascade shielding.

(It's amazing how many people think that a captain controls his ship by peering out a port, as if he were driving a sand wagon. But he doesn't of course. The control room is inside, where he can watch things much more accurately and conveniently by displays and instruments. The only viewport in the *Tricorn* is one at the top end of the main axis, to allow passengers to look out at the stars. But we have never been headed so that the mass of the ship would protect that sight-seeing room from solar radiation, so it has been locked off this whole trip.)

I knew I was safe where I was, so I hung back, intending to take advantage of being "teacher's pet"

—for I certainly didn't want to spend hours or days stretched out on a shelf with gabbling and maybe hysterical women crowding me.

I should have known. The captain hesitated a split second as he started down the hatch and snapped, "Come along, Miss Fries."

I came. He *always* calls me "Poddy" — and his voice had spank in it.

Third-class passengers were already pouring in, since they have the shortest distance to go, and crew members were mustering them in their billets. The crew has been on emergency routine ever since we first were warned by Hermes Station, with their usual one watch in three replaced by four hours on and four hours off. Part of the crew had been staying dressed in radiation armor (which must be *very* uncomfortable) and simply hanging around passenger country. They can't take that heavy armor off for any reason at all until their reliefs show up, dressed also in armor. These crewmen are the "chasers" who bet their lives that they can check every passenger space, root out stragglers, and still reach the shelter fast enough not to accumulate radiation poisoning. They are all volunteers, and the chasers on duty when the alarm sounds get a big bonus and the other half of them who were lucky enough not to be on duty get a little bonus.

The chief officer is in charge of the first section of chasers and the purser is in charge of the second. But they don't get any bonus, even though the one of them on duty when the alarm sounds is by tradition and law the last man to enter the safety of the shelter. This hardly seems fair . . . but it is considered their honor as well as their duty.

Other crewmen take turns in the radiation shelter and are equipped with mustering lists and billeting diagrams.

Naturally service has been pretty skimpy of late, with so many of the crew pulled off their regular duties in order to do just one thing and do it *fast* at the first jangle of the alarm. Most of these emergency duty assignments have to be made from the stewards and clerks; engineers and communicators and such usually can't be spared. So staterooms may not be made up until late afternoon — unless you make your own bed and tidy your room yourself, as I have been doing — and serving meals takes about twice as long as usual, and lounge service is almost non-existent.

But — of course — the passengers realize the necessity for this temporary mild austerity and are grateful because it is all done for their own safety . . .

You think so?

My dear, if you believe that, you will believe anything. You haven't Seen Life until you've seen a rich, elderly Earthman deprived of something he feels is his rightful due, because he figures he paid for it in the price of his ticket. I saw one man, perhaps as old as Uncle Tom and certainly old enough to know

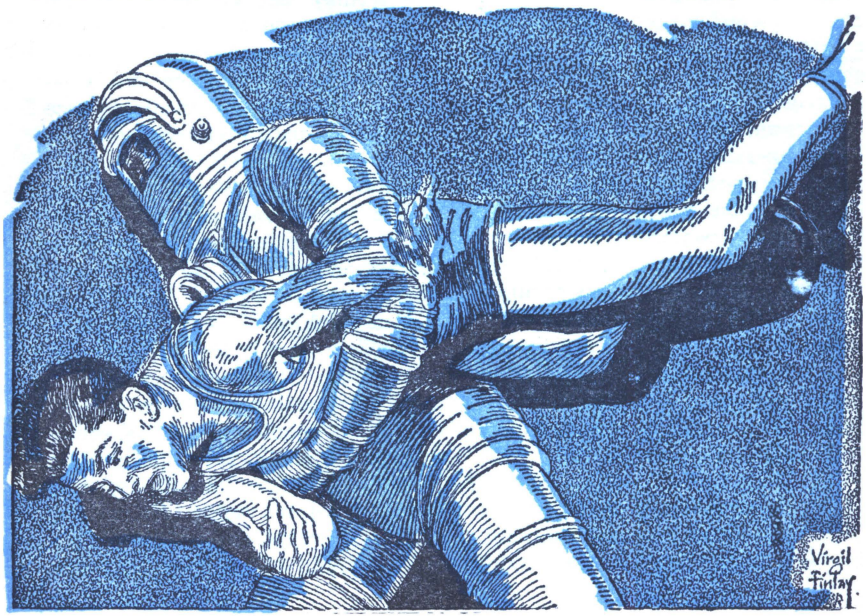
better, almost have a stroke. He turned purple, really purple, and gibbered — all because the bar steward didn't show up on the bounce to fetch him a new deck of playing cards.

The bar steward was in armor at the time and couldn't leave his assigned area, and the lounge steward was trying to be three places at once and answer stateroom rings as well. This didn't mean anything to our jolly shipmate. He was threatening to sue the Line and all its directors when his speech became incoherent.

Not everybody is that way, of course. Mrs. Grew, fat as she is, has been making her own bed and she is never impatient. Some others who are ordinarily inclined to demand lots of service have lately been making a cheerful best of things.

But some of them act like children with tantrums. That isn't pretty in children and is even uglier in in grandparents.

The instant I followed the Captain into the radiation shelter I discovered just how efficient *Tricorn* service can be when it really matters. I was snatched — snatched like a ball, right out of the air — and passed from hand to hand. Of course I don't weigh much at one-tenth gravity, all there is at the main axis; but it is rather breath-taking. Some more hands shoved me on my billet, already stretched out, as casually and impersonally as a housewife stows clean laundry, and a voice called out, "Fries, Podkayne!" and another voice answered, "Check."



The spaces around me, and above and below and across from me, filled up awfully fast, with the crewmen working with the unhurried efficiency of automatic machinery sorting mail capsules. Somewhere a baby was crying and through it I heard the captain saying, "Is that the last?"

"Last one, Captain," I heard the purser answer. "How's the time?"

"Two minutes thirty-seven seconds — and your boys can start figuring their pay-off, because this one is no drill."

"I didn't think it was, Skipper — and I've won a small bet from the mate myself." Then the purser walked past my billet, carrying someone — and I tried to sit up and bumped my head and my eyes bugged out.

The passenger he was carrying had fainted; her head lolled loosely over the crook of his arm. At first I couldn't tell who it was — as the face was a bright red. And then I recognized her and *I* almost fainted. Mrs. Royer!

Of course the first symptom of any bad radiation exposure is erythema. Even with a sunburn, or just carelessness with an ultra-violet lamp, the first thing you see is the skin turning pink or bright red.

But was it possible that Mrs. Royer had been hit with so much sharp radiation in so very little time that her skin had *already* turned red in the worst "sunburn" imaginable? Just from being last man in?

In that case she hadn't fainted; she was dead.

And if that was true, then it was equally true that the passengers who were last to reach the shelter must all have received several times the lethal dosage. They might not feel ill for hours yet; they might not die for days. But they were just as dead as if they were already stretched out stiff and cold.

How many? I had no way of guessing. Possibly — "probably" I corrected myself—all the first-class passengers; they had the farthest to go and were most exposed to start with.

Uncle Tom and Clark —

I felt sudden sick sorrow and wished that I had not been in the control room. If my brother and Uncle Tom were dying. I didn't want to be alive myself.

I don't think I wasted any sympathy on Mrs. Royer. I did feel a shock or horror when I saw that flaming red face. But, truthfully, I didn't like her. I thought she was a parasite with contemptible opinions . . . and, if she had died of heart failure instead, I can't honestly say that it would have affected my appetite. None of us goes around sobbing over the millions and billions of people who have died in the past . . . nor over those still living and yet to be born whose single certain heritage is death (including Podkayne Fries herself). So why should you cry foolish tears simply because you happen to be in the neighborhood when someone you don't like — despise, in fact — comes to the end of her unlovely string?

In any case, I did not have time to feel sorrow for Mrs. Royer; my heart was filled with grief over my brother and my uncle. I was sorry that I hadn't been sweeter to Uncle Tom, instead of imposing on him and expecting him always to drop whatever he was doing to help me with my silly problems. I regretted all the many times I had fought with my brother. After all, he was a child and I am a woman; I should have made allowances.

Tears were welling out of my eyes and I almost missed the captain's first words:

"Shipmates," he said, in a voice firm and very soothing—"my crew and our guests aboard . . . this is not a drill; this is indeed a radiation storm.

"Do not be alarmed. We are all, each and every one of us, perfectly safe. The surgeon has examined the personal radiation exposure meter of the very last one to reach the shelter. It is well within safe limits. Even if they were added to the accumulated exposure of the most-exposed person aboard—who is not a passenger by the way, but one of the ship's company—the total would still be inside the conservative maximum for personal health and genetic hygiene.

"Let me say it again. No one has been hurt, no one is going to be hurt. We are simply going to suffer a mild inconvenience. I wish I could tell you how long we will have to remain here in the safety of the shelter. But I do not know. It might be a few hours, it might be several days. The longest radiation storm of record lasted less than a week. We hope that Old Sol is not bad-tempered this time. But, until we receive word from Hermes Station that the storm is over, we will have to stay inside here. Once we know a storm is over it usually does not take too long to check the ship and make sure that your usual comfortable quarters are safe. Until then . . . be patient and be patient with each other."

I started to feel better as soon as the captain started to talk. His voice was almost hypnotic; it had the soothing all-better-now effect of a mother reassuring a child. I relaxed and was simply weak with the after-effects of my fear.

But presently I began to wonder. Would Captain Darling tell us that everything was all right when really everything was All Wrong simply because it was too late and nothing could be done about it?

I thought over everything I had ever learned about radiation poisoning, from the simple hygiene they teach in kindergarten to a tape belonging to Mr. Clancy that I had scanned only that week.

And I decided that the captain had been telling the truth.

Why? Because, even if my worst fears had been correct, and we had been hit as hard and unexpectedly as if a nuclear weapon had exploded by us, nevertheless something can *always* be done about it. There would be three groups of us—those who hadn't been hurt at all

and were not going to die (certainly everybody who was in the control room or in the shelter when it happened, plus all or almost all the third-class passengers if they had moved fast), a second group so terribly exposed that they were certain to die, no matter what (let's say everybody in first-class country)—and a third group, no telling how large, who had been dangerously exposed but could be saved by quick and drastic treatment.

In which case that quick and drastic action would be going on.

They would be checking our exposure meters and reshuffling us—sorting out the ones in danger who required rapid treatment, giving morphine shots to the ones who were going to die anyhow and moving them off by themselves, stacking those of us who were safe by ourselves to keep us from getting in the way, or drafting us to help nurse the ones who could be helped.

That was certain. But there was nothing going on, nothing at all—just some babies crying and a murmur of voices. Why, they hadn't even looked at the exposure meters of most of us. It seemed likely that the surgeon had checked only the last few stragglers to reach the shelter.

Therefore the captain had told us the simple, heart-warming truth.

I felt so good that I forgot to wonder why Mrs. Royer had looked like a ripe tomato. I relaxed and soaked in the warm and happy fact that darling Uncle Tom wasn't going to die and that my kid brother would live to cause me lots more homey grief. I almost went to sleep—

—and was yanked out of it by the woman on my right starting to scream: "Let me out of here! *Let me out of here!*"

Then I did see some fast and drastic emergency action.

Two crewmen swarmed up to our shelf and grabbed her; a stewardess was right behind them. She slapped a gag over the woman's mouth and gave her a shot in the arm, all in one motion. Then they held her until she stopped struggling. When she was quiet, one of the crewmen picked her up and took her somewhere.

Shortly thereafter a stewardess showed up who was collecting exposure meters and passing out sleeping pills. Most people took them but I resisted—I don't like pills at best and I certainly won't take one to knock me out so that I won't know what is going on. The stewardess was insistent but I can be awful stubborn, so she shrugged and went away. After that there were three or four more cases of galloping claustrophobia or maybe just plain screaming funk; I wouldn't know. Each was taken care of promptly with no fuss and shortly the shelter was quiet except for snores, a few voices and fairly continuous sounds of babies crying.

There weren't any babies in first class and not many children of any age. Second class has quite a few kids. but third class is swarming with them and every family seems to have at least one young baby. It's

why they are there, of course. Almost all of third class are Earth people emigrating to Venus. With Earth so crowded, a man with a big family can easily reach the point where emigration to Venus looks like the best way out of an impossible situation, so he signs a labor contract and Venus Corporation pays for their tickets as an advance against his wages.

I suppose it's all right. They need to get away and Venus needs all the people they can get. But I'm glad Mars Republic doesn't subsidize immigration, or we would be swamped. Our immigrants have to pay their own way. They even have to deposit return tickets with the PEG board, tickets they can't cash in for two of our years.

A good thing, too. At least a third of our immigrants who come to Mars just can't adjust. They get homesick and despondent and use those return tickets to go back to Earth. I can't understand anyone's not liking Mars; but if they don't then it's better if they don't stay.

I lay there, thinking about such things, a little bit excited and a little bit bored, and mostly wondering why somebody didn't do something about those poor babies.

The lights had been dimmed and when somebody came up to my shelf I didn't see who it was at first. "Poddy?" came Girdie's voice, softly but clearly. "Are you in there?"

"I think so. What's up, Girdie?" I tried to keep my voice down, too.

"Do you know how to change a baby?"

"I certainly do!" Suddenly I wondered how Duncan was doing . . . and realized that I hadn't really thought about him in *days*. Had he forgotten me? Would he know Grandmaw Poddy the next time he saw her?

"Then come along, chum. There's work to be done."

There certainly was. The lowest part of the shelter, four catwalks below my billet and just over the engineering spaces, was cut like a pie into four quarters — sanitary units, two sick bays, for men and for women and both crowded—and jammed into a little corner between the infirmaries was a sorry pretense for a nursery, not more than two meters in any dimension. On three walls of it babies were stacked high in canvas crib baskets snap-hooked to the walls, and more overflow into the women's sick bay. A sweeping majority of those babies were crying.

In the crowded middle of this pandemonium two harrassed stewardesses were changing babies, working on a barely-big-enough shelf let down out of one wall. Girdie tapped one of them on the shoulder. "All right, girls, reinforcements have landed. So get some rest and a bite to eat."

The older one protested feebly, but they were awfully glad to take a break. They backed out and Girdie and I moved in and took over.

I don't know how long we worked, as we didn't have time to think about it—there was always more than we

could do and we never quite got caught up. But it was better than lying on a shelf and staring at another shelf just centimeters above your nose. The worst of it was that there simply wasn't enough room. I worked with both elbows held in close, to keep from bumping Girdie on one side and a basket crib that was nudging me on the other side.

But I'm not complaining about that. The engineer who designed that shelter into the *Tricorn* had been forced to plan as many people as possible into the smallest space; there wasn't any other way to do it. I doubt if he worried much about getting babies changed and dry. He had enough to do just worrying about how to keep them alive.

But you can't tell that to a baby.

Girdie worked with an easy, no-lost-motions efficiency that surprised me; I would have guessed that she had never had her hands on a baby. But she knew what she was doing and was faster than I was. "Where are their mothers?" I asked, meaning: "Why aren't those lazy slobs here helping instead of leaving it to the stewardesses and some volunteers?"

Girdie understood me. "Most of them have other children to keep quiet. They have their hands full. A couple of them went to pieces themselves; they're in there sleeping it off." She jerked her head toward the sick bay.

I shut up, as it made sense. You couldn't possibly take care of an infant properly in one of those shallow niches the passengers were stacked in—and if each mother tried to bring her own baby down here each time, the traffic jam would be indescribable. No, this assembly-line system was necessary. I said, "We're running out of Disposies."

"Stacked in a cupboard behind you. Did you see what happened to Mrs. Garcia's face?"

"Huh?" I squatted and got out more supplies. "You mean Mrs. Royer, don't you?"

"I mean both of them. But I saw Milady Garcia first and got a better look at her, while they were quieting her down. You didn't see her?"

"No."

"Sneak a look into the women's ward first chance you get. Her face is the brightest, most amazing chrome yellow I've ever seen in a paint pot, much less on a human face."

I gasped. "Gracious! I did see Mrs. Royer—bright red instead of yellow. Girdie—what in the world

happened to make them that way?"

"I'm fairly sure I know what happened," Girdie answered slowly, "but no one can figure out *how* it happened."

"I don't follow you."

"The colors tell the story. Those are the exact shades of two of the water-activated dyes used in photography. Know anything about photography, hon?"

"Not much," I answered. I wasn't going to admit what little I did know . . . because Clark is a very accomplished photographer. And I wasn't going to mention *that,* either!

"Well, surely you've seen someone taking snapshots. You pull out the tab and there is your picture—only there's no picture as yet. Clear as glass. So you dip it in water and slosh it around for about thirty seconds. Still no picture. Then you lay it anywhere in the light and the picture starts to show . . . and when the colors are bright enough to suit you, you cover it up and let it finish drying in darkness, so that the colors won't get too garish."

Girdie suppressed a chuckle. "From the results, I would say that they didn't cover their faces in time to stop the process. They probably tried to scrub it off and made it worse."

I said, in a puzzled tone—and I *was* puzzled, about part of it: "I still don't see how it could happen."

"Neither does anybody else. But the Surgeon has a theory. Somebody booby-trapped their wash cloths."

"Huh?"

"Somebody in the ship must have a supply of the pure dyes. That somebody soaked two wash cloths in the inactive dyes—colorless, I mean—and dried them carefully, all in total darkness. Then that same somebody sneaked those two prepared wash cloths into those two staterooms and substituted them for wash cloths they found there on the stateroom wash trays. That last part wouldn't be hard for anyone with cool nerves. Service in the staterooms has been pretty haphazard the last day or two, what with this flap over the radiation storm. Maybe a fresh wash cloth appears in your room, maybe it doesn't—and all the

ship's wash cloths and towels are the same pattern. You just wouldn't know."

I certainly hope not, I said to myself—and added, aloud, "I suppose not."

"Certainly not. It could be one of the stewardesses. Or any of the passengers. But the real mystery is: where did the dyes come from? The ship's shop doesn't carry them . . . just the rolls of prepared film . . . and the surgeon says that he knows enough about chemistry to be willing to stake his life that no one but a master chemist, using a special laboratory, could possibly separate out pure dyes from a roll of film. He thinks, too, that since the dyes aren't even manufactured on Mars, this somebody must be someone who came aboard at Earth." Girdie glanced at me and smiled. "So you're not a suspect, Poddy. But I am."

"Why are you a suspect?" (And if I'm not a suspect, then my brother isn't a suspect!) "Why, that's silly!"

"Yes, it is . . . because I wouldn't have known how even if I'd had the dyes. But it isn't . . . inasmuch as I could have bought them before I left Earth. And I don't have reason to like either of those women."

"I've never heard you say a word against them."

"No, but they've said a few thousand words about me—and other people have ears. So I'm a hot suspect, Poddy. But don't fret about it. I didn't do it, so there is no possible way to show that I did." She chuckled. "And I hope they never catch the somebody who did!"

I didn't even answer, "Me, too!"

I could think of one person who might figure out a way to get pure dyes out of a roll of film, without a complete chemistry laboratory . . . and I was checking quickly through my mind every item I had seen when I searched Clark's room.

There hadn't been *anything* in Clark's room which could have been photographic dyes. No, not even film.

Which proves precisely nothing where Clark is concerned. I just hope that he was careful about fingerprints.

Two other stewardesses came in presently and we fed all the babies. Then Girdie and I managed a sort of wash-up and had a snack standing up, and then I went back up to my assigned shelf and surprised myself by falling asleep.

I must have slept three or four hours, because I missed the happenings when Mrs. Dirkson had her baby. She is one of the Terran emigrants to Venus and she shouldn't have had her baby until long after we reach Venus. I suppose the excitement stirred things up. Anyhow, when she started to groan, they carried her down to that dinky infirmary and Dr. Torland took one look at her and ordered her carried up into the control room—because the control room was the only place inside the radiation-safe space roomy enough to let him do what needed to be done.

So that's where the baby was born,

on the deck of the control room, right between the chart tank and the computer. Dr. Torland and Captain Darling are godfathers and the senior stewardess is godmother and the baby's name is "Radiant," which is a poor pun but rather pretty.

They jury-rigged an incubator for Radiant right there in the control room before they moved Mrs. Dirkson back to the infirmary and gave her something to make her sleep. The baby was still there when I woke up and heard about it.

I decided to take a chance that the captain was feeling more mellow now, and sneaked up to the control room and stuck my head in. "Could I please see the baby?"

The captain looked annoyed, then he barely smiled and said, "All right, Poddy. Take a quick look and get out."

So I did. Radiant masses about a kilo and, frankly, she looks like cat meat, not worth saving. But Dr. Torland says that she is doing well and that she will grow up to be a fine, healthy girl—prettier than I am. I suppose he knows what he is talking about, but if she is ever going to be prettier than I am, she has lots of kilometers to go. She is almost the color of Mrs. Royer and she's mostly wrinkles.

But no doubt she'll outgrow it, because she looks like one of the pictures toward the end of the series in a rather goody-goody school book called *The Miracle of Life*. The earlier pictures in that series were even less appetizing. It is probably just as well that we can't possibly see babies until they are ready to make their debut, or the human race would lose interest and die

It would probably be still better to lay eggs. Human engineering isn't all that it might be, especially for us female types.

I went back down where the more mature babies were to see if they needed me. They didn't, not right then, as the babies had been fed again and a stewardess and a young woman I had never met were on duty and claimed that they had been working only a few minutes. I hung around anyhow, rather than go back up to my shelf. Soon I was pretending to be useful by reaching past the two who really were working and checking the babies, then handing down the ones who needed servicing as quickly as shelf space was cleared.

It speeded things up a little. Presently I pulled a little wiggler out of his basket and was cuddling him. The stewardess looked up and said, "I'm ready for him."

"Oh, he's not wet," I answered. "Or 'she' as the case may be. Just lonely and needs loving."

"We haven't time for that."

"I wonder." The worst thing about that midget nursery was the high noise level. The babies woke each other and egged each other on and the decibels were something fierce. No doubt they were all lonely and probably frightened—I'm sure I would be. "Most of these babies need loving more than they need anything else."

"They've all had their bottles."

"A bottle can't cuddle."

She didn't answer, but just started checking the other infants. But I didn't think what I had said was silly. A baby can't understand your words and he doesn't know where he is if you put him in a strange place, nor what has happened. So he cries. Then he needs to be soothed.

Girdie showed up just then. "Can I help?"

"You certainly can. Here . . . hold this one."

In a few minutes I rounded up three girls about my age and I ran across Clark prowling around the catwalks instead of staying quietly in his assigned billet so I drafted him, too. He wasn't exactly eager to volunteer. But doing anything was slightly better than doing nothing; he came along.

I couldn't use any more help as standing room was almost non-existent. We worked it only by having two baby-cuddlers sort of back into each of the infirmaries, with the mistress of ceremonies (me) standing in the little space at the bottom of the ladder, ready to scrunch in any direction to let people get in and out of the washrooms and up and down the ladder—and with Girdie, because she was tallest, standing back of the two at the changing shelf and dealing out babies, the loudest back to me for further assignment and the wet ones down for service—and vice versa; dry ones back to their baskets unless they started to yell, ones that had fallen asleep from being held and cuddled likewise.

At least seven babies could receive personal attention at once, and sometimes as high as ten or eleven, because at one-tenth gee your feet never get tired and a baby doesn't weigh anything at all worth mentioning; it was possible to hold one in each arm and sometimes we did.

In ten minutes we had that racket quieted down to an occasional whimper, quickly soothed. I didn't think Clark would stick it out, but he did —probably because Girdie was part of the team. With a look of grim nobility on his face the like of which I have never before seen there he cuddled babies and presently was saying, "Kitchy-koo, kitchy-koo!" and "There, there, honey bun," as if he had been doing it all his life. Furthermore, the babies seemed to like him. He could soothe one down quickest of any of us.

This went on for several hours, with volunteers moving in and tired ones moving out and positions rotating. I was relieved once and had another snatched meal and then stretched out on my shelf for about an hour before going back to duty.

I was back at the changing shelf when the captain called us all by speaker: "Attention, please. In five minutes power will be cut and the ship will be in free fall while a repair is made outside the ship. All passengers strap down. All crew members observe precautions for free fall."

I went right on changing the

baby under my hands; you can't walk off on a baby. In the meantime babies that had been being cuddled were handed back and stowed, and the cuddling team was chased back to their shelves to strap down and spin was being taken off the ship. One rotation every twelve seconds you simply don't notice at the center of the ship—but you do notice when the *unspinning* starts. The stewardess with me on the changing bench said, "Poddy, go up and strap down. Hurry."

I said, "Don't be silly, Bergitta, there's work to be done," and popped the baby I had just dried into its basket and fastened the zipper.

"You're a passenger. That's an order—*please!*"

"Who's going to check all these babies? You? And how about those four in on the floor of the women's sick bay?"

Bergitta looked startled and hurried to fetch them. All the other stewardesses were busy checking on strap-down; she didn't bother me any more with That's-an-order; she was too busy hooking up the changing shelf and fastening baby baskets to the space. I was checking all the others and almost all of them had been left unzipped—logical enough while we were working with them, but zipping the cover on a baby basket is the same as strapping down for a grown-up. It holds them firmly but comfortably with just their heads free.

I still hadn't finished when the siren sounded and the captain cut the power.

Oh, brother! Pandemonium. The siren woke the babies who were asleep and scared any who were awake and every single one of those squirmy little worms started to cry at the top of its lungs . . . and one I hadn't zipped yet popped right out of its basket and floated right into the middle of space and I snagged it by one leg and was loose myself and the baby and I bumped gently against the baskets on one wall—only it wasn't a wall any longer, it was just an obstacle to further progress. Free fall can be very confusing when you are not used to it, which I admit I am not. Or wasn't.

The stewardess grabbed us both. She shoved the elusive little darling back into her straightjacket and zipped it while I hung onto a hand hold. And by then two more were loose.

I did better this time. I snagged one without letting go and just kept it captive while Bergitta took care of the other one. Bergitta really knew how to handle herself in zero gravity, with unabrupt graceful movements like a dancer in a slow-motion solly. I made a mental note that this was a skill I must acquire.

I thought the emergency was over. I was wrong.

Babies don't like free fall; it frightens them. It also makes their sphincters most erratic. Most of the latter we could ignore—but Disposies don't catch everything; regrettably some six or seven of them had been fed in the last hour.

I know now why stewardesses are

all graduate nurses. We kept five babies from choking to death in the next few minutes. That is, Bergitta cleared the throat of the first one that up-chucked its milk and, seeing what she had done, I worked on the second one in trouble while she grabbed the third. And so on.

Then we were very busy trying to clear the air with clean Disposies because—listen, dear, if you think you've had it tough because your baby brother threw up all over your new party dress, then you should try free fall, where it doesn't settle anywhere in particular but just floats around like smoke until you either get it or it gets you.

From six babies. In a small compartment.

By the time we had the mess cleaned up, or 95% so, anyway, we were both mostly sour milk from hair part to ankle and the captain was warning us to stand by for acceleration, which came almost at once to my great relief.

The chief stewardess showed up and was horrified that I had not strapped down. I told her in a ladylike way to go to hell, using a more polite idiom suitable to my age and sex—and asked her what Captain Darling would think about a baby passenger choking to death simply because I had strapped down all regulation-like and according to orders? And Bergitta backed me up and told her that I had cleared choke from at least two and maybe more—she had been too busy to count.

Mrs. Peal, the C.S., changed her tune in a hurry and was sorry and thanked me. She sighed and wiped her forehead and trembled and you could see that she was dead on her feet. But nevertheless she checked all the babies herself and hurried out. Pretty quickly we were relieved. Bergitta and I crowded into the women's washroom and tried to clean up some — not much good as we didn't have any clean clothes to change into.

The "All Clear" felt like a reprieve from purgatory. A hot bath was heaven itself, with the angels singing. "A" deck had already been checked for radiation level and pronounced safe while the repair outside the ship was being made. The repair itself, I learned, was routine. Some of the antennas and receptors and things outside the ship can't take a flare storm. They burn out, so immediately after a storm men go outside in armored space suits and replace them. This is normal and unavoidable, like replacing lighting tubes at home. But the men who do

it get the same radiation bonus that the passenger chasers get — because Old Sol could burn them down with one tiny little afterthought.

I soaked in warm, clean water and thought how miserable an eighteen hours it had been. Then I decided that it hadn't been so bad after all.

It's lots better to be miserable than to be bored.

IX

I am now twenty-seven years old. Venus years, of course, but it sounds so much better. All is relative.

Not that I would stay here on Venus even if guaranteed the Perfect Age for a thousand years. Venusberg is sort of an organized nervous breakdown and the country outside the city is even worse. What little I've seen of it. And I don't want to see much of it. Why they ever named this dreary, smog-ridden place for the Goddess of Love and Beauty I'll never know. This planet appears to have been put together from the scrap left over after the rest of the Solar System was finished.

I don't think I would go outside Venusberg at all except that I've just got to see fairies in flight. The only one I've seen so far is in the lobby of the hilton we are staying in and is stuffed.

Actually I'm just marking time until we shape for Earth, because Venus is a Grave Disappointment. Now I'm keeping my fingers crossed that Earth will not be a G.D., too. But I don't see how it can be. There is something deliciously *primitive* about the very thought of a planet where one can go outdoors without any special preparations. Why, Uncle Tom tells me that there are places along the Mediterranean (that's an ocean in La Belle France) where the natives bathe in the ocean itself without any clothing of any sort at all, much less insulasuits or masks.

I wouldn't like that. Not that I'm body proud; I enjoy a good sauna sweat-out as well as the next Marsman. But it would scare me cross-eyed to bathe in an ocean. I don't ever intend to get wet all over in anything larger than a bath tub. I

saw a man fished out of the Grand Canal once, in early spring. They had to thaw him before they could cremate him.

But it is alleged that, along the Mediterranean shore, the air in the summer time is often blood temperature and the water not much cooler. As may be. Podkayne is not going to take any silly chances.

Nevertheless I am terribly eager to see Earth, in all its fantastic unlikeliness. It occurs to me that my most vivid conceptions of Earth come from the Oz stories. When you come right down to it I suppose that isn't too reliable a source. I mean, Dorothy's conversations with the Wizard are instructive — but about *what?* When I was a child I believed every word of my Oz tapes . . . but now I am no longer a child and I do not truly suppose that a whirlwind is a reliable means of transportation, nor that one is likely to encounter a Tin Woodman on a road of yellow brick.

Tik-Tok, yes — because we really do have Tik-Toks in Marsopolis for the simpler and more tedious work. Not precisely like Tik-Tok of Oz, of course, and not called "Tik-Toks" by anyone but children . . . but near enough, near enough, quite sufficient to show that the Oz stories are founded on fact, if not precisely historical.

And I believe in the Hungry Tiger, too, in the most practical way possible, because there was one in the municipal zoo when I was a child, a gift from the Calcutta Kiwanis Klub to Marsopolis Kiwanians. It always looked at me as if it were sizing me up as an appetizer. It died when I was about five. I didn't know whether to be sorry or glad. It was so beautiful . . . and so *very* Hungry.

But Earth is still many weeks away and, in the meantime, Venus does have some points of interests for the newcomer, such as I.

In traveling I strongly recommend traveling with my Uncle Tom. On arriving here there were no silly waits in "Hospitality" (!) rooms; we were given the "courtesy of the port" at once — to the *extreme* chagrin of Mrs. Royer. "Courtesy of the port" means that your baggage isn't examined and that nobody bothers to look at that bulky mass of documents — passport and health record and security clearance and solvency proof and birth certificate and I.D.s and nineteen other silly forms. Instead we were whisked from satellite station to space port in the private yacht of the Chairman of the Board and were met there by the chairman himself! — and popped into his Rolls and wafted royally to Hilton Tannhauser.

We were invited to stay at his official residence (his "cottage," that being the Venus word for a palace) but I don't think he really expected us to accept because Uncle Tom just cocked his left or satirical eyebrow and, "Mr. Chairman, I don't think you would want me to appear to be bribed even if you manage," he said.

And the chairman didn't seem

offended at all He just chuckled till his belly shook like Saint Nicholas (whom he strongly resembles even to the beard and the red cheeks although his eyes are cold even when he laughs, which is frequently.)

"Senator," he said, "you know me better than that. My attempt to bribe you will be much more subtle. Perhaps through this young lady. Miss Podkayne, are you fond of jewelry?"

I told him honestly that I wasn't, very, because I always lose it. So he blinked and said to Clark, "How about you, son?"

Clark said, "I prefer cash."

The chairman blinked again and said nothing.

Nor had he said anything to his driver when Uncle Tom declined the offer of his roof; nevertheless we flew straight to our hilton — which is why I don't think he ever expected us to stay with him.

But I am beginning to realize that this is not entirely a pleasure trip for Uncle Tom . . . and to grasp emotionally a fact known only intellectually in the past, i.e., Uncle Tom is not merely the best pinochle player in Marsopolis, he sometimes plays other games for higher stakes. I must confess that the what or why lies outside my admittedly youthful horizon— save that everyone knows that the Three-Planets Conference is coming up

Query: Could U.T. conceivably be involved in this? As a consultant or something? I hope not. as it might keep him tied up for weeks on Luna. I have no wish to waste time on a dreary ball of slag while the Wonders of Terra await me — and Uncle Tom just *might* be difficult about letting me go down to Earth without him.

But I wish still more strongly that Clark had not answered the chairman truthfully.

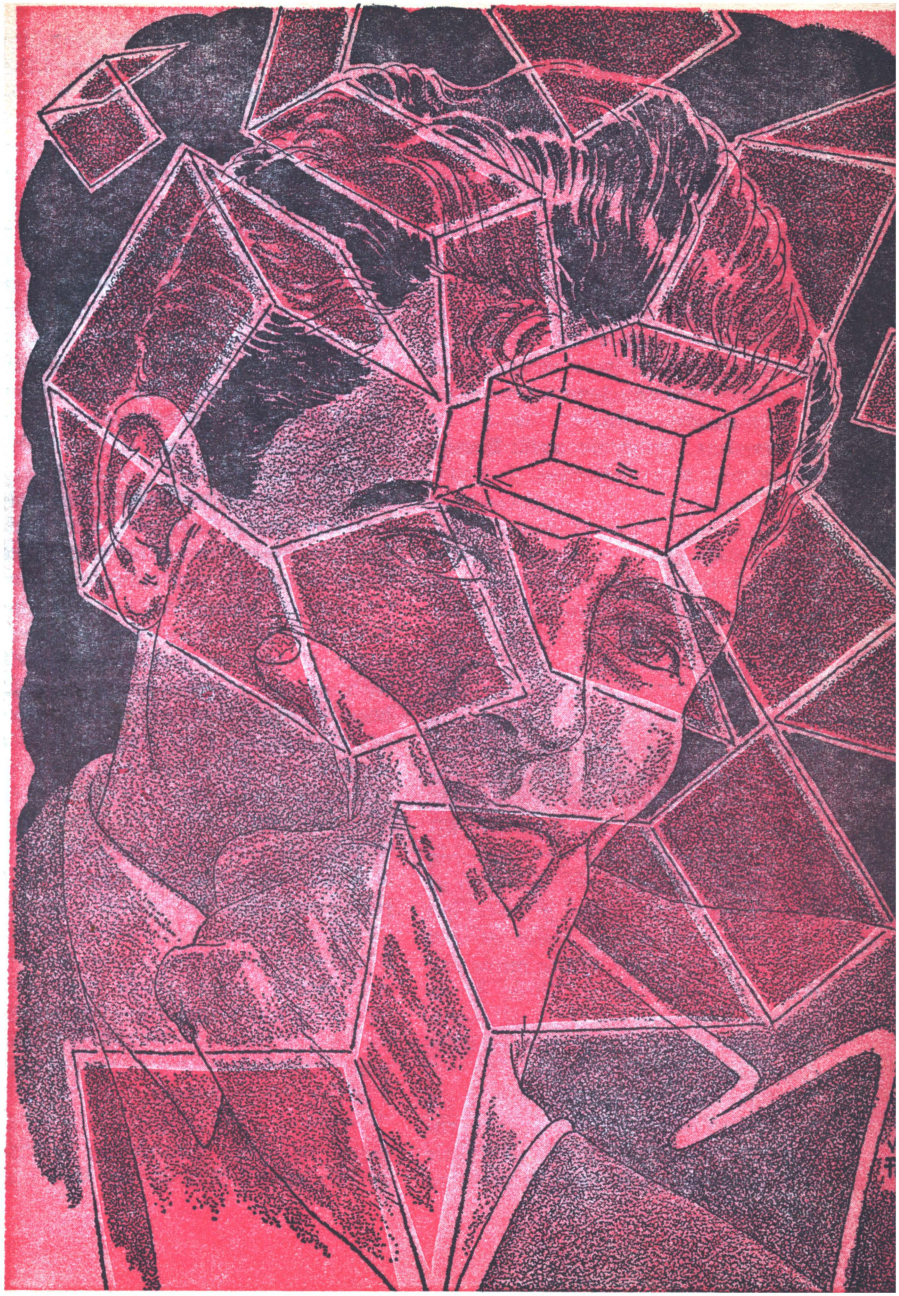
Still, Clark would not sell out his own uncle for more money.

On the other hand, Clark does not regard money as "mere." I must think about this —

But it is some comfort to realize that anyone who handed Clark a bribe would find that Clark had not only taken the bribe but the hand.

Possibly our suite at the Tannhauser is intended as a bribe, too. Are we paying for it? I'm almost afraid to ask Uncle Tom, but I do know this: the servants that come with it won't accept tips. Not any. Although I very carefully studied up on the subject of tipping, both for Venus and Earth, so that I would know what to do when the time came — and it had been my understanding that *anyone* on Venus *always* accepts tips, even ushers in churches and bank tellers.

But not the servants assigned to us. I have two tiny little amber dolls, identical twins. who shadow me and would bathe me if I would let them. They speak Portuguese but not Ortho — and at present my Portuguese is limited to "Gobble-Gobble" (which means "Thank you") and I have trouble explaining to them that I can dress and undress myself and I'm not too sure about their names. They both answer to "Maria."



Or at least I don't *think* they speak Ortho. I must think about this, too.

Venus is officially bilingual, Ortho and Portuguese, but I'll bet I heard at least twenty other languages the first hour we were down. German sounds like a man being choked to death. French sounds like a cat fight, while Spanish sounds like molasses gurgling gently out of a jug. Cantonese— Well, think of a man trying to vocalize Bach who doesn't like Bach very much to start with.

Fortunately almost everybody understands Ortho as well. Except Maria and Maria. If true.

I could live a long time without the luxury of personal maids but I must admit that this hilton suite is quite a treat to a plain-living wholesome Mars girl, namely me. Especially as I am in it quite a lot of the time and will be for a while yet. The ship's surgeon, Dr. Torland, gave me many of the special inoculations needed for Venus on the trip here — an unpleasant subject I chose not to mention — but there still remain many more before it will be safe for me to go outside the city, or even very much into the city. As soon as we reached our suite a physician appeared and played chess on my back with scratches, red to move and mate in five moves. Three hours later I had several tens of welts, with something horrid that must be done about each of them

Clark ducked out and didn't get his scratch tests until the next morning. I misdoubt he will die of Purple Itch or some such, were it not that his karma is so clearly reserving him for hanging. Uncle Tom refused the tests. He was through all this routine more than twenty years ago and anyhow he claims that the too, too mortal flesh is merely a figment of the imagination.

So I am more or less limited for a few days to lavish living here in the Tannhauser. If I go out I must wear gloves and a mask even in the city. But one whole wall of the suite's salon becomes a stereo stage simply by voice request, either taped or piped live from any theater or club in Venusberg — and some of the "entertainment" has widened my sophistication unbelievably, especially when Uncle Tom is not around. I am beginning to realize that Mars is an essentially puritanical culture. Of course Venus doesn't actually have laws, just company regulations, none of which seem to be concerned with personal conduct. But I had been brought up to believe that Mars Republic is a free society. I suppose it is. However, there is "freedom" and "freedom."

Here the Venus Corporation owns everything worth owning and runs everything that shows a profit, all in a fashion that would make Marsmen swoon. But I guess Venusmen would swoon at how straitlaced *we* are. I know this Mars girl blushed for the first time in I don't know when and switched off a show that I didn't really believe.

But the solly screen is far from being the only astonishing feature of this suite. It is so big that one

should carry food and water when exploring it and the salon is so huge that local storms appear distinctly possible. My private bath is a suite in itself, with so many gadgets in it that I ought to have an advanced degree in engineering before risking washing my hands. But I've learned how to use them all and purely love them! I had never dreamed that I had been limping along all my life without Utter Necessities.

Up to now my top ambition along these lines has been not to have to share a wash stand with Clark because it has never been safe to reach for my own Christmas-present cologne without checking to see that it is not nitric acid or worse. Clark regards a bathroom as an auxiliary chemistry lab; he's not much interested in staying clean.

But the most astonishing thing in our suite is the piano. No, no, dear, I don't mean a keyboard hooked into the sound system; I mean a *real* piano. Three legs. Made out of wood. Enormous. That odd awkward-graceful curved shape that doesn't fit anything else and can't be put in a corner. A top that opens up and lets you see that it really does have a harp inside and very complex machinery for making it work.

I think that there are just four real pianos on all of Mars, the one in the Museum that nobody plays and probably doesn't work, the one in Lowell Academy that no longer has a harp inside it, just wiring connections that make it really the same as any other piano, the one in the Rose House (as if any President ever had time to play a piano!), and the one in the Beaux Arts Hall that actually is played sometimes by visiting artists although I've never heard it. I don't think there can be another one, or it would have been bannerlined in the news, wouldn't you think?

This one was made by a man named Steinway and it must have taken him a lifetime. I played Chopsticks on it (that being the best opus in my limited repertoire) until Uncle asked me to stop. Then I closed it up, keyboard and top, because I had seen Clark eyeing the machinery inside, and warned him sweetly but firmly that if he touched one finger to it I would break all his fingers while he was asleep. He wasn't listening but he knows I mean it. That piano is Sacred to the Muses and is not to be taken apart by our Young Archimedes.

I don't care what the electronics engineers say. There is a vast difference between a "piano" and a *real* piano. No matter if their silly oscilloscopes "prove" that the sound is identical. It is like the difference between being warmly clothed—or climbing up in your Daddy's lap and getting *really* warm.

I haven't been under house arrest all the time. I've been to the casinos, with Girdie and with Dexter Cunha, Dexter being the son of Mr. Chairman of the Board Kurt Cunha. Girdie is leaving us here, going to stay on Venus, and it makes me sad.

I asked her, "Why?"

We were sitting alone in our palatial salon. Girdie is staying in this same hilton, in a room not very different nor much larger than her cabin in the *Tricorn*. I guess I'm just mean enough that I wanted her to see the swank we were enjoying. But my excuse was to have her help me dress. For now I am wearing (Shudder!) *support* garments. Arch supports in my shoes and tight things here and here intended to keep me from spreading out like an amoeba. I won't say what Clark calls them because Clark is rude, crude, unrefined, and barbaric.

I hate them. But, at 84% of one standard gee I need them despite all that exercise I took aboard ship. This alone is reason enough not to live on Venus, or on Earth, even if they were as delightful as Mars.

Girdie did help me — she had bought them for me in the first place — but she also made me change my makeup, one which I had most carefully copied out of the latest issue of *Aphrodite*. She looked at me and said, "Go wash your face. Poddy. Then we'll start over."

I pouted out my lip and said, "Won't!" The one thing I had noticed most and quickest was that *every* female on Venus wears paint like a Red Indian shooting at the Good Guys in the sollies. Even Maria and Maria wear three times as much makeup just to work in as Mother wears to a formal reception — and Mother doesn't wear any when working.

"Poddy, Poddy! Be a good girl."

"I *am* being a good girl. It's polite to do things the way the local people do them, I learned that when I was just a child. And look at yourself in the mirror!" Girdie was wearing as high-styled a Venusberg face-do as any in that magazine.

"I know what I look like. But I am more than twice your age and no one even suspects me of being young and sweet and innocent. Always be what you are, Poddy. Never pretend. Look at Mrs. Grew. She's a comfortable fat old woman. She isn't kittenish, she's just nice to be around."

"You want me to look like a hick tourist!"

"I want you to look like Poddy. Come, dear, we'll find a happy medium. I grant you that even the girls your age here wear more makeup than grown-up women do on Mars — so we'll compromise. Instead of painting you like a Venusberg trollop, we'll make you a young lady of good family and gentle breeding, one who is widely traveled and used to all sorts of customs and manners — and so calmly sure of herself that she knows what is best for her . . . totally uninfluenced by local fads."

Girdie is an artist, I must admit. She started with a blank canvas and worked on me for more than an hour. When she got through, you couldn't see that I was wearing any makeup at all.

But here is what you could see: I was at least two years older (real years, Mars years, or about six Venus years); my face was thinner and my nose not pug at all and I looked ever so slightly world-weary

in a sweet and tolerant way. My eyes were enormous.

"Satisfied?" she asked.

"I'm *beautiful*!"

"Yes, you are. Because you are still Poddy. All I've done is make a picture of Poddy the way she is going to be. Before long."

My eyes filled with tears and we had to blot them up very hastily and she repaired the damage. "Now," she said briskly, "all we need is a club. And your mask."

"What's the club for? And I won't wear a mask, not on top of this."

"The club is to beat off wealthy stockholders who will throw themselves at your feet. And you will wear your mask, or else we won't go."

We compromised. I wore the mask until we got there and Girdie promised to repair any damage to my face — and promised that she would coach me as many times as necessary until I could put on that lovely, lying face myself. The casinos are safe, or supposed to be. The air is not merely filtered and conditioned but freshly regenerated, free of any trace of pollen, virus, colloidal suspension or whatever. This is because lots of tourists don't like to take all the long list of immunizations necessary actually to *live* on Venus . . . but the Corporation wouldn't think of letting a tourist get away unbled. So the hiltons are safe and the casinos are safe and a tourist can buy a health insurance policy from the Corporation for a very modest premium. Then he finds that he can cash his policy back in for gambling chips any time he wants to. I understand that the Corporation hasn't had to pay off on one of those policies very often.

Venusberg assaults the eye and ear even from inside a taxi. I believe in free enterprise; all Marsmen do, it's an article of faith and the main reason we *won't* federate with Earth (and be outvoted five hundred to one). But free enterprise is not enough excuse to blare in your ears and glare in your eyes every time you leave your own roof. The shops never close (I don't think anything ever closes, in Venusberg) and full color and stereo ads climb right inside your taxi and sit in your lap and shout in your ear.

Don't ask me how this horrid illusion is produced. The engineer who invented it probably flew off on his own broom. This red devil about a meter high appeared between us and the partition separating us from the driver (there wasn't a sign of a solly receiver) and started jabbing at us with a pitchfork. "Get the Hi-Ho Habit!" it shrieked. "Everybody drinks Hi-Ho! Soothing, Habit-Forming, Dee-*lishus!* Get High with Hi-Ho!"

I shrank back against the cushions.

Girdie phoned the driver. "Please shut that thing off."

It faded down to just a pink ghost and the commercial dropped to a whisper while the driver answered, "Can't, Madam. They rent the concession." Devil and noise came back on full blast.

And I learned something about tipping. Girdie took money from

her purse, displaying one note. Nothing happened and she added a second; noise and image faded down again. She passed them through a slot to the driver and we weren't bothered any more. Oh, the transparent ghost of the red devil remained and a nagging whisper of his voice, until both were replaced by another ad just as faint — but we could talk. The giant ads in the street outside were noisier and more dazzling; I didn't see how the driver could see or hear to drive, especially as traffic was unbelievably thick and heart-stoppingly fast and frantic and our driver kept cutting in and out of lanes and up and down in levels as if he were trying utmostly to beat Death to a hospital.

By the time we slammed to a stop on the roof of Dom Pedro Casino I figure Death wasn't more than a half a lap behind.

I learned later why they drive like that. The hackie is an employe of the Corporation, like most everybody — but he is an "enterprise-employe," not on wages. Each day he has to take in a certain amount in fares to "make his nut" — the corporation gets all of this. After he has rolled up that fixed number of paid kilometers, he splits the take with the Corporation on all other fares the rest of the day. So he drives like mad to pay off the nut as fast as possible and start making some money himself. Then he keeps on driving fast because he's got to get his while the getting is good.

Uncle Tom says that most people on Earth have much the same deal, except it's done by the year and they call it income tax.

In Xanadu did Kubla Khan
A stately pleasure dome decree —

Dom Pedro Casino is like that. Lavish. Beautiful. Exotic. The arch over the entrance proclaims EVERY DIVERSION IN THE KNOWN UNIVERSE and from what I hear this may well be true. However, all Girdie and I visited were the gaming rooms.

I never saw so much money in my whole life!

A sign outside the gambling sector read:

HELLO, SUCKER!
All Games Are Honest
All Games Have A House Percentage
YOU CAN'T WIN!
So Come On In and Have Fun —
(While We Prove It)
Checks Accepted. All Credit Cards Honored. Free Breakfast and a Ride to your Hilton when You Go Broke. Your Host,
Dom Pedro

I said, "Girdie, there really is somebody named Dom Pedro?"

She shrugged. "He's an employe and that's not his real name. But he does look like an emperor. I'll point him out. You can meet him if you like and he'll kiss your hand. If you like that sort of thing. Come on."

She headed for the roulette tables while I tried to see everything at once. It was like being on the inside

of a kaleidoscope. People beautifully dressed (employes mostly, people dressed every sort of way, from formal evening wear to sports shorts (tourists mostly), bright lights, staccato music, click and tinkle and shuffle and snap, rich hangings, armed guards in comic opera uniforms, trays of drinks and food, nervous excitement, and money—

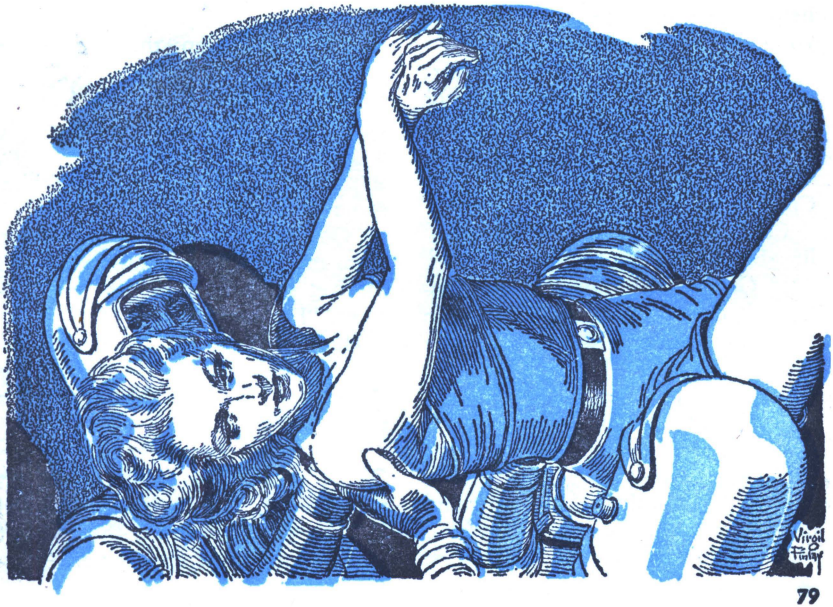
I stopped suddenly, so Girdie stopped. My brother Clark. Seated at a crescent-shaped table at which a beautiful lady was dealing cards. In front of him several tall stacks of chips and an imposing pile of paper money.

I should not have been startled. If you think that a six-year-old boy (or eighteen-year-old if you use their years) wouldn't be allowed to gamble in Venusberg, then you haven't been to Venus. Never mind what we do in Marsopolis, here there are just two requirements to gamble: (a) you have to be alive; (b) you have to have money. You don't have to be able to talk Portuguese nor Ortho, nor any known language. As long as you can nod, wink, grunt or flip a tendril, they'll take your bet.

And your shirt.

No, I shouldn't have been surprised. Clark heads straight for money the way ions head for an electrode. Now I knew where he had ducked out to the first night and where he had been most of the time since.

I went up and tapped him on the



shoulder. He didn't look around at once but a man popped up out of the rug like a genie from a lamp and had me by the arm. Clark said to the dealer, "Hit me," and looked around. "Hi, Sis. It's all right, Joe, she's my sister."

"Okay?" the man said doubtfully, still holding my arm.

"Sure, sure. She's harmless. Sis, this is Josie Mendoza, company cop, on lease to me for tonight. Hi, Girdie!" Clark's voice was suddenly enthusiastic. But he remembered to say, "Joe, slip into my seat and watch the stuff. Girdie, this is swell! You gonna play blackjack? You can have my seat."

(It must be love, dears. Or a high fever.)

She explained that she was about to play roulette. "Want me to come help?" he said eagerly. "I'm pretty good on the wheel, too."

She explained to him gently that she did not want help because she was working on a system, and promised to see him later in the evening. Girdie is unbelievably patient with Clark. I would have —

Come to think of it, she's unbelievably patient with me.

If Girdie has a system for roulette, it didn't show. We found two stools together and she tried to give me a few chips. I didn't want to gamble and told her so, and she explained that I would have to stand up if I didn't. Considering what 84% gee does to my poor feet I bought a few chips of my own and did just what she did, which was to place minimum bets on the colors, or on odd or even. This way you don't win, you don't lose — except that once in a long while the little ball lands on zero and you lose a chip permanently (that "house percentage" the sign warned against).

The croupier could see what we were doing but we actually were gambling and inside the rules. He didn't object. I discovered almost at once that the trays of food circulating and the drinks were absolutely free—to anyone who was gambling. Girdie had a glass of wine. I don't touch alcoholic drinks even on birthdays — and I certainly wasn't going to drink Hi-Ho, after that obnoxious ad — but I ate two or three sandwiches, and asked for and got — they had to go get it — a glass of milk. I tipped the amount I saw Girdie tip.

We had been there over an hour and I was maybe three or four chips ahead when I happened to sit up straight — and knocked a glass out of the hand of a man standing behind me, all over him, some over me.

"Oh, dear!" I said, jumping down from my stool and trying to dab off the wet spots on him with my kerchief. "I'm terribly sorry!"

He bowed. "No harm done to me. Merely soda water. But I fear my clumsiness has ruined milady's gown."

Out of one corner of her mouth Girdie said, "Watch it, kid!" but I answered, "This dress? Huh-uh! If that was just water, there won't be a wrinkle or a spot in ten min-

ute. Nothing but travel clothes."

"You are a visitor to our city? Then permit me to introduce myself less informally than by soaking you to the skin." He whipped out a card. Girdie was looking grim but I rather liked his looks. He was actually not impossibly older than I am (I guessed at twelve Mars years, or say thirty-six of his own — and it turned out he was only thirty-two), dressed in the very elegant Venus evening wear, with cape and stick and formal ruff . . . and the cutest little waxed moustaches.

The card read:

Dexter Kurt Cunha, Stk.

I read it, then reread it, then said, "Dexter *Kurt* Cunha. Are you any relation to—"

"My father."

"Why, I know your father!" —and put out my hand.

Ever had your hand kissed? It makes chill bumps that race up your arm across your shoulders and down the other arm—and of course nobody would ever do it on Mars. This is a distinct shortcoming in our planet and one I intend to correct, even if I have to bribe Clark to institute the custom.

By the time we had names straight Dexter was urging us to share a bite of supper and some dancing with him in the roof garden. But Girdie was balky. "Mr. Cunha," she said, "that is a very handsome calling card. But I am responsible for Podkayne to her uncle, and I would rather see your I.D."

For a split second he looked chilly. Then he smiled warmly at her and said, "I can do better," and held up one hand.

The most imposing old gentleman I have ever seen hurried over. From the medals on his chest I would say that he had won every spelling contest from first grade on. His bearing was kingly and his costume unbelievable. "Yes, Stockholder?"

"Dom Pedro, will you please identify me to these ladies?"

"With pleasure, sir." So Dexter was really Dexter and I got my hand kissed again. Dom Pedro does it with a great flourish but it didn't have quite the same effect. I don't think he puts his heart into it the way Dexter does.

Girdie insisted on stopping to collect Clark—and Clark suffered an awful moment of spontaneous schizophrenia, for he was still winning. But love won out and Girdie went up on Clark's arm, with Josie trailing us with the loot. I must say I admire my brother in some ways. Spending cash money to protect his winnings must have caused even deeper conflict in his soul, if any, than leaving the game while he was winning.

The roof garden is the Brasilia Room and is even more magnificent than the casino proper, with a night-sky roof to match its name, stars and the Milky Way and the Southern Cross such as nobody ever in history actually saw from anywhere on Venus. Tourists were lined up behind a

velvet rope waiting to get in. But not us. It was, "This way, if you please, Stockholder," to an elevated table right by the floor and across from the orchestra.

We danced and we ate foods I've never heard of and I let a glass of champagne be poured for me but didn't try to drink it because the bubbles go up my nose—and wished for a glass of milk or at least a glass of water because some of the food was quite spicy, but didn't ask for it.

But Dexter leaned over me and said, "Poddy, my spies tell me that you like milk."

"I do!"

"So do I. But I'm too shy to order it unless I have somebody to back me up." He raised a finger and two glasses of milk appeared instantly.

But I noticed that he hardly touched his.

However I did not realize I had been hoaxed until later. A singer, part of the floor show, a tall handsome dark girl dressed as a gypsy—if gypsies did ever dress that way, which I doubt, but she was billed as "Romany Rose"—toured the ringside tables singing topical verses to a popular song.

She stopped in front of us, looked right at me and smiled, struck a couple of chords and sang:

"Poddy Fries came to town,
Pretty, winsome Poddy—
Silver shoes and sky blue gown,
Lovely darling Podkayne—

"She has sailed the starry sea,
Pour another toddy!
Lucky Dexter, lucky we!
Drink a toast to Poddy!"

And everybody clapped and Clark pounded on the table and Romany Rose curtseyed to me and I started to cry and covered my face with my hands and suddenly remembered that I mustn't cry because of my makeup and dabbed at my eyes with my napkin and hoped I hadn't ruined it, and suddenly silver buckets with champagne appeared all over that big room and everybody *did* drink a toast to me, standing up when Dexter stood up in a sudden silence brought on by a roll of drums.

I was speechless and just barely knew enough to stay seated myself and nod and try to smile when he looked at me—

—and he broke his glass, just like story tapes, and everybody imitated him and for a while there was crash and tinkle all over the room, and I felt like Ozma just after she stops being Tip and is Ozma again and I had to remember my makeup very hard indeed!

Later on, after I had gulped my stomach back into place and could stand up without trembling, I danced with Dexter again. He is a dreamy dancer—a firm, sure lead without ever turning it into a wrestling match. During a waltz I said, "Dexter? *You* spilled that glass of soda water. On purpose."

"Yes. How did you know?"

"Because it *is* a sky blue dress—or the color that is called 'sky blue,'

for Earth, although I've never seen a sky this color. And my shoes *are* silvered. So it couldn't have been an accident. Any of it."

He just grinned, not a bit ashamed. "Only a little of it. I went first to your hilton. It took almost half an hour to find out who had taken you where and I was furious, because Papa would have been most vexed. But I found you."

I chewed that over and didn't like the taste. "Then you did it because your Daddy told you to. Told you to entertain me because I'm Uncle Tom's niece."

"No, Poddy."

"Huh? Better check through the circuits again. That's how the numbers read."

"No, Poddy. Papa would never order me to entertain a lady—other than formally, at our cottage—lady on my arm at dinner, that sort of thing. What he did do was show me a picture of you and ask me if I wanted to. And I decided I did want to. But it wasn't a very good picture of you, didn't do you justice. Just one snapped by one of the servants of the Tannhauser when you didn't know it—

(I decided I had to find some way to get rid of Maria and Maria, a girl needs privacy. Although this hadn't turned out too dry.)

But he was sill talking."—and when I did find you I almost didn't recognize you, you were so much more dazzling than the photograph. I almost shied off from introducing myself. Then I got the wonderful idea of turning it into an accident. I stood behind you with that glass of soda water almost against your elbow for so long the bubbles all went out of it—and when you did move you bumped me so gently I had to slop it over myself to make it enough of an accident to let me be properly apologetic." He grinned most disarmingly.

"I see," I said. "But, look, Dexter, the photograph was probably a very good one. This isn't my own face." I explained what Girdie had done.

He shrugged. "Then some day wash it for me and let me look at the real Poddy. I'll bet I'll recognize her. Look, dear, the accident was only half fake, too. We're even."

"What do you mean?"

"They named me 'Dexter' for my maternal grandfather, before they found out I was left-handed. Then it was a case of either renaming me 'Sinister,' which doesn't sound too well—or changing me over to right-handed. But that didn't work out either. It just made me the clumsiest man on three planets—" (This while twirling me through a figure eight!)

"—I'm always spilling things, knocking things over. You can follow me by the sound of fractured frangibles. The problem was not to cause an accident, but to keep from spilling that water until the right instant." He grinned that impish grin. "I feel very triumphant about it. But forcing me out of left-handedness did something else to me too. It's made me a natural-born rebel—

You take the if out of gift

if you give if this year

IF has become more and more a factor in the science fiction field. The line-up for 1963 already includes such authors as —Clifford Simak, Robert A. Heinlein, Fred Pohl, Hal Clement, Keith Laumer and many more of your favorites, that are certainly favorites of the person you plan to give this most welcome gift. A special card will announce your gift to the lucky recipient and each issue will remind him of your thoughtfulness.

RUSH YOUR GIFT SUBSCRIPTS TO US.

(These special low prices are good until December 15th)

1 YEAR (6 issues) 1st Subscription **$1.50**

Each additional Year or Subscription **$1.40**

IF Science Fiction • 421 Hudson Street, New York 14, N.Y.

Please enter Special Gift Subscriptions to the following and send gift card announcements.

I enclose .....

Name .....
Address.....
City ..... State .....
1 year ..... 2 years .....Price .....
Sign Card .....

Name .....
Address.....
City ..... State .....
1 year ..... 2 years .....Price .....
Sign Card .....

Name .....
Address.....
City ..... State .....
1 year ..... 2 years .....Price .....
Sign Card .....

Name .....
Address.....
City ..... State .....
1 year ..... 2 years .....Price .....
Sign Card .....

Name .....
Address.....
City ..... State .....
1 year ..... 2 years .....Price .....
Sign Card .....

Name .....
Address.....
City ..... State .....
1 year ..... 2 years .....Price .....
Sign Card .....

and I think you are one, too."

"I certainly am. I am expected to be Chairman of the Board someday, like my papa and my grandpapa. But I shan't. I'm going to space."

"Oh! So am I!" We stopped dancing and chattered about spacing. Dexter intends to be an explorer captain just like me. Only I didn't quite admit that my plans for spacing included pilot and master; it is never well in dealing with a male to let him know that you think *you* can do whatever it is he can do best or wants to do most. But Dexter intends to go to Cambridge and study paramagnetics and Davis mechanics and be ready when the first true star ships are ready. Goodness!

"Poddy, maybe we'll even do it together. Lots of billets for women in star ships."

I agreed that that was so.

"But let's talk about you. Poddy, it wasn't that you looked so much better than your picture."

"No?" (I felt vaguely disappointed.)

"No. Look. I know your background, I know you've lived all your life in Marsopolis. Me, I've been everywhere. Sent to Earth for school, took the Grand Tour while I was there, been to Luna, of course, and all over Venus—and to Mars. When you were a little girl. I wish I had met you then."

"Thank you." (I was beginning to feel like a poor relation.)

"So I know exactly what a honky-tonk town Venusberg is . . . and what a shock it is to people the first time. Especially anyone reared in a gentle and civilized place like Marsopolis. Oh, I love my home town but I know what it is—I've been other places. Poddy? Look at me, Poddy. The thing that impressed me about you was your aplomb."

"Me?"

"Your amazing and perfect savoir-faire . . . under conditions I *knew* were strange to you. Your uncle has been everywhere, and Girdie, I take it, has been, too. But lots of strangers here, older women, become quite giddy when first exposed to the fleshpots of Venusberg. But you carry yourself like a queen."

(This man I liked! Definitely. After years and years of "Beat it, runt!" it does something to a woman to be told she has savoir-faire. I didn't even stop to wonder if he told all the girls that—I didn't want to!)

We didn't stay much longer. Girdie made it plain that I had to get my "beauty sleep." So Clark went back to his game (Jose appeared out of nowhere at the right time—and I thought of telling Clark he had better git fer home, too, but I decided that wasn't "savoir-faire" and anyhow he wouldn't have listened) and Dexter took us to the Tannhauser in his Papa's Rolls (or maybe his own, I don't know) and bowed over our hands and kissed them as he left us.

I was wondering if he would try to kiss me good night and had made up my mind to be cooperative about it. But he didn't try. Maybe it's not a Venusberg custom, I don't know.

Girdie went up with me because I wanted to chatter. I bounced my-

self on a couch and said, "Oh, Girdie, it's been the most wonderful night of my life!"

"It hasn't been a bad night for me," she said quietly. "It certainly can't hurt me to have met the son of the Chairman of the Board." It was then that she told me that she was staying on Venus.

"But, Girdie—*why?*"

"Because I'm broke, dear. I need a job."

"You? But you're rich. Everybody knows that."

She smiled. "I *was* rich, dear. But my last husband went through it all. He was an optimistic man and excellent company. But not nearly the businessman he thought he was. So now Girdie must gird her loins and get to work. Venusberg is better than Earth for that. Back home I could either be a parasite on my old friends until they got sick of me—the chronic house guest. Or get one of them to give me a job that would really be charity, since I don't know anything. Or disappear into the lower depths and change my name. Here, nobody cares and there is always work for anyone who wants to work. I don't drink and I don't gamble. Venusberg is made to order for me."

"But what will you *do?*" It was hard to imagine her as anything but the rich society girl whose parties and pranks were known even on Mars.

"Croupier, I hope. They make the highest wages . . . and I've been studying it. I've been practicing dealing, too—for blackjack, or faro, or chemin de fer. But I'll probably have to start as a change girl."

"Change girls? Girdie, would you dress that way?"

She shrugged. "My figure is still good . . . and I'm quite quick at counting money. It's honest work, Poddy. It has to be. Those change girls often have as much as ten thousand on their trays."

I decided I had fubbed and shut up. I guess you can take the girl out of Marsopolis but you can't quite take Marsopolis out of the girl. Those change girls practically don't wear anything but the trays they carry money on. But it certainly was honest work and Girdie has a figure that had all the junior officers in the *Tricorn* running in circles and dropping one wing. I'm sure she could have married any of the bachelors and insured her old age thereby with no effort.

Isn't it more honest to work? And, if so, why shouldn't she capitalize her assets?

She kissed me goodnight soon after and ordered me to go right to bed and to sleep. Which I did—all but sleep. Well, she wouldn't be a change girl long; she'd be a croupier in a beautiful evening gown . . . and saving her wages and her tips and someday she would be a stockholder, one share anyway, which is all anybody needs for old age in the Venus Corporation. And I would come back and visit her when I was famous.

I wondered if I could ask Dexter to put in a good word for her to Dom Pedro?

Then I thought about Dexter—

I know this can't be love; I was in love once and it feels entirely different. It hurts.

This just feels grand.

X

I hear that Clark has been negotiating to sell me (black market, of course) to one of the concessionaires who ship wives out to contract colonists in the bush. Or so they say. I do not know the truth. But There Are Rumors.

What infuriates me is that he is said to be offering me at a ridiculously low price!

But in truth it is this very fact that convinces me that it is just a rumor, carefully planted by Clark himself, to annoy me—because, while I would not put it past Clark to sell me into what is tantamount to chattel slavery and a Life of Shame if he could get away with it, nevertheless he would wring out of the sordid transaction every penny the traffic would bear. This is certain.

It is much more likely that he is suffering a severe emotional reaction from having opened up and become almost human with me the other night—and therefore found it necessary to counteract it with this rumor in order to restore our relations to their normal, healthy, cold-war status.

Actually I don't think he could get away with it, even on the black market, because I don't have any contract with the Corporation. Even if he forged one, I could always manage to get a message to Dexter, and Clark knows this. Girdie tells me that the black market in wives lies mostly in change girls or clerks or hilton chambermaids who haven't managed to snag husbands in Venusburg (where men are in short supply) and are willing to cooperate in being sold out back (where women are scarce) in order to jump their contracts. They don't squawk and the Corporation overlooks the matter.

Most of the bartered brides, of course, are single women among the immigrants, right off a ship. The concessionaires pay their fare and squeeze whatever cumshaw they can out of the women themselves and the miners or ranchers to whom their contracts are assigned. All Kosher.

Not that I understand it. I don't understand *anything* about how this planet really works. No laws, just Corporate regulations. Want to get married? Find somebody who claims to be a priest or a preacher and have any ceremony you like—but it hasn't any legal standing because it is not a contract with the Corporation. Want a divorce? Pack your clothes and get out, leaving a note or not as you see fit. Illegitimacy? They've never heard of it. A baby is a baby and the Corporation won't let one want, because that baby will grow up and be an employe and Venus has a chronic labor shortage. Polygamy? Polandry? Who cares? The Corporation doesn't.

Bodily assault? Don't try it in Venusberg. It is the most thoroughly policed city in the system—violent

crime is bad for business. I don't wander around alone in some parts of Marsopolis, couth as my home town is, because some of the old sand rats are a bit sun struck and not really responsible. But I'm perfectly safe alone anywhere in Venusberg. The only assault I risk is from super-salesmanship.

(The bush is another matter. Not the people so much, but Venus itself is lethal—and there is always a chance of encountering a Venerian who has gotten hold of a grain of happy dust. Even the little wingety fairies are bloodthirsty if they sniff happy dust.)

Murder? This is a *very* serious violation of regulations. You'll have your pay checked for years and years and years to offset both that employe's earning power for what would have been his working life . . . and his putative value to the Corporation, all calculated by the company's actuaries who are widely known to have no hearts at all, just liquid helium pumps.

So, if you are thinking of killing anybody on Venus, *don't do it!* Lure him to a planet where murder is a social matter and all they do is hang you or something. No future in it on Venus.

There are three classes of people on Venus: stockholders, employes and a large middle ground. Stockholder-employes (Girdie's ambition), enterprise employes (taxi drivers, ranchers, prospectors, some retailers, etc.)—and of course future employes, children still being educated. And there are tourists. But tourists aren't people. They have more the status of steers in a cattle pen—valuable assets to be treated with great consideration but no pity.

A person from out-planet can be a tourist for an hour or a lifetime—just as long as his money holds. No visa, no rules of any sort, everybody welcome—but you must have a return ticket and you can't cash it in until *after* you sign a contract with the Corporation. If you do. I wouldn't.

I still don't understand how the system works even though Uncle Tom has been very patient in explaining. But he says he doesn't understand it either. He calls it "corporate fascism"—which explains nothing—and says that he can't make up his mind whether it is the grimmest tyranny the human race has ever known . . . or the most perfect democracy in history.

He says that nothing here is as bad in many ways as the conditions over 90% of the people on Earth endure—and that it isn't even as bad in creature comforts and standards of living as lots of people on Mars, especially the sand rats, even though we never knowingly let anyone starve for lack of medical attention.

I Just Don't Know. I can see now that all my life I have simply taken for granted the way we do things on Mars. Oh, sure, I learned about other systems in school—but it didn't soak in. Now I am beginning to grasp emotionally that There Are Other Ways Than Ours . . . and that people can be happy under them.

Take Girdie. I can see why she didn't want to stay on Earth, not the way things had changed for her. But she could have stayed on Mars; she's just the sort of high class immigrant we want. But Mars didn't tempt her at all.

This bothered me because (as you may have gathered) I think Mars is just about perfect. And I think Girdie is just about perfect.

Yet a horrible place like Venusberg is what she picked. She says it is a Challenge.

Furthermore Uncle Tom says that she is Dead Right; Girdie will have Venusberg eating out of her hand in two shakes and be a stockholder before you can say Extra Dividend.

I guess she's right. I felt awfully sorry for Girdie when I found out she was broke. "I wept that I had no shoes—till I met a man who had no feet." Like that, I mean. I've never been broke, never missed any meals, never worried about the future—yet I used to feel sorry for Poddy when money was a little tight around home and I couldn't have a new party dress. Then I found out that the rich and glamorous Miss FitzSnugglie (I still won't use her right name, it wouldn't be fair) had only her ticket back to Earth and had borrowed the money for that. I was so sorry it hurt.

But now I'm beginning to realize that Girdie has her "feet" no matter what, and will always land on them.

She has indeed been a change girl, for two whole nights—and asked me, please, to see to it that Clark did not go to Dom Pedro Casino those nights. I don't think she cared at all whether or not I saw her . . . but she knows what a horrible case of puppy love Clark has on her and she's just so sweet and good all through that she did not want to risk making it worse and/or shocking him.

But she's a dealer now and taking lessons for croupier, and Clark goes there every night. But she won't let him play at her table. She told him point blank that he could know her socially or professionally, but not both—and Clark never argues with the inevitable. He plays at some other table and tags her around whenever possible.

Do you suppose that my kid brother actually does possess psionic powers? I know he's not a telepath, else he would have cut my throat long since. But he is still winning.

Dexter assures me that (a) the games are absolutely honest, and (b) that no one can possibly beat them, not in the long run, because the house collects its percentage no matter what. "Certainly you can win, Poddy," he assured me. "One tourist came here last year and took home over half a million. We paid it happily—and advertised it all over Earth—and still made money the very week he struck it rich. Don't you even suspect that we are giving your brother a break. If he keeps it up long enough, we will not only win it all back but take every buck he started with. If he's as smart as you say he is, he'll quit while he's ahead. But most people aren't that

smart—and Venus Corporation never gambles on anything but a sure thing."

Again, I don't know. But it was both Girdie and winning that caused Clark to become almost human with me. For a while.

It was last week, the night I met Dexter—and Girdie told me to go to bed and I did but I couldn't sleep. I left my door open so that I could hear Clark come in—or if I didn't, phone somebody and have him chased home because, while Uncle Tom is responsible for both of us, I'm responsible for Clark and always have been. I wanted Clark to be home and in bed before Uncle Tom got up. Habit, I guess.

He did come sneaking in about two hours after I did and I *psst'd* to him and he came into my room.

You never saw a six-year-old boy with so much money!

Josie had seen him to our door, so he said. Don't ask me why he didn't put it in the Tannhauser's vault. Or do ask me. I think he wanted to fondle it.

He certainly wanted to boast. He laid it out in stacks on my bed, counting it and making sure that I knew how much it was. He even shoved a pile toward me. "Need some, Poddy? I won't even charge you interest. Plenty more where this came from."

I was breathless. Not the money, I didn't need any money. But the offer. There had been times in the past when Clark has lent me money against my allowance—and charged me exactly 100% interest come allowance day. Till Daddy caught and spanked us both.

So I thanked him most sincerely and hugged him. Then he said, "Sis, how old would you say Girdie is?"

I began to understand his off-the-curve behavior. "I really couldn't guess," I answered carefully. (Didn't need to guess. I knew.) "Why don't you ask her?"

"I did. She just smiled at me and said that women don't have birthdays."

"Probably an Earth custom," I told him and let it go at that. "Clark, how in the world did you win so much money?"

"Nothing to it," he said. "All those games, somebody wins, somebody loses. I just make sure I'm one who wins."

"But how?"

He just grinned his worst grin.

"How much money did you start with?"

He suddenly looked guarded. But he was still amazingly mellow, for Clark, so I pushed ahead. I said, "Look, if I know you, you can't get all your fun out of it unless *somebody* knows, and you're safer telling me than anyone else. Because I've never told on you yet. Now have I?"

He admitted that this was true by not answering. It is true. When he was small enough, I used to clip him one occasionally. But I never tattled on him. Lately clipping him has become entirely too dangerous; he can give me a fat lip quicker than I can give him one. But I've

never tattled on him. "Loosen up," I urged him. "I'm the only one you dare boast to. How much were you paid to sneak those three kilos into the *Tricorn* in my baggage?"

He looked very smug. "Enough."

"Okay, I won't pry any further about that. But what was it you smuggled? You've had me utterly baffled."

"You would have found it if you hadn't been so silly anxious to explore the ship. Poddy, you're stupid. You know that, don't you? You're as predictable as the law of gravity. I can *always* outguess you."

I didn't get mad. If Clark gets you sore, he's got you.

"Guess maybe," I admitted. "Are you going to tell me what it was? Not happy dust, I hope?"

"Oh, no!" he said and looked shocked. "You know what they do to you for happy dust around here? They turn you over to natives who are hopped up with it, that's what they do—and then they don't even have to bother to cremate you."

I shuddered and returned to the subject. "Going to tell me?"

"Mmm . . . "

"I swear by Saint Podkayne Not to Tell." This is my own private oath, nobody else would or could use it.

"Better not," he warned me. "You won't like it."

"By Saint Podkayne!" (and I should have kept my lip zipped.)

"Okay," he said. "But you swore it. A bomb."

"A *what?*"

"Oh, not much of a bomb. Just a little squeezer job. Total destruction not more than a kilometer. Nothing much."

To Be Concluded

ROAD STOP

by David Mason

It was like any other car on the road. It was automatic, self-contained—and eternal!

The highway stretched away in ruler-straight perspective toward both horizon's, black and shining in the sun like a river of ink. Beside it, the bright pastel buildings of Rest Stop 25 stood among the green trees. Occasionally a car shot past, a flash of metal and a hiss of split wind; but the road was one which was used more often at night, and was nearly empty in the afternoon.

Sam was the only attendant on duty. Stop 25 needed only two human attendants, even at its busiest hours. He sat, staring out at the highway, his elbows on the lunch counter, his round face blank, but his mouth set tightly. The phone at his elbow emitted a small grunting noise.

"You still there?" the phone voice said inquiringly.

"Yeah." Sam said, still staring at the highway.

"Well . . . " The voice paused. "Look, it might not come your way. It usually turns west at the New Britain intersection."

"Not always." Sam said. "It went by here once before."

"It almost never stops, anyway," the voice said firmly. "It won't stop."

"Some times it does," Sam said.

"It doesn't have to."

Sam shrugged and said nothing.

"Okay, then," the voice said. "I called you about it, anyway."

"Thanks."

Sam turned away, still watching the road.

Far off a speck of metal gleamed, growing larger. The distant high sound of brakes began, as a car decelerated, coming toward the Stop.

It was just an ordinary car, Sam

told himself. That other car was still hundreds of miles away. But his hands were damp as he watched it grow larger.

It was an ordinary Talman sedan, with two people in it. It swung into the Stop's parking area, and its doors slid open smoothly. A small red light flashed on its arched front. The repair signal. In response the doors of the Repair shop opened. The Talman waited, as a man and a woman emerged from its padded interior and moved slowly into the Repair shop. The doors closed behind it.

The couple came toward the restaurant, where Sam stood waiting.

"Hi," the man said to Sam.

"Afternoon." Sam moved to the counter. "Something to eat while you're waiting, folks?"

The tall, dark girl glanced out at the closed doors of the Repair shop.

"How long's that car going to take?" she asked in a tired voice. "I wanted to get home tonight."

"Not long," Sam said. "It didn't look like anything complicated."

"How can you tell?" the man asked, sitting down. "It could take all night."

"Like something to eat while you're waiting?" Sam asked.

The woman stared at the lunch racks critically.

"I never like these places to eat in," the woman said, curling her lip. "You never know how long the food's been stored in the robot."

"Oh, hell, Grace," the man said wearily. To Sam he gave an apologetic shrug. "Just coffee."

"Well, you don't know," the woman insisted. "I mean . . . " She watched Sam drawing the coffee into a cup. "I used to cook a lot, by hand, till Jack had the autokitchen put in. He never had any stomach trouble till then. It's getting so everything's . . . oh, I don't know. It's all out of reach. You don't know what's happening any more. Like the car."

"I wish I knew what she's talking about half the time." Jack said, blowing on his coffee. Sam leaned on the counter, looking past the couple toward the empty road.

"I know what the lady means," Sam said, almost to himself. "You get to thinking . . . well, I can remember when people used to drive their own cars. Themselves. Steering and everything, except on the biggest highways. And everything got done with people. People made things, and cooked food, and grew plants. Everybody was busy all the time. It was better then."

The man called Jack shrugged. "Sure, sure. Everybody always talks about the good old days. But I don't see many of 'em going to live in the woods. Like Grace—she says she doesn't like the autokitchen, but she uses it."

"It saves time," Grace said. I guess I will have coffee, too, mister."

"It saves time, she says," Jack said. "For what? She's got too much time now."

"I wonder what it must have been like in the old days, here," Grace said vaguely, staring around the lunchroom. "Everybody running in

and out. All the drivers—trucks, with men in them, the way you read about it in the historical novels. Men that drove their own cars, in all kinds of weather . . . gee."

"Just like on TV," Sam said, grinning.

"I hope we get the car out of there pretty soon," Jack said anxiously. He glanced out toward the silent garage. "I always wonder what would happen if the machinery stuck, or something. How would you ever get your car out?"

"It doesn't get stuck," Sam said. A peculiar look crossed his face as he added, "Not any more."

"Did it ever?"

Sam shrugged. "Oh, well, you know twenty or thirty years ago all this automatic stuff wasn't quite so good as it is now. Cars, repair shops . . . things went wrong, sometimes. Like . . . like the Traveler."

"The Traveler?" The woman looked up. "Oh, that's just a ghost story. Like the Flying Dutchman. Isn't it?"

The lunchroom was completely silent. Sam was no longer paying any attention to the couple sitting at the counter. He was close to the big window, standing stiffly, feet apart, like an admiral on a ship's bridge, his eyes studying the empty horizon. There, where the lines of the road met with the precision of a drawing-board exercise in perspective, he thought he saw a fleck of light.

"It isn't when it goes past," Sam said, in a quiet tight voice. He talked at the window, his back to the other two, his words meant mostly for himself.

"It's not its going by. That doesn't bother me," he repeated. "It came by my old place five or six times, I remember. That's why I finally asked to be transferred out here, where it hardly ever goes by. But I could have gotten used to it. I mean, you don't have to look at it, or anything. It's just another car. Old, sure, but there's no difference. A car goes by, that's all. Only . . . "

"You mean it's real?" the woman asked, in a low voice.

Her husband's eyes were looking out, toward the empty road, following Sam's look.

"The Traveler," he said, without looking at his wife. "Sure, it's real. Why'd you think they don't make that model of car any more? It's real. I knew somebody who saw it, once."

"There might even be two or three Travelers," Sam said, watching the distant glitter of light. There was certainly a car coming. Just a car . . . although it was still too far away to tell for sure.

"A haunted car!" the woman said, her eyes wider. "Gee!"

"It isn't a haunted car," her husband said. "It's just one of the earliest makes of automatic highway cars. Everything automatic, steering, destination set . . . just like any car is, nowadays. Only it wasn't quite perfect, somehow."

"They got into their car," Sam said, his eyes picking out distant, microscopic details. The high flaring fins, the double headlamps . . .

lit up, although it was broad daylight on the road. He knew what the rest would be. It was moving so slowly. But it always moved slowly, barely thirty miles an hour. As if somebody wanted you to look and see . . .

"They just got in, the way anybody would do," Sam said. "They set a destination, and the windows closed up, and the airconditioner went on, and the car went out on the road."

"Only it never got there," the other man said. "Wherever it was going to go."

"But . . . " the woman looked puzzled. "Wouldn't anybody stop it? I mean, wouldn't it run out of fuel, or . . . well, how did the people in it get out?"

"It does just what any car does," her husband told her. "It gets fuel when it needs it. You can't just stop a robot control device. Not till it's good and ready."

"But the people in it," she said. "They'd starve, or something . . . "

The car called the Traveler, rolling at the stately thirty miles an hour it always held, was coming down the road now, and the two men stood, watching. The woman, a little behind them, watched too, her face growing whiter. No one said anything as the old fashioned car rolled by, straight and steady down the highway, holding the center of the lane as sharply as it always did.

There was a film of dust inside the windows, though the Traveler was clean and shining outside. But the film did hide the white bone faces, the despairing hands that had long ago stopped trying to break through those closed windows.

"They never did get out," the man named Jack said, as the Traveler rolled on, growing smaller along the endless road.

"I don't mind it when it goes past," Sam said, his voice thinner edged. "I really don't. It's just a car. Things like that used to happen. I mean, it's a car. Even when it stops to get gas, I don't have to pay any attention."

He looked at the couple, his mouth loose. "As long as it just goes on. That's all right. But I keep thinking some day it'll stop. And the door will open. And maybe . . . maybe they'll want lunch."

He giggled uncontrollably, and then choked it back.

Outside, the big hangar doors of the repair shop opened. The car that had been inside appeared; it moved out and stopped, its doors open invitingly.

"Your car's ready now," Sam told the couple. "So long, folks. Have a nice trip." END

FORTRESS SHIP

by Fred Saberhagen

Huge as an island, mighty as a squadron of dreadnaughts, old as time, the ship of the aliens was out to destroy them!

The machine was a vast fortress, containing no life, set by its long-dead masters to destroy anything that lived. It and a hundred like it were the inheritance of Earth from some war fought between unknown interstellar empires, in some time that could hardly be connected with any Earthly calendar.

One such machine could hang over a planet colonized by men and in two days pound the surface into a lifeless cloud of dust and steam, a hundred miles deep. This particular machine had already done just that.

It used no predictable tactics in its dedicated, unconscious war against life. The ancient, unknown gamesmen had built it as a random factor, to be loosed in the enemy's territory to do what damage it might. Men thought its plan of battle was chosen by the random disintegrations of atoms in a block of some long-lived isotope buried deep inside it, and so was not even in theory predictable by opposing brains, human or electronic.

Men called it a berserker.

Del Murray, sometime computer specialist, had called it other names than that; but right now he was too busy to waste breath, as he moved in staggering lunges around the little cabin of his one-man fighter, plugging in replacement units for equipment damaged by the last near-miss of a small berserker missile. An animal resembling a large dog with an ape's forelegs moved about the cabin too, carrying in its nearly human hands a supply of emergency sealing patches. The cabin air was full of haze. Wherever movement of the haze showed a leak

to an unpressurized part of the hull, the dog-ape moved to skillfully apply a patch.

"Hello, Foxglove!" the man shouted, hoping his radio was again in working order.

"Hello, Murray, this is Foxglove," said a sudden loud voice in the cabin. "How far did you get?"

Del was too weary to show much relief that his communications were open again. "I'll let you know in a minute. At least it's stopped shooting at me for a while. Move, Newton." The alien animal, pet and ally, called an *aiyan,* moved away from the man's feet and kept single-mindedly looking for leaks.

After another minute's work Del could strap his body into the deep-cushioned command chair again, with something like an operational panel before him. That last near-miss had sprayed the whole cabin with fine penetrating splinters. It was remarkable that man and *aiyan* had come through unwounded.

His radar working again, Del could say: "I'm about ninety miles out from it, Foxglove. On the opposite side from you." His present position was what he had been trying to achieve since the battle had begun.

The two Earth ships and the berserker were half a light year from the nearest sun. The berserker could not leap out of normal space, toward the defenseless colonies on the planets of that sun, while the two ships stayed close to it. There were only two men aboard Foxglove. Though they had more machinery working for them than did Del, both manned ships were mites compared to their opponent.

If a berserker machine like this one, not much smaller in cross-section than New Jersey, had drifted in a century earlier and found men crowded on one planet, there could have been no real struggle and no human survivors. Now, though the impersonal enemy swarmed through the galaxy, men could rise up in a cloud to meet them.

Del's radar showed him an ancient ruin of metal, spread out for a hundred miles before him. Men had blown holes in it the size of Manhattan Island, and melted puddles of slag as big as lakes upon its surface.

But the berserker's power was still enormous. So far no man had fought it and survived. Now, it could squash Del's little ship like a mosquito; it was wasting its unpredictable subtlety on him. Yet there was a special taste of terror in the very indifference of it. Men could never frighten this enemy, as it frightened them.

Earthmen's tactics, worked out from bitter experience against other berserkers, called for a simultaneous attack by three ships. Foxglove and Murray made two. A third was supposedly on the way, but still about eight hours distant, moving at C-plus velocity, outside of normal space and so out of communication with the others. Until it arrived, Foxglove and Murray must hold the berserker at bay, while it brooded unguessable schemes.

It might attack either ship at any

moment, or it might seek to disengage. It might wait hours for them to make the first move—though it would certainly fight if the men attacked it. It had learned the language of Earth—it might try to talk with them. But always, ultimately, it would seek to destroy them and every other living thing it met. That was the basic command given it by the ancient warlords.

A thousand years ago, it would have easily swept ships of the type that now opposed it from its path, whether they carried fusion missiles or not. Now, it was no doubt in some electrical way conscious of its own weakening by accumulated damage. And perhaps in long centuries of fighting its way across the galaxy it had learned to be wary.

Now, quite suddenly, Del's detectors showed forcefields forming in behind his ship. Like the encircling arms of a great bear they blocked his path away from the enemy. He waited for some deadly blow, with his hand trembling over the red button that would salvo his atomic missiles at the berserker—but if he attacked alone, or even with Foxglove, the infernal machine would parry their missiles, crush their ships and go on to destroy another helpless planet. Three ships were needed to attack. The red firing button was now only a last desperate resort.

Del was reporting the forcefields to Foxglove when he felt the first hint in his mind of another attack.

"Newton!" he called sharply, leaving the mike to Foxglove open. They would hear and understand what was going to happen.

The *aiyan* bounded instantly from its combat couch to stand before Del as if hypnotized, all attention riveted on the man. Del sometimes bragged: "Show Newton a drawing of different colored lights, convince him it represents a particular control panel, and he'll push buttons or whatever you tell him, until the real panel matches the drawing."

But no *aiyan* had the human ability to learn and to create on an abstract level; which was why Del was now going to put Newton in command of his ship.

He switched off the ship's computers—they were going to be as useless as his own brain, under the attack he felt gathering—and said to Newton: "Situation Zombie."

The animal responded instantly as it had been trained, seizing Del's hands with firm insistence, and dragging them one at a time down beside the command chair to where the fetters had been installed.

Hard experience had taught men something about the berserkers' mind weapon, although its principles of operation were still unknown. It was slow in its onslaught, and its effects could not be steadily maintained for more than about two hours, after which a berserker was evidently forced to turn it off for an equal time. But while in effect, it robbed any human or electronic brain of the ability to plan or to predict—and left it unconscious of its own incapacity.

It seemed to Del that all this had happened before, maybe more than once. Newton, that funny fellow, had gone too far with his pranks; he had abandoned the little boxes of colored beads that were his favorite toys, and was moving the controls around at the lighted panel. Unwilling to share the fun with Del, he had tied the man to his chair somehow. Such behavior was really intolerable, especially when there was supposed to be a battle in progress. Del tried to pull his hands free, and called to Newton.

Newton whined earnestly and stayed at the panel.

"Newt, you dog. Come, lemme loose. I know what I have to say: Four score and seven . . . hey, Newt, where're your toys? Lemme see your pretty beads." There were hundreds of tiny boxes of the varicolored beads, leftover trade goods that Newton loved to sort out and handle. Del peered around the cabin, chuckling a little at his own cleverness. He would get Newton distracted by the beads, and then . . . the vague idea faded into other crackbrained grotesqueries.

Newton whined now and then but stayed at the panel moving controls in the long sequence he had been taught, taking the ship through the feinting, evasive maneuvers that might fool a berserker into thinking that it was still competently manned. Newton never put a hand near the big red button. Only if he felt deadly pain himself, or found a dead man in Del's chair, would he reach for that.

"Ah, roger, Murray," said the radio from time to time, as if acknowledging a message. Sometimes Foxglove added a few words or numbers that might have meant something. Del wondered what the talking was about.

At last he understood that Foxglove was trying to help maintain the illusion that there was still a competent brain in charge of Del's ship. The fear-reaction came when he began to realize that he had once again lived through the effect of the mind-weapon. The brooding berserker, half genius, half idiot, had forborne to press the attack when success would have been certain. Perhaps deceived, perhaps following the strategy that avoided predictability at almost any cost.

"Newton." The animal turned, hearing a change in his voice. Now Del could say the words that would tell Newton it was safe to set his master free, a sequence too long for anyone under the mindweapon to recite.

"—shall not perish from the Earth," he finished. With a yelp of joy Newton pulled the fetters from Del's hands. Del turned instantly to the radio.

"Effect has evidently been turned off. Foxglove," said Del's voice through the speaker in the cabin of the larger ship.

The Commander let out a sigh. "He's back in control!"

The Second Officer—there was no Third—said: "That means we've got some kind of fighting chance,

for the next two hours. I say let's attack now!"

The Commander shook his head, slowly but without hesitation. "With two ships, we don't have any real chance. Less than four hours until Gizmo gets here. We have to stall until then, if we want to win."

"It'll attack the next time it gets Del's mind scrambled! I don't think we fooled it for a minute . . . we're out of range of the mindbeam here, but Del can't withdraw now. And we can't expect that *aiyan* to fight his ship for him. We'll really have no chance, with Del gone."

The Commander's eyes moved ceaselessly over his panel. "We'll wait. We can't be sure it'll attack within—"

The berserker spoke suddenly, its radioed voice plain in the cabins of both ships: "I have a proposition for you, little ship." Its voice had a cracking, adolescent quality, because it strung together words and syllables recorded from the voice of human prisoners of both sexes and different ages, from whom it had learned the language. There was no reason to think they had been kept alive after that.

"Well?" Del's voice sounded tough and capable by comparison.

"I have invented a game which we will play," it said. "If you play well enough, I will not kill you right away."

"Now I've heard everything," murmured the Second Officer.

After three thoughtful seconds the Commander slammed a fist on the arm of his chair. "It means to test his learning ability, to run a continuous check on his brain while it turns up the power of the mindbeam and tries different modulations. If it can make sure the mindbeam is working, it'll attack instantly. I'll bet my life on it. That's the game it's playing this time."

"I will think over your proposition," said Del's voice coolly.

"Very well," answered the berserker.

The Commander said: "It's in no hurry to start. It won't be able to turn on the mindbeam again for almost two hours."

"But we need another two hours beyond that."

Del's voice said: "Describe the game you want to play."

"It is a simplified version of the human game called checkers."

The Commander and the Second looked at each other, neither able to imagine Newton able to play checkers. Nor could they doubt that Newton's failure would kill them within a few hours, and leave another planet open to destruction.

After a minute's silence, Del's voice asked: "What'll we use for a board?"

"We will radio our moves to one another," said the berserker equably. It went on to describe a checkers-like game, played on a smaller board with less than the normal number of pieces. There was nothing very profound about it; but of course playing would seem to require a functional brain, human or electronic, able to plan and to predict.

"If I agree to play," said Del

slowly, "how'll we decide who gets to move first?"

"He's trying to stall," said the Commander, gnawing a thumbnail. "We won't be able to offer any advice, with that thing listening. Oh, stay sharp, Del boy!"

"To simplify matters," said the berserker. "I will move first in every game."

Del could look forward to another hour free of the mind-weapon when he finished rigging the checker board. When the pegged pieces were moved, appropriate signals would be radioed to the berserker; lighted squares on the board would show him where its pieces were moved. If it spoke to him while the mindweapon was on, Del's voice would answer from a tape, which he had stocked with vaguely agressive phrases, such as: "Get on with the game," or "Do you want to give up now?"

He hadn't told the enemy how far along he was with his preparations because he was still busy with something the enemy must not know—the system that was going to enable Newton to play a game of simplified checkers.

Del gave a soundless little laugh as he worked, and glanced over to where Newton was lounging on his couch, clutching toys in his hands as if he drew some comfort from them. This scheme was going to push the *aivan* near the limit of his ability, but Del saw no reason why it should fail.

Del had completely analyzed the miniature checker-game, and diagrammed every position that Newton could possibly face—playing only even-numbered moves, thank the random berserker for that specification!—on small cards. Del had discarded some lines of play that would lead from some poor early moves by Newton, further simplifying his job. Now, on a card showing each possible remaining position, Del indicated the best possible move with a drawn-in arrow. Now he could quickly teach Newton to play the game by looking at the appropriate card and making the move shown by the arrow. The system was not perfect, but—

"Oh, oh," said Del, as his hands stopped working and he stared into space. Newton whined at the tone in his voice.

Once Dal had sat at one board in a simultaneous chess exhibition, one of sixty players opposing the world champion, Blankenship. Del had held his own into the middle game. Then, when the great man paused again opposite his board, Del had shoved a pawn forward, thinking he had reached an unassailable position and could begin a counterattack. Blankenship had moved a rook to an innocent-looking square and strolled on to the next board—and then Del had seen the checkmate coming at him, four moves away but one move too late for him to do anything about it.

The Commander suddenly said a foul phrase in a loud distinct voice. Such conduct was extremely

rare, and the Second Officer looked around in surprise. "What?"

"I think we've had it." The Commander paused. "I hoped that Murray could set up some kind of system over there, so that Newton could play the game—or appear to be playing it. But it won't work. Whatever system Newton plays by rote will always have him thinking the same move in the same position. It may be a perfect system—but a man doesn't play any game that way, damn it. He makes mistakes, he changes strategy. Even in a game this simple there'll be room for that. Most of all, a man *learns* a game as he plays it. He gets better as he goes along. That's what'll give Newton away, and that's what our bandit wants. It's probably heard about *aiyans*. Now as soon as it can be sure it's facing a dumb animal over there, and not a man or computer."

After a little while the Second Officer said: "I'm getting signals of their moves. They've begun play. Maybe we should've rigged up a board so we could follow along with the game."

"We better just be ready to go at it when the time comes." The Commander looked hopelessly at his salvo button, and then at the clock that showed two hours must pass before Gizmo could reasonably be hoped for.

Soon the Second Officer said: "That seems to be the end of the first game; Del lost it, if I'm reading their scoreboard signal right." He paused. "Sir, here's that signal we picked up the last time it turned the mindbeam on. Del must be starting to get it again."

There was nothing for the Commander to say. The two men waited silently for the enemy's attack, hoping only that they could damage it in the seconds before it would overwhelm them and kill them.

"He's playing the second game," said the Second Officer, puzzled. "And I just heard him say 'Let's get on with it.'"

"His voice could be recorded. He must have made some plan of play for Newton to follow; but it won't fool the berserker for long. It can't."

Time crept unmeasurably past them.

The Second said: "He's lost the first four games. But he's *not* making the same moves every time. I wish we'd made a board . . . "

"Shut up about the board! We'd be watching it instead of the panel. Now stay alert, Mister."

After what seemed a long time, the Second said: "Well, I'll be!"

"What?"

"Our side got a draw in that game."

"Then the beam can't be on him. Are you sure . . . "

"It is! Look, here, the same indication we got last time. It's been on him the better part of an hour now, and getting stronger."

The Commander stared in disbelief; but he knew and trusted his Second's ability. And the panel indications were convincing. He said: "Then someone — or something — with no functioning mind is learning how to play a game, over there.

Ha, ha," he added, as if trying to remember how to laugh.

The berserker won another game. Another draw. Another win for the enemy. Then three drawn games in a row.

Once the Second Officer heard Del's voice ask coolly: "Do you want to give up now?" On the next move he lost another game. But the following game ended in another draw. Del was plainly taking more time than his opponent to move, but not enough to make the enemy impatient.

"It's trying different modulations on the mindbeam," said the Second. "And it's got the power turned way up."

"Yeah," said the Commander. Several times he had almost tried to radio Del, to say something that might keep the man's spirits up—and also to relieve his own feverish inactivity, and try to find out what could possibly be happening now. But he could not take the chance. Any interference might upset the miracle.

He could not believe the inexplicable success could last, even when the checker match turned gradually into an endless succession of drawn games between two perfect players. Hours ago the Commander had said good-by to life and hope, and he still waited for the fatal moment.

And he waited.

"—not perish from the Earth!" said Del Murray, and Newton's eager hands flew to loose his right arm from its shackle.

A game, unfinished on the little board before him, had been abandoned seconds earlier. The mindbeam had been turned off at the same time, when Gizmo had burst into normal space right in position and only five minutes late; and the berserker had been forced to turn all its energies to meet the immediate all-out attack of Gizmo and Foxglove.

Del saw his computers, recovering from the effect of the beam, lock his aiming screen onto the berserker's scarred and bulging midsection, as he shot his right arm forward, scattering pieces from the game board.

"Checkmate!" he roared out hoarsely, and brought his fist down on the big red button.

"I'm glad it didn't want to play chess," Del said later, talking to Commander in Foxglove's cabin. "I could never have rigged that up."

The ports were cleared now, and the men could look out at the cloud of expanding gas, still faintly luminous, that had been a berserker; metal fire-purged of the legacy of ancient evil.

But the Commander was watching Del. "You got Newt to play by following diagrams, I see that. But how could he *learn* the game?"

Del grinned. "He couldn't. But his toys could. Now wait before you slug me." He called the *aiyan* to him and took a small box from the animal's hand. The box rattled faintly

as he held it up. On the cover was pasted a diagram of one possible position in the simplified checker game, with a different-colored arrow indicating each possible move of Del's pieces."

"It took a couple hundred of these boxes," said Del. "This one was in the group that Newt examined for the fourth move. When he found a box with a diagram matching the position on the board, he picked the box up, pulled out one of these beads from inside, without looking —that was the hardest part to teach him in a hurry, by the way," said Del, demonstrating. "Ah, this one's blue. That means, make the move indicated on the corner by a blue arrow. Now the orange arrow leads to a poor position. See?" Del shook all the beads out of the box into his hand. "No orange beads left; there were six of each color when we started. But every time Newton drew a bead, he had orders to leave it out of the box until the game was over. Then, if the scoreboard indicated a loss for our side, he went back and threw away all the beads he had used. All the bad moves were gradually eliminated. In a few hours, Newt and his boxes learned to play the game perfectly."

"Well," said the Commander. He thought for a moment, then reached down to scratch Newton behind the ears. "I never would have come up with that idea."

"I should have thought of it sooner. The basic idea's a couple of centuries old. And computers are supposed to be my business."

"This could be a big thing," said the commander. "I mean your basic idea might be useful to any task force that has to face a berserker's mindbeam."

"Yeah." Del grew reflective. "Also . . . "

"What?"

"I was thinking of a guy I met once. Named Blankenship. I wonder if I *could* rig something up . . . "

END

CAPTAIN of the KALI

By Gary Wright

Illustrated by Giunta

Sail down the wind, Kali! Victory waits across the seas — and so does death!

John Ward, God Helper, hung in his chair like a damp, empty uniform. An open, four-foot port showed a circle of blazing blue sky and a regular glimpse of a high, curving topsail. The humid, hot salty flavor of a strange sea blanketed the cabin, and sparked a sudden thought:

"What the hell am I doing here?"

There was no prompt answer. The wind rushed and moaned. The roiling water crashed and hissed under the stern. The following ship heaved its topsail into sight again, and withdrew it. A lilting chant drifted like smoke on the wind.

We ride the wind down like sleek, skimming birds.
The seething foam furrows follow true.
The sky is clouded with our singing sails.
We ride the wind down, down the wind.

He was Comet Colonel John Ward, Terran Confederation, Earth; he was certain of that. Age? Forty-two, more or less. Specialty? Historical Naval Tactician. If you had to call it something you might as well call it that. Hobby? Sailing. But, God, Snipes and Lightnings aren't ships-of-the-line! Reading? Well. . . lyric poetry and ancient history, if you must know. Present Occupation? God Helper. No, call that Commander Advisor to the Kali, Aqua. Future? Oh, hell-yes; right up the . . .

Wide shouldered, wave exploding, trim twin-hulled we come.
First, the sky tall, fine first-liners.
Then the seconds, flanking fast.
Lean and level slide the frigates.
All around us flash the corvettes.
Ride the wind down, Kali seamen, down the wind to Ande-Ke.

Six months ago he had a future all outlined, but six months ago he was a shining God Helper, come in glory. Now he was simply a God

Helper, and sometimes not even that.

We are the Kali The fortunate ones. Yes!
Heirs to our wind and water world.
Like our ships we are tall and proud.
Like our wind we are wild and restless.
Like our sea we are strong and savage.
This is our world, wide and lonely.
Ride the wind down, Kali brothers, down the wind to Anda-Ke.

Six months on this barely discovered, one per cent land area, behind-the-galaxy planet, with piercing Conferedation insight: Aqua. Where the land was scattered about like pepper on an egg, and even the wind tried to run backwards.

Down the wind at Anda-Ke— there is trouble.
There we meet the stupid Grimnal.
There the challenging, groveling Grimnal.
He will plead for his wives and children.
And, as proper Kali seamen,
We will keep them soft and happy.
After we send their men away,
Under the hungry gray-green water;
Under the wind as we ride the wind down, down the wind to victory.

And here he still was, trying to show some life-loving, song-singing, battle-mad, contrary-thinking, conceived of leather and salt spray, five-foot humanoids how to fight a sea war.

And that was really quite a joke. The Kali and the Grimnal had been at this for a hundred years, and doing quite well. They were in no danger of getting overpopulated for one thing, and had evolved a dual power political system over the entire planet before the invention of an explosive. But now, being newly discovered by bigger and better dual powers, they were being shown how to fight in a bigger and better way. Only the Grimnal seemed to be learning, however. Oh, the Kali listened, and even followed directions, but they seemed incapable of understanding that slamming two corvettes upwind into the guns of eight first-liners was simply not good military tactics.

They had a game. Something like Tag in reverse. One man was It, and everyone on ship tried to catch him. He could go anywhere, do anything, even cut the rigging as long as it didn't endanger the ship. The more daring he was, the better. Ward had watched one make a hundred and fifty foot dive from a skysail yard with the ship making about twenty knots in a heavy sea. How do you go about explaining caution to a people like that?

But he had to. Somehow. Since the big boys had taken sides the Kali had been losing. Or, more accurately, Ward had been losing.

All the Gods are busy Beings.
We know.
But even They have noticed now,

Ward's wandering mind snapped back. This was a new verse.

And sent a sky man down to help us;
Sent a Helper down to lead us.
But the ways of Gods are strange.
The Grimnal leaps from isle to island,
While the Kali stand and watch him.
While the Gods and Helpers falter.
Ride the wind down, Kali brothers. At Anda-Ke we stand the test.

A polite cough from behind reminded him that Captain Tahn was still in the cabin. The Kali coughed to express anything from rage to sheer joy, and this one probably meant that Ward's hearing the last verse was an accident. Ward swung around and glanced at him, but the Kali deliberately kept his slitted eyes on the chart before him. Ward was reminded again of the Kali likeness to the long vanished American Indian: black, straight hair; narrowed, snapping black eyes; high, angular cheek bones. But not much beyond that. If you took a fine featured Sioux of long ago . . . shortened him about a foot, thinned him down —bones and all, raised his shoulders to a perpetual shrug, stretched his arms so that they still reached his hips, then starved him for a month . . .you might be close. But if you took a picture of him then, and looked at it slightly sideways, you would almost have it. An extremely thin, short, shrugging strip of muscled rawhide.

Tahn coughed again; the your-attention-please cough. He swung a chart around for Ward to see. It was a rough drawing of Anda-Ke, the largest of the Grimnal Group, and more or less the home island. It looked somewhat like a startled elephant: mouth open, trunk arced out at an angle. The mouth was Anda Bay, and was guarded by Anda Passage where the lower lip came within two miles of the upper. The trunk was Pelo Head, and was broken about halfway down by Pelo Break. The area between the drooping trunk and the neck was the Grimnal Sea. It was into this that the Kali fleet was charging like a peanut sailing for the mouth.

Tahn tapped a pencil-like finger at the rearmost reach of Anda Bay.

"There," he said, in the Kali-Confederation mixture they found to be the shortest distance between two cultures. "Anchored there like marks on a sail. Feeling so safe in their home. Thinking we do not dare come after them. Grimnal rafts just waiting to go to the bottom."

"And the gliders?" Ward asked. "Are they returned? We have no information but the tales of two natives."

Tahn glanced at a water trickling, time-measuring device hanging from the overhead.

"Soon the gliders return, but. . ." He shrugged, somehow.

"And those are not rafts," Ward went on. "The natives said three, two and single gun rows. That means first and second-liners, frigates and probably corvettes. And they said 'many,' which means anywhere from fifty to two hundred."

Tahn coughed his agreement.

"But with Grimnal stupidity," he

said, "they can do no more than run around in terror as we shell the city and fire their ships. We have this won."

Ward looked down at his hands, caught a deep breath, and continued.

"I have said before. We are not fighting just the Grimnal. We are fighting God Helpers too. Men like myself have come to help the Grimnal." He caught Tahn's flickering glance and added quickly, "Men who are probably better fighters than I am."

Tahn coughed and leaned his head sideways, fairly equivalent to a casual 'so what?'

"False Gods. False Helpers," he said.

Ward held his breath and swung back to face the port. Great, sizzling Hell! He wondered if his opposite with the Grimnal had such problems. Probably not. Problems weren't allowed in the United Peace Worlds. And with the Grimnal preference for island life over the sea, it apparently took little urging to make them want all the islands in the world.

"You realize," Ward said without turning, "that they have probably known of our coming for days."

"Good."

"And what would they still be doing at anchor?"

Cough, cough. Probably meaning how the hell should I know?

11

If only they didn't have this towering independency and conceit, Ward thought. They used to fight as individual ships. Then they weren't the least surprised if a lonely frigate was blown to splinters by an overwhelming Grimnal force. In fact, it was a thing of joy and beauty forever.

It was only by the very fiercest thundering had he gotten this fleet together under Tahn, and only Tahn's high position had kept it together. And God only knew how much longer it would hold together. The Grimnal had shown remarkable organization. Ward had pointed that out, and that was a gross mistake.

The Kali wanted nothing to do with what the Grimnal did.

A sharp rap sounded on the cabin door and a Kali slipped in. He made the casual motion that could be a salute, a greeting or a wave good-by, depending on circumstances.

"Two gliders return," he said happily. "In the bay are two first-liners, four second-liners, five frigates and some corvettes. All at anchor. Just waiting for us."

Ward nodded.

"How many corvettes?"

The Kali's face wrinkled in dismay.

"Fifty-six," he said softly.

Ward smiled to himself, and ran the Kali fleet by in his mind.

Eighteen first-liners mounting a hundred-twenty guns apiece. Eleven second-liners mounting eighty to ninety guns. Twenty-four frigates mounting fifty to sixty guns. Fifty-two corvettes mounting ten to twenty guns. A strong force, but not as strong as the Grimnal potential. Firmly, he said:

"We will run down almost to Anda Passage—then wait."

The Kali glanced at each other. Tahn coughed.

"Not to go in?"

"No!"

"Why?"

Ward took a deep breath and told himself to stay calm.

"We know there are land guns along the Passage. We know that even without them three first-liners could hold it against anything. We know that those ships in the bay are not the whole fleet. Where are the rest?"

Double cough. Double head bob. Two helpless expressions.

"We outnumber," Tahn said hopefully.

Ward muffled a smile. At least they were learning something.

"We cannot go in, Tahn. It's a trap."

Tahn was quiet, his whole body slowly coming to what Ward knew was hurt pride and anger.

"Then we wait?"

"We wait."

Tahn was nearly rigid, his voice fighting its cage of control.

"We wait like before?"

It was Ward's turn to let a tingling moment pass. This was the first overt mention of his past actions. He must walk softly. Kali temper was like nitroglycerine; one touch the wrong way . . .

"We wait only to learn of the other Grimnal ships." he said evenly. "We let them make the first move in order to see what they are doing. Then we strike — hard!"

After a long, breathless moment, Tahn coughed. It was one that Ward never heard before, but judging by sound, it was not meant to be pleasant. Ward stood up, stared directly at Tahn and said quietly "I charge you with honesty, Tahn."

It was a serious phrase. Tahn made the equivalent of a nod.

"There is much talk," he began, his voice higher pitched. "We ask ourselves why we do not fight. The Grimnal takes many islands; land that is ours. He does not defeat us, but we do not stop him. We wait as you tell us. We wait and see our islands lost.

"The Kali are ashamed, and the Grimnal laughs. We cannot go home and face our women and children.

"You come to show us how to fight, you say. But we do not fight. We wait. You tell us things that will make us win, but we do not fight. We wait. You hold us back. We ask ourselves why."

He straightened, obviously grabbing a big piece of Kali courage.

"There is an answer why. Perhaps you help other Gods than ours. Or—perhaps you are afraid."

There it was. Stark and ugly. Ward looked at Tahn for a long time, then straightened to his full five-eleven.

"As a God Helper I am charged with honesty at all times," he said, and let it sink in for a second.

"I see many more things than the surface of the sea and the direction of the wind. What I do for the Kali is for the good of the Kali. If you follow me, you go to victory. If you do not follow, you go to the bottom."

The Kali glared with glittering eyes. Tahn's cough was a bark.

"Perhaps some will follow."

Their parting salute was crisp as they spun and left.

Ward eased himself back to the chair and stared at the door. This was the ragged edge. They fight the one coming, or else . . . And if they lost it, the Confederation

could mark off the Kali, John Ward and the planet.

He remembered all too clearly the other engagements, if you would call them that. And he remembered too the disappointment, chagrin and outright anger of the Kali, and his own frustration.

Engagement One: Taley Point. They had surprised a small Grimnal force close in to shore on the leeward side. After trading shots at extreme range, Ward gave the order to withdraw. Reasons? Shallows, reefs, a raising wind, and nightfall. The Grimnal was gone in the morning. The Kali had been stunned. It was the first time they had ever withdrawn with whole ships.

Engagement Two: Gola Island. They had chased a smaller force into port, but Ward had held off because of intense shore fire. The Kali did not sing for three days.

Engagement Three: Bari Sea. They were closing with a nearly equal force, yet out of range, when a large wind devil, one of the freak, contrary winds, had slashed across both fleets; shredding sails, splintering masts, effectively crippling both forces. Ward gave the order to heave to and repair damages, as the Grimnal did the same. The Kali were astonished. Such a thought was madness with the enemy in sight. But they followed orders, and did not smile when he appeared any more.

Engagement Four: Darel Sea. (Oh, the Darel Sea!) They were closing at glider range when a lucky Grimnal had sneaked in and managed to fire bomb a first-liner. Without that ship they were greatly outgunned and, leaving a frigate to take off the crew, they slipped off downwind. It was a near rebellion, but Tahn had held them. Then the wind came up, bringing the Grimnal force with it. And both the frigate and the burning first went down fighting. The Kali had cried, probably, Ward thought, more in admiration than in sadness.

And now, as a result of a vote of ships' captains, they were headed straight for the Grimnal's heart; and Ward wondered if he was anything more than a passenger. He knew he had been tactically right in each case, but the Kali knew he was morally wrong. So who had it, the head or the heart?

And what about this thing of being afraid? That hurt. He didn't believe he was afraid. Honestly, he really couldn't say. He had, as a fact, never fought a battle in his life.

He used to play a game in the scouts. What did they call it? Capture the Flag, or something like that. Each side had a hidden flag and the other tried to get it. He was always the planner. How'll we do it, John? And he would tell them, and keep away from the rough stuff, and they nearly always won.

But violence fascinated him as a spectator. Later his reading took him in that direction, and later still his studies. In the middle of his life he found he was one of the leading historical naval tacticians in the world. He started writing historical novels, under a pseudonym, of course, and soon became the world's authority.

Then someone blundered into Aqua.

For a couple hundred years the

Terran Confederation and the United Peace Worlds had been at war. Not an open, honest, stand-up-and get-it war; but an undercover, half ignored, let's- get- the - kids - to-fight war. A galaxywide game, played for planets, using local cultures. And always according to the rules. No new technologies. No new weapons. Use what you have at hand. Play it fair. Because if you do not, neither will we — and together we will eliminate the universe.

Aqua was a natural. It had a war already underway. Deep in the secretmost catacombs of Confederation Central a voice said: "Find a man who knows ancient naval tactics. Find a man who knows sailing. Find a man who knows combustion firearms. Find a man. Now!"

And the order went rattle-rattle, click-click, wink, blink . . . and reached out and touched Doctor John Ward.

Although *Colonel* Ward's training had filled three straight days, there was one thing they forgot to tell him — what do you think about, really, when someone fires a cannon in your face?

A knock came at the door. Ward rubbed his face back into an expression of awareness.

"Come."

Tahn entered briskly and strode to the opposite side of the table. His eyes held a level, challenging look.

"Gliders say there are Grimnal coming up behind us along the coast. About — uh — two hours distant."

"How many?"

"There are four firsts, five seconds, twelve frigates and some corvettes."

Ward patiently tapped the table.

"How many corvettes?"

"Twenty-three."

Ward was thoughtful for a moment.

"We still have them. But it still is not their whole force."

"We hit them?"

I'd better answer this one right, he told himself. They were now just below Pelo Break, about two hours from the Passage. There was about an hour of daylight left.

"After the sun dies," he said, avoiding the word "wait," "we will swing to meet this new force. If the wind holds straight and steady, we will come across to them like sharks in the night."

"Sharks?"

Ward grinned.

"A very savage deep sea fish of my world."

Tahn relaxed, and a twisted smile came over his narrow face.

"It will be a short fight," he said softly.

III

Aqua's sizzling sun was getting hazy as it settled behind lower Pelo Head, outlining the violent peaks like teeth in some savage jaw. Ward stood on the bridge of the first-liner, *Bad Weather,* and watched the fleet and the late returning gliders. He never failed to marvel at these ships — sleek, sea-flying catamarans, steady, tall and wonderously beautiful. Their twin hulls skimmed the seas with hardly a roll. Their speed was something you had to feel to believe.

He watched the second-liner, *South Bird,* come around to catch her glider.

Both soaring upwind, they aimed for an intersection. As they drew

closer, two long booms with netting between were extended over the stern. Slowly they angled together. When it appeared that the glider would crash the bridge it pulled up, stalled and fell softly into the net.

He never failed to exhale a long breath after such a landing — catching, rather.

Launching was even more spectacular. The ship raced out on fast beam reach with its glider poised upwind on its two poles. Then a streaking corvette hissed up under the stern, swung slightly upwind, caught the braided stretch-line and actually yanked the glider aloft. Ward was quite sure it was something he never wanted to try.

The *Bad Weather* was coming around now. He caught the white flash of her glider high downwind. Tahn came to stand by him, his quick. cat-like motions betraying his eagerness.

"They bring more news," he grinned. "The Grimnal in Anda Bay is starting to raise sail."

Ward frowned.

"They think to trap us between them. Perhaps they expect us to race into the Passage after dark."

Tahn coughed his pleased cough.

"But our — uh — tactics. is it? They are to keep out of the Passage?"

Ward smiled.

"For now We fight them as two separate fights, not as one. We will overwhelm each in turn."

Tahn's cough was one of agreement.

"Yes," he breathed "Just as long as we fight."

They turned to watch the glider make its long floating approach It had dumped its spoilers and was losing altitude, when it suddenly climbed impossibly fast, spun completely around and exploded in a hundred pieces.

Tahn leaped to the rail, stared, then keened the Kali howl of alarm. Ward squinted downwind in puzzlement, then saw it — the seething, wild slice of a wind devil arcing toward the fleet.

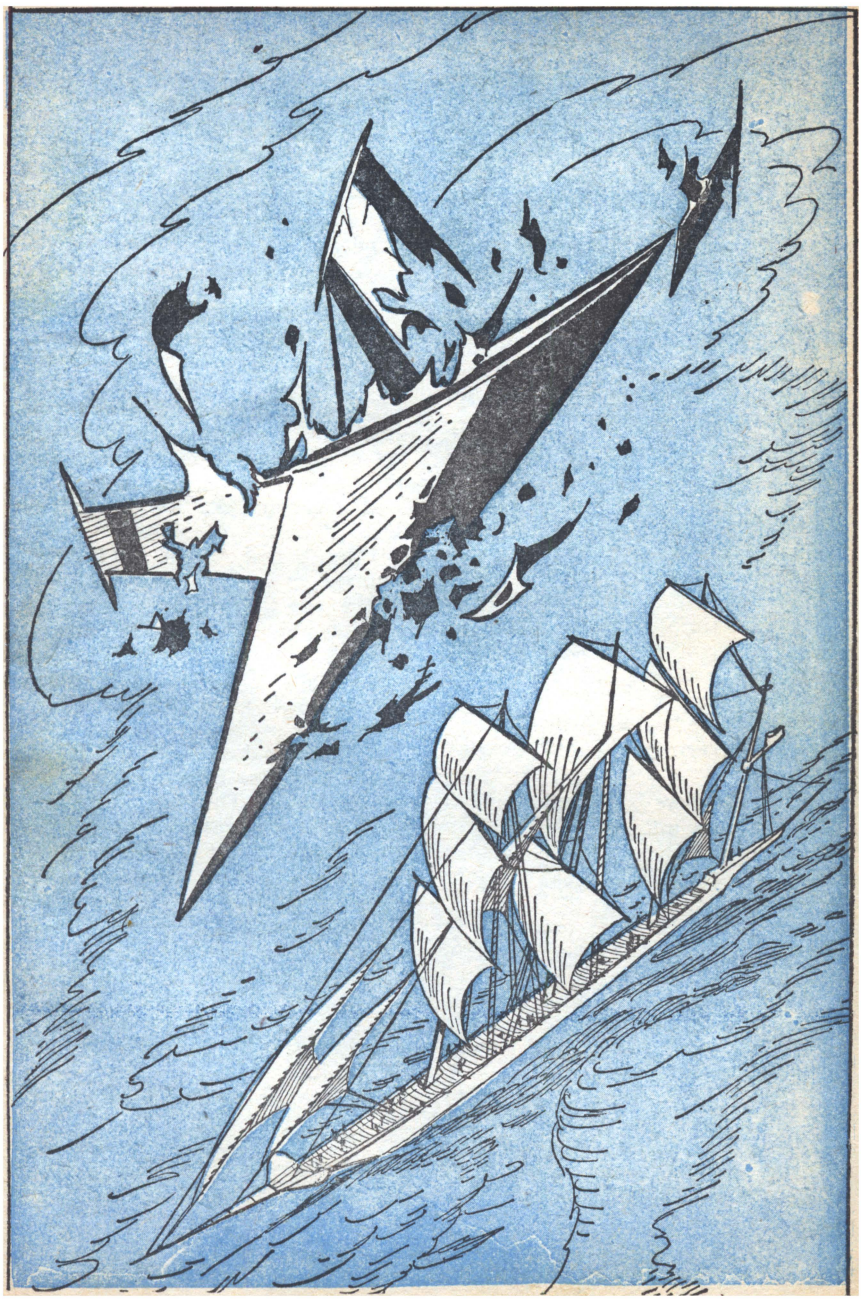
Curling, lashing, faster than any ship, it bore down on them in a track of boiling foam. Other ships took up the cry. Knives flashed as sheets were cut and sails crashed down. Seamen ran aloft to furl the wild cloth. Some of the leading corvettes tried to turn and run out of the way, but the wind was too fast.

A corvette suddenly lifted her bows, flipped over backwards and slammed down like a thrown stone. A frigate lost her sails and masts in less than two seconds. Another corvette rose sideways on one hull, spun and broke in two. The wind shriek became deafening.

Another frigate lost its masts, lifted on its stern and fell back in an explosion of water. The first-liner, *Thunder,* lost its masts and rigging, put its bows down as if stepped on, spun a full ninety degrees and finally relaxed. A corvette went tumbling end over end into the side of a second liner, which immediately lost its masts and half its bridge. A corvette went streaking out of the fleet at blinding speed, one hull hiked entirely out of the water, and disappeared in a wall of spray.

It was abruptly silent.

The foaming wind track left the fleet and slashed toward the open sea. With a soft flutter, then a breeze, the westerly quietly resumed its



push. The Kali appeared on deck again and slowly gazed about them. And the fleet lay dead in the water.

Ships lay heading in all directions. Wreckage, lines and bits of sail littered the water. A frigate lay listed hard over. Damage reports were coming in to the *Bad Weather*: the *Thunder* dismasted and leaking; another first dismasted; one second leaking badly, perhaps going down; three other seconds dismasted; one frigate sinking fast; two more dismasted and leaking; two more dismasted; six corvettes lost; four dismasted and damaged.

Tahn was grim as he scratched marks on a slate. Twenty-one ships out of action in less than a minute. Ward cursed and slammed the rail. Damned planet! Damned Grimnal! Damned everything! Tahn coughed beside him. *And* damned coughing!

"There is more news," Tahn said quietly. "We just fished out a glider flyer who had returned from cruising Pelo Head."

Ward turned. There seemed to be a smile flickering on Tahn's swarthy face.

"He says there is a great Grimnal force coming into the Break from the north. Sixteen firsts, eighteen seconds and ten frigates. There are no corvettes."

Ward's whole body seemed to tighten. Thanks to a damned wind the trap was sprung.

"Can they come through the Break?" he asked, more to stall for time than gain information. Tahn coughed three times.

"It is a brave thing to do. Even for Kali it would be brave. It is bad water in the Break. The wind goes up; the current comes down. It is slow. but it can be done."

"How slow?"

Tahn tilted his head, stared at where the slice of the Break was barely visible on the horizon, and shrugged, almost.

"Maybe — uh — two hours. Maybe more." He coughed. "Maybe less."

Ward glared at the crippled ships.

"And they would try it at night?"

Tahn coughed assent.

"There will be a good moon. I would try it."

Damn. Forces from three sides that, united, would blow them right out of the water. They could meet any of them alone, but . . .

"If we could slip south," he pondered aloud, "we could —"

Tahn snarled, his face an unearthly mask in the dimming light. His breath whistled between his teeth.

"You *polasti*!" he hissed. Ward straightened and faced him. The Kali around froze in their tracks. *Polasti* was the foulest word in their language.

"Kali have died in this water just now," Tahn was barely able to manage his voice. "They are down there right now. We will not run and disgrace them! We will stand here. We will put a wall of sails and guns around this spot, and if we die it will be in honor. We will run no more. *We will run no more!*"

He was trembling when he finished, and Ward expected a knife to make one final arc. It was impossible to try to explain. It was broken . . .

That thought crashed through as a knife never could.

It's over. The Grimnal will surround this pitiful fleet like a storm. It's over; we've lost the fight, the

war and the planet. And I've done it. It's my baby.

The thing seared him, roared through him, shook him — and touched a secret place. A deep place where he stored his anger. All his past angers, big and little; covered stifled, caught and hidden. Old hurts, old dreams, old reproaches screamed and gibbered through him like a thousand ghosts and devils. They swamped the gentle man. They dragged him down and gagged him. And something else took his place — something that had never been allowed to stand before.

"You stupid bastards!" he roared, wheeling to face them all. "You God-forsaken fools! A Grimnal baby is a greater fighter than your bravest man. Look what he has done to you. Look! Like blind animals you have been led into a trap. You have been put in a cage of your own ignorance. You call me *polasti!* I am the only one who can show you how to win. The only thing you know is to bunch together and be killed like animals at slaughter. You stand together in one tight group to make it easy for him. You know how it will be? Look!"

He sprang to the glass globe that held the magnetized needle, seized it and hurled it to the deck. It exploded like a small bomb. The Kali moved back.

"That is what the Grimnal will do to you. Your bravery will be as that glass, nice to see — but look at it now!"

Water from the globe trickled slowly through the shattered glass. The chips winked red in the dying sun. Only the cry of the wind sounded through the ship. Ward forced his choking breath to an even rhythm.

"Now go die like the fools you are."

He left the quiet bridge and threaded his way to his cabin. Night was coming softly to the Grimnal Sea.

It was dark in the cabin when the knock sounded. There was no answer, and it came again.

"Come," Ward said in a very tired, hollow voice.

The door swung open and someone entered. After a long moment, Tahn's voice came softly in the dark.

"No one has ever spoken to the Kali like that."

Ward did not answer.

"It is a brave man that can do that. And bravery is something we understand." There was a silent moment. Tahn coughed. "May I light the lamp?"

Ward swung around in the chair. "Certainly."

Flint flicked on steel, a spark glowed, caught, and light wavered in the cabin. The two faced each other, Ward sagged low in the chair, the Kali by the lamp. Tahn coughed again.

"There is a way?"

Ward let a moment pass.

"There is a way to try."

"Fighting?"

"Yes, fighting."

Tahn paused the barest second. "Tell me."

IV

The frigate, *Windsong,* skimmed downward like a low, lean cloud. Behind her, vague in the dim moonlight, followed four more frigates and the skating corvettes. Before her, like a gate to hell, gaped the jagged mouth of Pelo Break. Ward leaned

against the bridge rail beside Resi, the scarred and battered captain of *Windsong*.

"Keep close to the eastern side," Ward said. "In the shadow of the cliffs, out of the moonlight."

Resi spoke softly to the helmsman, and the *Windsong* eased into the shadow. Ward turned and watched the following ships as, one by one, they slipped out of the moon and all but vanished. He swung back and squinted ahead. As far as he could see, high, broken cliffs reared straight from the water on both sides, angling together in the distance. There Tahn had said, they stood a scant two hundred yards apart, and the Break turned nearly sixty degrees to the west. That was the narrows. Ward turned to Resi, wondering if the old Kali fully understood the plan.

"If we do not meet them before, we wait for them at the narrows."

There was no acknowledgement that he could tell. Not even a cough. He doesn't like this, Ward thought. He relishes the fight coming, but not me. Despite Tahn's heated pep talk, I am a bad totem. But Tahn had accomplished one thing—an honor promise from each ship's captain to follow orders. Ward knew they would, as long as everything went along with fighting, but the moment something went wrong

He remembered Tahn's bark of surprise as the plan unfolded Then the argument, and his own firm stand that he command this force. For this was the crucial contact. The Key. If this failed—it all failed.

He was sure that Tahn and the rest of the feverishly anxious Kali would more than whip their end. They were outnumbered, but had an overwhelming firepower edge. For the hundredth time he reviewed the thing, looking for the fatal flaw.

One frigate for the crippled ships, which gave them quite a bit of firepower right there. Two firsts, four seconds, five frigates (the *Storm Bird* had gone down) and four corvettes. They were to make fast repairs, jury rig, then stand by in the shadow at the mouth of Pelo Break. If the Kali came back out—fine; they would all rejoin Tahn. If not—and the Grimnal came—they were a last stand.

Tahn had the main force of sixteen firsts, seven seconds and thirteen frigates. He was to intercept the Grimnal coming from behind. He would run their fleet through, come about, rake them again and run out to sea. He was to hit them hard enough to stop them, then make them believe he was running away. After any pursuit was discouraged he was to come downwind and fly for Anda Passage.

If the timing was right, he would run right over the force from the bay, and with a little effort clear them off the water.

"Then," Ward had added with a half smile, "you can shell the land guns in the Passage in your spare time. If the first Grimnal force comes limping in you shouldn't have any trouble."

No, Tahn wouldn't have any trouble. In the Kali's present mood they could probably do it with half their ships.

But hell would be open in the Break tonight. Five slim frigates and forty-two tiny corvettes against sixteen firsts, eighteen seconds and ten frigates. Ship for ship; but what un-

balanced firepower! Their advantage would be surprise, if nothing slipped, and maneuverability where the Grimnal ships would have their hands full just keeping clear of the cliffs. And this was the fulcrum.

A sudden flare from the maindeck.

"Cover that!" Resi snapped. Then to Ward, "They are cooking the liquor."

Ward nodded. Apparently Resi had a good idea of what was expected. That was one good thing. The liquor, as they called it, was their explosive. A revolting, highly inflammable slime brewed of seaweed and fats. It was prepared in port, but had to be brought to a firing temperature on board. This was done by heating in large kettles and kept just below boiling. When a gun was to be fired, a certain measure of this soup was poured down the muzzle to a sizzling hot firing chamber, kept hot by a covered charcoal packing and quickly sealed by a lava-stone ball. It was the gunner's sense of timing then to know when the gun was ready, and slam the firing stud with a hammer. This slapped flint to steel inside the chamber—and wham.

But it was touchy. If the gunner swung too soon, nothing. If he waited too long, it fired itself. If the chamber was too cool, it would not fire at all; if too hot, it might go the second the ball was rammed. A very delicate operation. And in the midst of battle—with charcoal flying, hot shot coming in, glowing fires under the kettles and spilled hot liquor everywhere—it was hard to see what kept a ship from blowing the whole battle apart. But that never happened. The liquor was easily diluted with water, and they went into battle with special water crews sloshing down the decks. And the stuff was fast. In the Gola Island fight, with fairly hot guns, they were loading, aiming and firing in about ten seconds.

The *Windsong* eased along, the narrows loomed closer and Ward began to tighten. Any second he expected the double bows of a Grimnal first-liner to slide into sight, followed by another, and another, and another . . .

He felt the urge to move about, to do anything as long as he was moving. He noticed the Kali were the same. They were as restless as the troubled waters of the Break—lunging, hissing, swirling, rocking up and down. They were constantly at the rail relieving themselves, or rattling the dipper at the water barrel. And he could see the glint of their eyes as they threw quick glances in his direction. He caught Resi watching too, and moved away.

They didn't trust him. They were waiting for him to call it off. They expected him to; probably wanting him to.

He suddenly found he was quivering like a captured bird. He gripped the rail hard with both hands to stop. But it wouldn't stop. It galloped through him, ran him down and trampled him. And in panic he saw what it was.

Fear.

No simply the fear of failing. It was . . .

God! The reality of it! This wasn't like reading a book or writing a story. This was going to be real shot and flame instead of words and paper. Real people were going to die, with their blood warm and sticky

and horror in the eyes—and he wouldn't be able to glance away to ponder it. It was going to roll from start to finish with the reality of Now and the surety of Death. It was going to flame as fights have flamed since something first snatched up a rock. And he was going to be right in the middle of it with these Kali, win or lose, live or die. And what was he doing here with these strange, alien Kali?

He raised his head and glanced around. Resi was standing by the helmsman, talking with his deck lieutenant. Water splashed down on the maindeck; the water crews at work. There was a breathless quiet over the ship. He could see them standing like shadows, watching the curve of the narrows.

The Spartans must have stood like that at the Pass of Thermopylae!

And the Athenians on the Plains of Marathon.

And the Americans at Bastogne.

And men anywhere, any time before a battle.

A single, whispering line from an old poem sang through him:

Into the Valley of Death rode the six hundred.

There was no alien here but himself.

The ominous walls of the narrows closed and filled the sky. Beyond the curve, some two miles up, the Grimnal ships were slowly beating upwind. Suddenly, like a touch of fire to old ashes, he knew what he was doing here. A long imprisoned breath escaped from him, and a great sigh seemed to come from the whole ship.

Resi turned. Ward could barely make out what must be a smile in that old Kali face.

"We made it, ho?"

"Just barely, by God. Have the ships string out as planned, with the lead frigate in the tip of the shadow where the Break turns into the moonlight. And be careful of noise. It will carry in here like a cannon shot."

Resi coughed and was gone like a cat.

The *Windsong* fell dead in the water. The others whispered past like ghosts. Voices called softly, and the small, shielded signal lights licked from ship to ship. And the *Windsong* was alone. Her bows swung out slightly to allow the foreguns a field of fire. Ward climbed down from the bridge, strode the water-slick maindeck and gained the foredeck. The gun crews turned, glanced at him, then turned back. He could not tell if they were smiling or not. So what. They would have plenty to smile at in a moment.

The lead first-liner was about a mile now and keeping well to their side. Ward squinted at the point of the shadow, but there was no light flickering there that he could see. Damn!

The Grimnal ship looked huge in the moonlight, and the Break behind it seemed filled with sails. It was nearly abreast of the shadow tip, still holding to their side, and the tiniest flicker of light danced in the shadow beside it. Ward grinned. David and Goliath.

The giant first-liner started its slow turn on the very edge of the shadow, drifting into the dark until only its sails held the moon. The sails came around, fluttered and filled. The silent hulls came into sight.

Ward let out a breath, echoed by Resi. The lead liner was well on its new tack. The next was starting to edge into the shadows, and behind that was another, and another, and another. Resi muffled a cough.

"You tell when?" he whispered.

Ward nodded. "I'll tell when."

The Grimnal rode closer, the crash of its bow waves sounding louder. Ship after ship was coasting past the hidden frigate. Ward's excitement grew to a pounding thing. They would be able to get them all in range.

The sails towered over them. A hundred yards. Almost abreast; just at the narrowest point. Ward took a deep breath, and said quietly:

"Now."

Resi turned and hissed. Steaming liquor trickled down hungry cannon mouths. Lava balls were softly rammed home. Muzzles came down. Aimed. The gunners tensed, raised their hammers—and swung.

The night came apart.

A crashing roar racketed through the Break. The walls blasted back the echo. The *Windsong* rocked and trembled. Smoke boiled into the moonlight and dimmed the Grimnal ship. And that was only a small sound. Over a mile of fire smashed from the shadow and for a quivering second, it seemed the world had exploded. Then came the thunder, and Ward flinched.

Waterspouts climbed in the moonlight. Wreckage spun from the Grimnal ships. Holes splintered in their sides. The *Windsong* roared again; the bobbing corvettes answered. And a deafening, mind dulling thunder covered the break.

And the Grimnal did not answer.

The lightning flared steady now from the Kali line. Resi climbed halfway up the ratlines for a better look. And still the wounded giants had not answered. Grimnal were running in all directions on their decks. Resi let out a howl of sheer triumph.

"They do not have their liquor cooked!" he cried, swinging to the deck. "We have them with cold guns!"

The Kali cheered, and the firing seemed to cease. Ward was shaking again, but for a different reason.

"Hey, Resi," he bellowed. "Let's get in there closer."

Sails snapped and the *Windsong* came alive. She seemed to leap into the moonlight. Then a corvette appeared beside her, and another, then two racing side by side into the smoke. And all the Kali were moving. The *Windsong's* men were laughing like children, and the water crews had everything soaked halfway up the mainsails. What people! Ward laughed, ducking another bucketful. Resi slid to a halt beside him.

"We fool them, ho? We fool them!"

"Closer," Ward yelled. "Under their guns!"

"But they are not firing."

"Under their guns anyway," Ward laughed, and added to himself—away boarders! A few scattered shots were coming from the Grimnal, ripping overhead. Ward stood a little taller. The *Windsong* came about, her starboard bow nearly slashing the looming first-liner. Ward felt Resi's hand on his arm.

"It was really *you* that fool them."

Ward grinned foolishly.

"But *we* whip them, ho?"

Ward wanted to answer, but it was the starboard guns' turn to speak.

END

WHEN WHIRLYBIRDS CALL

by Frank Banta

Five-Gun DeCrabbe was the terror of every planet—especially to his friends!

Those of the city of Featherton, on Grimes Planet, were with him to a man. Feathertonians cheered and waved from their windows that morning, not daring to come out for fear of the whirlybirds, and admiring Five-gun Charles DeCrabbe all the more for riding down the main stem of the town with the bubble of his convertible space coupe slid back—ignoring the menace from the skies.

Five-gun Charles DeCrabbe rode down the exact center of the street, looking neither to right or left, not acknowledging the screams of adulation that poured from the windows. His bare head was up, his mouth was pressed into firm, haughty lines of self-confidence and even his battle dress of dark green seemed to exude the aura of a competent killer.

Five-gun Charles DeCrabbe had come to clean up the town. Of whirlybirds.

He stopped his space convertible in front of the white stone building titled City Hall on its facade. The two men waiting to greet him stayed safely under the bullet-shaped marquee as he alighted. He jumped over the side, checked his two holstered needle pistols, slung his explosive pellet rifle over one shoulder, his N-ray flashburn gun over the other shoulder and picked up his rocket-

powered stun-gas spray gun in his hands. He strode over to the waiting men.

"I'm Alson Prince, Mayor of Featherton," said the older man shaking hands with the one DeCrabbe stuck out from under the spray gun. "And you are Five-gun Charles DeCrabbe?"

"Yes yes yes!" exclaimed DeCrabbe impatiently in his clipped speech.

"I'm the mayor's son," introduced the younger man with admiration shining in his eyes. "You sure look like you're ready to whip those whirlybirds."

"Yes yes yes!" exclaimed DeCrabbe haughtily. "Always dislike long conversations you know. Supposing you tell me what you know so can exterminate them without further delay. No doubt solution before dusk."

"Before dusk?" asked the mayor, dumfounded. "Oh, no, not today, I'm afraid. They've been around too many years to whip in one day."

"Perhaps shall require two days then," said Five-gun Charles DeCrabbe graciously. "But doubt it. Tell me what you know of them."

"Very well," assented the older man. "Perhaps the best place to begin is with their name. When we first occupied this planet, a bare twenty years ago, we called them wolfhawk-whirlybirds and tigerhawk-whirlybirds because they preyed on vicious animals. The whirlybirds were our best friends in those days. The only trouble is that they ran out of tigers and wolves to eat."

"Presumed they are now called peoplehawk-whirlybirds?" DeCrabbe frowningly asked in his clipped speech.

"Exactly!" answered the older man. "Although that isn't their full name. From the way they attack—"

"Most important," interrupted Five-gun. "Give to me in detail."

"They prefer to attack strollers, although they have attacked on city streets when there is little traffic. They fly with amazing speed, considering they are an untidy ball forty feet in diameter, and they are on top of their victims before the unlucky ones are aware of the menace. Blowing their victims down with a rush of air from their feathers, they grab them up by the heels, carry them high aloft and drop them on piles of rock outside of town."

"They are *downdraft*-peoplehawk-whirlybirds then?" asked DeCrabbe.

"That's almost it," agreed the mayor. "I have not yet told you of their cries. As they rise in the air with the victim dangling from their talons by his heels, they utter a pleases 'Coo! Coo!' like a gentle dove. That is why they are called Coocoo-downdraft-peoplehawk-whirlybirds."

"Approve of adequate names," nodded Five-gun, unbending a trifle. "First step toward efficiency. Only one thing haven't made clear. Presumably have shotguns and rifles. Why unable drive off these predators yourselves?"

The mayor laughed bitterly. "It would be easy to tell you'd just arrived on this planet—although the

birds are not well known in the other cities either; they are all concentrated in this area. Yes. our sportsmen tried to shoot down the whirlybirds. No luck, of course. Imagine the problems you have when one of these forty-foot balls of commotion comes at you: You try to aim but you can't hold your arm still because of the swirling wind they raise; and then the dust clouds thicken and you're firing wildly, and you can't begin to tell which is body and which is feathers anyway."

"Very well," accepted Charles DeCrabbe mercifully. "You've made attempt. My first step therefore the attachment of high explosives to boobytrapped mannequins. Brought these with me."

"Great winds of catastrophe. I'm glad you mentioned it before you did it!" exclaimed the mayor. "We tried that once. The city was six weeks digging out from under the feathers—and it didn't kill the whirlybird!"

"Aren't you exaggerating difficulties encountered in picking up few feathers?" loftily inquired DeCrabbe.

"How do you think we got the name of Featherton? Before the deluge we were called West Appleburyl"

"Then why haven't you attempted lure them into boobytraps outside town? Could detonate them there without even slight inconvenience of picking up feathers."

"Believe me, if there were only a *few* feathers," insisted Mayor Prince, "few enough for you to pick up by yourself, we wouldn't mind you blowing up a whirlybird."

"Wasn't considering picking up *any* feathers," replied Five-gun with dignity. "Had supposed a menial or two could be supplied for that."

The mayor shook his head. "It would take everybody in town to clean up. And as for blowing one up outside the city, one of our orchardists tried it. He blew it to bits all right, but eighty acres of his apple trees were smothered under the debris!"

"Now anticipate that the extermination of the whirlybirds will almost certainly take me up to two days," conceded Five-gun DeCrabbe calmly. "However will be all the more interesting to defeat them without recourse large explosives."

"Gee, what a man!" admired the mayor's son. "Only two days!"

"If you will now lead me to your city park will begin campaign of extermination at once."

"It's down that way," said the mayor, pointing. Plainly he had no intention of leaving the shelter of the marquee. "You can't miss it."

As Five-gun Charles DeCrabbe leaped back into his craft and started off, the mayor's son called after him, "Aren't you scared, going out exposed like that?"

DeCrabbe turned. "Am armed, young man," he retorted severely.

"Yeah, but those whirlybirds don't pay any attention to guns."

"Soon will," DeCrabbe replied, unruffled.

Slowly he drove down the center of the empty street, receiving more

cheers from heads thrust out of windows. He arrived at the city park and turned in. He unloaded most of his equipment under the roof of the bandstand.

A few minutes later one of his robot mannequins moved slowly around the clearing before the bandstand, its control set for slow walking to conserve its atomic battery. The predator hunter unlimbered all his guns as he sat under the bandstand roof waiting.

It was an hour before the first whirlybird attacked.

His first warning was the rising wind. His gaze moved around the sky until he found the rapidly growing black spot. A few seconds later it became a universe-engulfing blackness as it spotted the mannequin and came down for it. As soon as the wind-screaming blackness reached the mannequin, the needle guns in his hands emptied their hundreds of anesthetizing needles into the turbulence. But it was as the mayor had said. Where did the bird's body end and the feathers begin? When the needle pistols were empty he dropped them and snatched up the rocket powered stun-gas weapon; its immense flare poured into the blackness without visible result. He dropped it and grabbed the N-ray flash-burn gun. The forty-foot ball of fury was beginning to rise high with its prey now, as the gun stuttered fifty bolts of burning lethal radiation into it. He smelled feathers that time. Finally as the giant bird, without faltering, rose above the range of the N-ray gun, he took to the explosive pellet rifle. It had only ten shots; all of these went into the center of the blackness well before the whirlybird had flown beyond range. And as it neared the horizon with its mannequin prey, he heard its sweet song:

"Coo! Coo!"

"How *dare* it coo after all I did to it?" muttered DeCrabbe grimly. "Shall not coo next time!"

Half an hour later a new mannequin stood out in front of the bandstand. Its arms waved ceaselessly but it stood still. Nestled against its back was a ten gallon drum of gas, which would be exploded—blanketing most of the park in fumes—as soon as the mannequin was moved. Charles DeCrabbe waited, his mask ready, his potent weapons all reloaded.

Ninety minutes later the huge black menace arrived—either the first whirlybird or another forty-foot wind-screaming fury. Slipping his gas mask on, the man waited for the right moment to begin firing. The whirlybird swooped down, the tank exploded in a fog, and the giant wobbled!

DeCrabbe emptied all his weapons again. The bird arose, wobbling, its speed greatly impaired, but making its getaway despite all he could do.

"Damn well didn't coo that time," he said when the monster had reached the horizon. "Next time won't fly either."

But just then the monstrous bird mocked him in the distance with a loud, sweet, "Coo! Coo!"

Shortly after lunch he had it all

set up. A new mannequin stood out in front of the bandstand, its arms waving and a pair of slim, gleaming, ten-gallon drums of stun gas nearby.

It was one o'clock before the third whirlybird struck.

Down it sank until it became a huge, ebony blot in the afternoon sky. Underneath the bandstand roof DeCrabbe got ready for his supreme effort. He slipped on his gas mask and made sure his N-ray flashburn gun was ready for instant action, its safety off. He was determined that if he got the bird prostrate he would climb aboard and fire N-ray bolts into it until something *gave!*

The huge black, wind-screaming monster plummeted the last few yards down and grabbed the mannequin. Both tanks of stun gas exploded. The giant whirlybird slumped unconscious—and DeCrabbe scrambled aboard!

The feverishly hurrying hunter was not long discovering why he had not —and never would—penetrate the bird's feathers with any of his weapons: He burrowed down into the feathers the length of his arm and there were yet more feathers beyond! A feather pillow would stop a rifle bullet, he knew, and this monster had the probable equivalent of a thousand feather pillows protecting it, invulnerable as a battleship.

And just then the maneater awoke, wobbled into the air, and flew away before DeCrabbe could get off!

The following afternoon, as Five-gun Charles DeCrabbe made his farewell of the city of Featherton, he once more drove down the center of the street with the bubble of his space convertible slid back.

Yet there was a difference this time. The mayor and his son rode beside him on the seat, and all of the people were now out of doors standing along the curb, cheering their deliverer wildly as he passed.

"I can't tell you how much I personally appreciate what you've done for us," said the mayor humbly.

"Quite quite quite!" returned Five-gun haughtily in his clipped speech, hoping to shut off the man's tendency toward windyness.

With awe in his voice the mayor's son admired, "So instead of being scared to leath you were all ready for action when you and the whirlybird landed at their rocky, mountain lair?"

"Yes yes yes! Slid off its back, hid between two boulders, waited for the appropriate moment. After bagging that one, waited for other monsters as they landed, one by one. Bagged them."

"Just like that!" said the youngster. "You just get up close enough for those peoplehawks to grab you and then you bagged them."

"Only possible way is my way," clipped DeCrabbe immovably.

"Its eyes couldn't be buried deeply in feathers if they were to be of use."

"So?"

"So eye is proximate to beak—and brain," said the hunter with dignity. "Where one of its *coo-coos* came out, one of my N-ray bolts went in, and that was that!"

END

HUE AND CRY

The Place Where Readers And Editor Meet...

Dear Editor:

Swell. One of the greatest letter departments that *If* ever had. Just started my curiosity again. *The Snowbank Orbit* by Fritz Leiber was the best story that you have published now since *The Sounds of Earth* by Arthur C. Clarke. I still want to shake your hand and congratulate a fine editor for a job well done. You are coming along with some of the top science-fiction writers in the whole field.

James W. Ayers
609 First Street
Attalla, Alabama

* * *

Dear Editor:

Your cover art has improved remarkably with the September painting. The July issue's disgusting effort falls far, far behind Wenzel's latest contribution, which almost surpasses the 1961 (September) cover. May you continue to improve.

Robert A. Heinlein in the November issue? Maybe you *are* really looking up after all. Mr. McKey had a difficult "flipping" feat ahead of him.

Roger Alan Cox
Z913, Courtney Road
August, Georgia

* * *

Dear Editor:

On the back of your latest issue, does the "B E M s" stand for "Book-Eating Maniacs?" My friend and I would like to know.

David Mars
500 Greenwood Drive
Clinton, Tennessee

● Nope. Stands for "Bug-Eyed Monsters"—old science-fiction expression referring to the peculiar-looking aliens that used to appear on every science-fiction cover. Naturally we're above that sort of thing now.—*Editor.*

Dear Fred:

The July *If* caught up with us here in Florida just while we're getting ready to shove off for Maine.

To set the record straight, the writing of *Masters of Space*—except for some editorial revisions—was all mine. So was much of the plot; and I approved unreservedly both Evan's share of the plot and his rough draft upon which half of the final draft was based.

I note without too much surprise that Mr. Winkes doesn't like it. He isn't quite alone in that. Mr. Bester and Mr. Boucher and some others didn't like it, either.

However, that fact doesn't bother me too much. Thelma Evans liked it, I liked it, and a lot of fans liked it—and I learned long ago that nobody can please everybody.

Edward E. Smith

* * *

Dear Editor:

I just bought the September issue of your magazine today and I thought I would drop you a few lines of first-impression comments and suggestions.

What's the matter with your printing presses? As I flipped through this issue I saw a great number of printing blotches and on the second page of the story *World in a Mirror* I discovered a word so completely smeared that I could get no clue to what it was. How about dropping a hint to the printing boys not to put so much ink on the presses?

John W. Woods
34 Centre Street
Haddonfield, New Jersey

• We did better than that. We dropped those printers.—*Editor.*

Dear Editor:

Your July and September covers were beautiful! I think the September cover's about the best cover I've ever seen on any science-fiction magazine.

I'd like to see more of Wenzel.

Kent McDaniel
620 Metropolis Street
Metropolis, Illinois

* * *

Dear Editor:

Reguards Retief and that Fustian jag: Come, gentlemen; you sir, Mr. Pohl, sir, for publishing such unmitigated garp, and you, Mr. Laumer-san, for writing it. Especially you, Mr. Laumer.

The plot was obviously prefabricated, the action was, leave us face it, implausible, the ending too pat, the villain not nearly villainous enough (why didn't you use a pussycat, Mr. Laumer, sir?), the dialogue clearly constructed from random combinations of alphabet cereal, the protagonist much too cocksure, arrogant and just all-around offensive, the supporting character name of Magnan too stupid—in short, Mr. Laumer, sir, your characters are celluloid stereotypes, your action is uncoordinated and amateurish and your imagination is restricted by Grade F mystery magazine technique.

David C. Oshel
1219 Harding Avenue
Ames, Iowa

• Quit beating about the bush! Did you like it or didn't you?—*Editor.*

* * *

Dear Editor:

The first thing I turn to eachish is the Retief story. You quit printing them and I quit buying *If*.

Wilton McArthur
Bethlehem, Pennsylvania

Dear Editor:

The other day I was looking through the city library for something I hadn't read, and ran across a book on how to build model planes by one J. K. Laumer. On the back it stated that J. Keith Laumer, at that time on duty with the U.S.A.F., had spent three years in the U. S. Foreign Service. The plot now begins to clear itself up a little.

All professions have their private stock of stories on who did a fine job here and who was a horrible example there. Our State Department has sent some people abroad to represent us who were no better prepared than Ambassador Magnan, some even worse, and others who were 100% on the beam. Read your world news and see what types kept other people on our side, and what ones lost us much of that intangible stuff the Orientals call "face."

Laumer is merely mining his little stockpile of departmental folklore, setting them in far-off worlds. Long may he rave! Listen, reader, and perchance learn something of value to the present.

John P. Conlon
52 Columbia Street
Newark, Ohio

* * *

Dear Editor:

I have just finished reading your September issue, and find it passable—no more . . . It might be questioned whether or not an editorial is the place to conduct book reviews. I, for one, would rather see no editorial and a plainly labeled book review section.

More serious is the fact that the reviews are not critical enough . . .

I do not want to give the impression I did not enjoy the issue, for I did. But I am an sf addict, and enjoy anything that can pose as science fiction. In this letter I have tried to abandon this sort of attitude and take the attitude of an English prof critically reviewing serious literature—for I believe science fiction can be and should be as meaningful as any other type of literature. It has some advantages over other forms of literature, most noticeably in that it is the only form that does not carry an overwhelming burden of tradition; but it is not living up to its potentialities.

R. W. Scollay
307 North Beech Street
Oxford, Ohio

* * *

Dear Editor:

Why was the July *If* 7¾" tall and the May and September issues 7 9/16"?

Hank Luttrell
Route 13
2936 Barrett Sta. Road
Kirkwood 22, Missouri

• Printer goofed. See note to John Woods' letter above.—*Editor.*

* * *

Dear Editor:

I'm glad to hear about the IFirstory campaign. True, you'd probably publish at least one new writer every issue anyway, but doing it formally should encourage a lot of amateurs who would like to write, but feel that they don't have a chance, competing against established pros . . .

I'm afraid this letter ran rather long, but I say what I have to say. Do you feel that anything I said herein was unnecessary?

Paul Williams
163 Brighton Street
Belmont, Massachusetts

• Not a bit of it. On the other

hand, we have just so many pages . . . so what we do, we cut the letters most savagely. As you know! The "IFirstory" program (now, *there's* a neologism for you!) is coming along handsomely. Take a look at this issue's discovery: *Captain of the Kali*, by a man who to us seems one of the most promising finds of the year.

* *

Dear Mr. Sturgeon;

Your article *Uncle Sam's Time Machine* in the July issue of *Worlds of IF Science Fiction* has been widely read here at the Boulder Laboratories of the National Bureau of Standards. We just wish to tell you how much members of our staff enjoyed the presentation. Of course, we hope your readers understand that this particular item was anything but fiction!

John R. Craddock
Technical Information Officer
National Bureau of Standards
Boulder, Colorado

That's the full bundle for this time. Once again we have five times as many letters as we can print, even abridged. The unpublished 80% are thanked most gratefully and assured their letters have been read, their opinions have been weighed . . . and their chances of seeing themselves in print next time are as good as anyone else's.

—*The Editor.*

Give GALAXY

the gift you'd like to receive

We admit it — we're pushovers for the Xmas spirit. "Don't do it," our accountant pleads. "We can't afford to sell subscriptions at those prices!" But our eye goes past his piteous figure to the distant corners of the land. "Readers straining budgets to introduce GALAXY to friends and relatives, and have enough scratch left over for their own subscriptions. We can't leave the job to them!" we thunder. "GALAXY must bear its share of the burden! And not only that — by the Lord Harry, we'll even include handsome Gift Card Announcements with their names as donors!" Out slouches our accountant, muttering, "All right, but they'd better get their orders in before December 15. — — so rush in your order today.

Galaxy Publishing Corp., 421 Hudson St., New York 14, N.Y.

Please enter Special Gift Subscriptions to the following and send gift card announcements.

I enclose.....

Name.....
Address.....
City.....**State**.....
Offer #..... **Price**.....
Sign Card.....

Name.....
Address.....
City.....**State**.....
Offer #..... **Price**.....
Sign Card.....

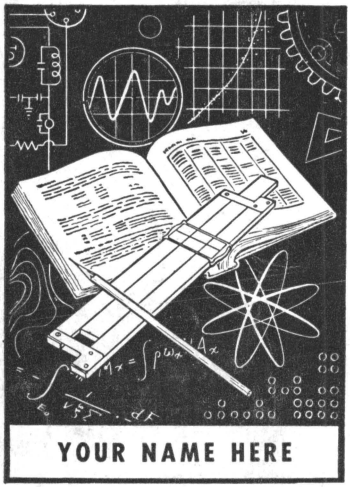
Name.....
Address.....
City.....**State**.....
Offer #..... **Price**.....
Sign Card.....

Name.....
Address.....
City.....**State**.....
Offer #..... **Price**.....
Sign Card.....

A GOOD XMAS ITEM

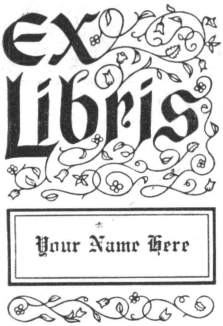
The BEMs in your neighborhood

won't run off with your books if you put inside the front cover of each book... a gummed bookplate with your name printed on it!



No. GF-614 by Emsh

No. GF-612 by Emsh



No. GM-12 by Cullen Rapp

No. GX-57 by Lynd Ward

FINAGLE SAYS—

The umpteenth corollary of Finagle's General Law of Dynamic Negatives says:

"No books are ever lost by loaning except ones you particularly want to keep."

100 for $4; 200, $6; 300, $8
with owner's name imprinted
All Postpaid. Add state sales tax, if any.

ACTUAL SIZE, all designs, 3 x 4 inches

The designs shown above are the only ones we offer!

Order from GALAXY 421 Hudson Street, New York 14, N.Y.