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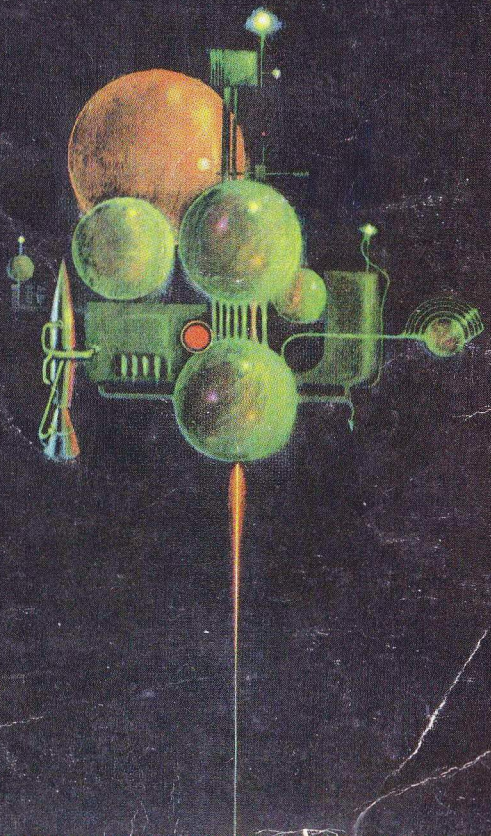
THE IF READER OF SCIENCE FICTION

edited by FREDERIK POHL

The finest stories from the Hugo Award winner, Best Science Fiction Magazine, featuring A. E. VAN VOGT • JOHN BRUNNER • KEITH LAUMER • FRITZ LEIBER • FREDERIK POHL



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The alien creature who was required by Terran law to beat his wife

The computer that was entered in a chess tournament

The treasure horde in space that was really a deadly bomb

The interstellar explorers who became gods

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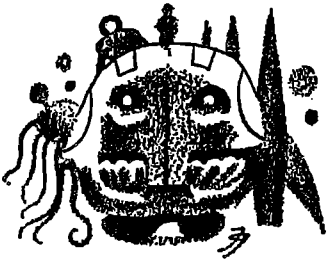
FREDERIK POHL



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THE *IF* READER OF SCIENCE FICTION

All of the characters in this book are fictitious, and any resemblance to actual persons, living or dead, is purely coincidental.

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THE IF READER OF SCIENCE FICTION

INTRODUCTION

Over the years—nearly fourteen of them have passed since the first issue of *If* hit the stands, part of the science-fiction explosion of the early 1950s—this little magazine has used up more editors than one would think. Paul Fairman, James L. Quinn, Eva Wulff, Larry T. Shaw, Damon Knight, and H. L. Gold all served their terms on the bridge, and it was with a certain surprise that we realized the other day that, with five years of running it behind us, we have become *If*'s senior editor.

When we took over, late in 1960, we had an idea that we knew what *If* ought to be. At that time there were five other science-fiction magazines going in the United States. There was *Galaxy,* which we took on at the same time; there was John Campbell's *Analog;* there was *The Magazine of Fantasy and Science Fiction;* and there were hoary old *Amazing Stories,* class of 1926, and its companion, *Fantastic.*

That was all. Each of these magazines had something to recommend it, of course. They had to have: they were the survivors of the boom days when thirty or forty science-fiction magazines were dividing up the audience, and they would never have made it through the shake-out if they hadn't built a sturdy core of readers. But estimable as they were, there were only six of them all told. And there were large areas of theme, all of them a part of science-fiction's proper concern, that either just wouldn't fit in any of the existing magazines, or were obviously out of place and uncomfortable there when they did.

In fact there was, to be truthful, a sort of mood of dull apathy over the field. It might not always show to the casual readers—the magazines kept coming out, and printed some first-rate stories all along—but it showed in the trade talk of the writers and editors of science fiction. A lot of grand old thunderers of the past had quit writing science fiction entirely. Not much new blood was coming along. The dogged veterans who were sticking with the field because they liked it, and wanted to go on liking it, were still producing—but even they seemed to be writing rather less than before, and most of them were cautiously experimenting with other fields: a yarn for *Playboy* here, a TV script there, a mystery novel or a book on comparative religion or the gee-whiz wonders of factual science. And the talk contained sentiments like "What's the use?" and "I've personally given up reading science fiction—can't get interested," and so on.

Of course there are cycles in public opinion—even in the mood of so small a group as the Ancient and Free-Swinging Order of Science-Fiction Writers. As a veteran of thirty-odd years in the trade, we recall any number of them from the past. Excitement in the early thirties; apathy by the middle of the decade. A recrudescence of vigor around 1940, a dulling just after World War II. A boil-up in 1950 and thereabouts that produced dozens of new magazines and scores of new writers . . . and, of course, a slump that followed a decade or so later.

What we're trying to say is that no doubt the pendulum was about to reverse its swing anyhow. But we did our best to give it a little push.

A condition diagnostic for the disease that was just then giving science-fiction a bilious look was the feeling among many science-fiction writers that there were some stories they might as well not bother to write . . . because they would never be able to find a magazine to print them. For the existing magazines were all specialists. Their policies were (or seemed to be to the writers, which came to much the same thing) exclusive rather than inclusive. They were known by their tabus.

So what we thought was:

First, let's make *If* a magazine that has *no* restrictions on subject matter or development—or at any rate, as nearly

so as is possible to do and still retain some shape to the magazine.

Second, let's go after new blood. Among the readers, by printing the kind of sprightly or hero-adventurous stories that the other magazines appeared to consider beneath their dignity. Among the writers, by going all-out to find and develop new talents. (And for the past four years *If* has made it a policy to publish at least one story in each issue by a writer who has never previously appeared in print. Jonathan Brand, represented in this volume, is one of them. There have been quite a few such writers since then, and we're pleased to report that at least a dozen of them look like going on to be the new "big names" in the field before long.)

Third, let's lure, coax, bribe, or bully as many of the great writers of the past back into production as is humanly possible. And in the past few years we've been able to get at least a score of stories from people like Edward E. Smith, Ph.D., Robert A. Heinlein, Hal Clement, A. E. Van Vogt and others who had either appeared only at rare intervals or, like Van Vogt, had been fourteen years between stories for any science-fiction magazine until he came back to us a couple of years ago. (And has been appearing fairly frequently since. See, for instance, his *The Silkie.*)

Early on we stumbled across a story by a man named Keith Laumer; it was called *The Frozen Planet,* and it concerned the adventures of a whacky interstellar diplomat named Retief. Laumer was then an Air Force captain stationed in England, with plenty of time to write—which was fortunate, because in Retief we recognized a spirit of color, adventure, and excitement that was just what the doctor ordered. We've averaged about two Retief stories out of every three issues ever since, and propose to go on doing so indefinitely. (See *Trick or Treaty,* herein.) A new writer named Fred Saberhagen began producing stories about a wonderful class of robot spacecraft called "the berserkers," left over from an ancient interstellar war and now dedicated to the extermination of every living creature (as in *The Life Hater*). We expect to have many more of them, too.

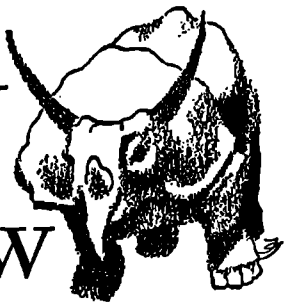
But *If* hasn't been all series stories by a long shot; as much as Retief and the berserkers we prize the singles like Fritz Leiber's *The 64-Square Madhouse* and—well, and all the others we've included herein; and a great many that there wasn't room for.

What we set out to do in *If*, you see, was to provide a magazine that would be fun for readers to read, and fun for writers to write for. What we didn't realize at first, but now enjoy very much, is that that means a magazine that is fun to edit as well!

FREDERIK POHL

Red Bank, New Jersey

WHEN TIME WAS NEW



ROBERT F. YOUNG

The stegosaurus standing beneath the ginkgo tree didn't surprise Carpenter, but the two kids sitting in the branches did. He had expected to meet up with a stegosaurus sooner or later, but he hadn't expected to meet up with a boy and a girl. What in the name of all that was Mesozoic were they doing in the upper Cretaceous Period!

Maybe, he reflected, leaning forward in the driver's seat of his battery-powered triceratank, they were tied in in some way with the anachronistic fossil he had come back to the Age of Dinosaurs to investigate. Certainly the fact that Miss Sands, his chief assistant who had cased the place-time on the timescope, had said nothing about a couple of kids, meant nothing. Timescopes registered only the general lay of the land. They seldom showed anything smaller than a medium-sized mountain.

The stego nudged the trunk of the ginkgo with a hip as high as a hill. The tree gave such a convulsive shudder that the two children nearly fell off the branch they were sitting on and came tumbling down upon the serrated ridge of the monster's back. Their faces were as white as the line of cliffs that showed distantly beyond the scatterings of dogwoods and magnolias and live oaks, and the stands of willows and laurels and fan palms, that patterned the prehistoric plain.

Carpenter braced himself in the driver's seat. "Come on, Sam," he said, addressing the triceratank by nickname. "Let's go get it!"

Since leaving the entry area several hours ago, he had been moving along in low gear in order not to miss any potential clues that might point the way to the anachronistic fossil's place of origin—a locale which, as was usually the case with unidentifiable anachronisms, the paleontological society that employed him had been able to pinpoint much more accurately in time than in space. Now, he threw Sam into second and focused the three horn-howitzers jutting from the reptivehicle's facial regions on the sacral ganglion of the offending ornithischian. *Plugg! Plugg! Plugg!* went the three stun charges as they struck home, and down went the *a posteriori* section of the stego. The anterior section, apprised by the pea-sized brain that something had gone haywire, twisted far enough around for one of the little eyes in the pint-sized head to take in the approaching triceratank, whereupon the stubby forelegs immediately began the herculean task of dragging the ten-ton, humpbacked body out of the theater of operations.

Carpenter grinned. "Take it easy, old mountainsides," he said. "You'll be on all four feet again in less time than it takes to say 'Tyrannosaurus rex'."

After bringing Sam to a halt a dozen yards from the base of the ginko, he looked up at the two terrified children through the one-way transparency of the reptivehicle's skullnacelle. If anything, their faces were even whiter than they had been before. Small wonder. Sam looked more like a triceratops than most real triceratops did. Raising the nacelle, Carpenter recoiled a little from the sudden contrast between the humid heat of the midsummer's day and Sam's air-conditioned interior. He stood up in the driver's compartment and showed himself. "Come on down, you two," he called. "Nobody's going to eat you."

Two pairs of the widest and bluest eyes that he had ever seen came to rest upon his face. In neither pair, however, was there the faintest gleam of understanding. "I said come on down," he repeated. "There's nothing to be afraid of."

The boy turned to the girl, and the two of them began jabbering back and forth in a sing-song tongue that resembled Chinese, but only as the mist resembles the rain.

It had no more in common with modern American than its speakers had with their surroundings. Clearly they hadn't understood a word he had said. But, equally as clearly, they must have found reassurance in his plain and honest face, or perhaps in the gentle tone of his voice. After talking the matter over for a few moments, they left their aerie and shinned down the trunk, the boy going first and helping the girl over the rough spots. He was about nine; she was about eleven.

Carpenter stepped out of the compartment, vaulted down from Sam's steel snout and went over to where they were standing. By this time, the stego had recovered the use of its hind legs and was high-tailing—or rather, high-backing—it over the plain. The boy was wearing a loose, apricot-colored blouse which was considerably stained and disheveled from his recent arboreal activities, a pair of apricot-colored slacks which were similarly stained and disheveled and which terminated at his thin calves and a pair of open-toe sandals. The girl's outfit was identical, save that it was azure in hue and somewhat less stained and disheveled. She was about an inch taller than the boy, but no less thin. Both of them had delicate features, and hair the color of buttercups, and both of them wore expressions so solemn as to be almost ludicrous. It was virtually a sure bet that they were brother and sister.

Gazing earnestly up into Carpenter's gray eyes, the girl gave voice a series of sing-song phrases, each of them, judging from the nuances of pronunciation, representative of a different language.

When she finished, Carpenter shook his head. "I just don't dig you, pumpkin," he said. Then, just to make sure, he repeated the remark in Anglo-Saxon, Aeolic Greek, lower Cro-magnonese, upper-Acheulian, middle English, Iroquoian and Hyannis-Portese, smatterings of which tongues and dialects he had picked up during his various sojourns in the past. No dice. Every word he spoke was just plain Greek to the girl and the boy.

Suddenly the girl's eyes sparkled with excitement, and, plunging her hand into a plastic reticule that hung from the belt that supported her slacks, she withdrew what appeared to be three pairs of earrings. She handed one pair to Carpenter, one to the boy, and kept one for herself; then she and the boy proceeded to affix the objects to their

ear lobes, motioning to Carpenter to do the same. Complying, he discovered that the tiny disks which he had taken for pendants were in reality tiny diaphragms of some kind. Once the minute clamps were tightened into place, they fitted just within the ear openings. The girl regarded his handiwork critically for a moment, then, standing on tiptoe, reached up and adjusted each disk with deft fingers. Satisfied, she stepped back. "Now," she said, in perfect idiomatic English, "we can get through to each other and find out what's what."

Carpenter stared at her. "Well I must say, you caught on to my language awful fast!"

"Oh, we didn't learn it," the boy said. "Those are micro-translators—hearrings. With them on, whatever we say sounds to you the way you would say it, and whatever you say sounds to us the way we would say it."

"I forgot I had them with me," said the girl. "They're standard travelers' equipment, but, not being a traveler in the strict sense of the word, I wouldn't have happened to have them. Only I'd just got back from foreign-activities class when the kidnapers grabbed me. Now," she went on, again gazing earnestly up into Carpenter's eyes, "I think it will be best if we take care of the amenities first, don't you? My name is Marcy, this is my brother Skip, and we are from Greater Mars. What is *your* name, and where are *you* from, kind sir?"

It wasn't easy, but Carpenter managed to keep his voice matter-of-fact. It was no more than fair that he should have. If anything, what he had to say was even more incredible that what he had just heard. "I'm Howard Carpenter, and I'm from Earth, A.D. 2156. That's 79,062,156 years from now." He pointed to the triceratank. "Sam over there is my time machine—among other things. When powered from an outside source, there's practically no limit to his field of operations."

The girl blinked once, and so did the boy. But that was all. "Well," Marcy said presently, "that much is taken care of: you're from Earth Future and we're from Mars Present." She paused, looking at Carpenter curiously. "Is there something you don't understand, Mr. Carpenter?"

Carpenter took a deep breath. He exhaled it. "In point of fact, yes. For one thing, there's the little matter of the difference in gravity between the two planets. Here on

Earth you weigh more than twice as much as you weigh on Mars, and I can't quite figure out how you can move around so effortlessly, to say nothing of how you could have shinned up the trunk of that ginkgo tree."

"Oh, I see what you mean, Mr. Carpenter," Marcy said. "And it's a very good point, too. But obviously you're using Mars Future as a criterion, and just as obviously Mars Future is no longer quite the same as Mars Present. I—I guess a lot can happen in 79,062,156 years. Well, anyway, Mr. Carpenter," she continued, "the Mars of Skip's and my day has a gravity that approximates this planet's. Centuries ago, you see, our engineers artificially increased the existent gravity in order that no more of our atmosphere could escape into space, and successive generations had adapted themselves to the stronger pull. Does that clarify matters for you, Mr. Carpenter?"

He had to admit that it did. "Do you kids have a last name?" he asked.

"No, we don't, Mr. Carpenter. At one time it was the custom for Martians to have last names, but when desentimentalization was introduced, the custom was abolished. Before we proceed any further, Mr. Carpenter, I would like to thank you for saving our lives. It—it was very noble of you."

"You're most welcome," Carpenter said, "but I'm afraid if we go on standing here in the open like this, I'm going to have to save them all over again, and my own to boot. So let's the three of us get inside Sam where it's safe. All right?"

Leading the way over to the triceratank, he vaulted up on the snout and reached down for the girl's hand. After pulling her up beside him, he helped her into the driver's compartment. "There's a small doorway behind the driver's seat," he told her. "Crawl through it and make yourself at home in the cabin just beyond. You'll find a table and chairs and a bunk, plus a cupboard filled with good things to eat. All the comforts of home."

Before she could comply, a weird whistling sound came from above the plain. She glanced at the sky, and her face went dead-white. "It's them!" she gasped. "They've found us already!"

Carpenter saw the dark winged-shapes of the pteranodons then. There were two of them, and they were homing in on the triceratank like a pair of prehistoric dive-bombers. Seizing Skip's hand, he pulled the boy up on the snout, set him in the compartment beside his sister, and told

them to get into the cabin fast. Then he jumped into the driver's seat and slammed down the nacelle.

Just in time: the first pteranodon came so close that its right aileron scraped against Sam's frilled head-shield, and the second came so close that its ventral fuselage brushed Sam's back. Their twin tailjets left two double wakes of bluish smoke.

II

Carpenter sat up straight in the driver's seat. Ailerons? Fuselage? Tailjets?

Pteranodons?

He activated Sam's shield-field and extended it to a distance of two feet beyond the armor-plating, then he threw the reptivehicle into gear. The pteranodons were circling high overhead. "Marcy," he called, "come forward a minute, will you?"

Her buttercup-colored hair tickled his cheek as she leaned over his shoulder. "Yes, Mr. Carpenter?"

"When you saw the pteranodons, you said, 'They've found us already!' What did you mean by that?"

"They're not pteranodons, Mr. Carpenter. Whatever pteranodons are. They're kidnapers, piloting military-surplus flyabouts that probably look like pteranodons. They abducted Skip and me from the preparatory school of the Greater Martian Technological Apotheosization Institute and are holding us for ransom. Earth is their hideout. There are three of them altogether—Roul and Fritad and Holmer. One of them is probably back in the spaceship."

Carpenter was silent for several moments. The Mars of A.D. 2156 was a desolate place of rubble, sand and wind inhabited by a few thousand diehard colonists from Earth and a few hundred thousand diehard Martians, the former living beneath atmosphere-domes and the latter, save for the few who had intermarried with the colonists, living in deep caves where oxygen could still be obtained. But twenty-second century excavations by the Extraterrestrial Archaeological Society *had* unearthed unquestionable evidence to the effect that an ultra-technological civilization similar to that of Earth Present had existed on the planet over 70,000,000 years ago. Surely it was no more than reasonable to assume that such a civilization had had space travel.

That being the case, Earth, during her uppermost Mesozoic Era, must have presented an ideal hideout for Martian criminals, kidnapers included. Certainly such a theory threw considerable light on the anachronisms that kept cropping up in Cretaceous strata. There was of course another way to explain Marcy's and Skip's presence in the Age of Dinosaurs: they could be A.D. 2156 Earth children, and they could have come back via time machine the same as he had. Or they could have been abducted by twenty-second century kidnapers, for that matter, and have been brought back. But, that being so, why should they lie about it?

"Tell me, Marcy," Carpenter said, "do you believe I came from the future?"

"Oh, of course, Mr. Carpenter. And I'm sure Skip does, too. It's—it's kind of *hard* to believe, but I know that someone as nice as you wouldn't tell a fib—especially such a big one."

"Thank you," Carpenter said. "And I believe you came from Greater Mars, which, I imagine, is the planet's largest and most powerful country. Tell me something about your civilization."

"It's a magnificent civilization, Mr. Carpenter. Every day we progress by leaps and bounds, and now that we've licked the instability factor, we'll progress even faster."

" 'The instability factor'?"

"Human emotion. It held us back for years, but it can't any more. Now, when a boy reaches his thirteenth birthday and a girl reaches her fifteenth, they are desentimentalized. And after that, they are able to make calm cool decisions strictly in keeping with pure logic. That way they can achieve maximum efficiency. At the Institute preparatory school, Skip and I are going through what is known as the 'pre-desentimentalization process.' After four more years we'll begin receiving dosages of the desentimentalization drug. Then—"

SKRRRREEEEEEEEEK! went one of the pteranodons as it sideswiped the shield-field.

Carpenter watched it as it wobbled wildly for a moment, and before it shot skyward he caught a glimpse of its occupant. All he saw was an expressionless face, but from its forward location he deduced that the man was lying in a prone position between the two twelve-foot wings.

Marcy was trembling. "I—I think they're out to kill us,

Mr. Carpenter," she said. "They threatened to if we tried to escape. Now that they've got our voices on the ransom tape, they probably figure they don't need us any more."

He reached back and patted her hand where it lay lightly on his shoulder. "It's all right, pumpkin. With old Sam here protecting you, you haven't got a thing to worry about."

"Is—is that really his name?"

"It sure is. Sam Triceratops, Esquire. Sam, this is Marcy. You take good care of her and her brother—do you hear me?" He turned his head and looked into the girl's wide blue eyes. "He says he will. I'll bet you haven't got anybody like him on Mars, have you?"

She shook her head—as standard a Martian gesture, apparently, as it was a terrestrial—and for a moment he thought that a tremulous smile was going to break upon her lips. It didn't, though—not quite. "Indeed we haven't, Mr. Carpenter."

He squinted up through the nacelle at the circling pteranodons (he still thought of them as pteranodons, even though he knew they were not). "Where's this spaceship of theirs, Marcy? Is it far from here?"

She pointed to the left. "Over there. You come to a river, and then a swamp. Skip and I escaped this morning when Fritad, who was guarding the lock, fell asleep. They're a bunch of sleepyheads, always falling asleep when it's their turn to stand guard. Eventually the Greater Martian Space Police will track the ship here; we thought we could hide out until they got here. We crept through the swamp and floated across the river on a log. It—it was awful, with big snakes on legs chasing us, and—and—"

His shoulder informed him that she was trembling again. "Look, I'll tell you what, pumpkin," he said. "You go back to the cabin and fix yourself and Skip something to eat. I don't know what kind of food you're accustomed to, but it can't be too different from what Sam's got in stock. You'll find some square, vacuum-containers in the cupboard—they contain sandwiches. On the refrigerator-shelf just above, you'll find some tall bottles with circlets of little stars—they contain pop. Open some of each, and dig in. Come to think of it, I'm hungry myself, so while you're at it, fix me something, too."

Again, she almost smiled. "All right, Mr. Carpenter. I'll fix you something special."

Alone in the driver's compartment, he surveyed the Cretaceous landscape through the front, lateral and rear viewscopes. A range of young mountains showed far to the left. To the right was the distant line of cliffs. The rear viewscope framed scattered stands of willows, fan palms and dwarf magnolias, beyond which the forested uplands, wherein lay his entry area, began. Far ahead, volcanos smoked with Mesozoic abandon.

79,061,889 years from now, this territory would be part of the state of Montana. 79,062,156 years from now, a group of paleontologists digging somewhere in the vastly changed terrain would unearth the fossil of a modern man who had died 79,062,156 years before his disinterment.

Would the fossil turn out to be his own?

Carpenter grinned, and looked up at the sky to where the two pteranodons still circled. It *could* have been the fossil of a Martian.

He turned the triceratank around and started off in the opposite direction. "Come on, Sam," he said. "Let's see if we can't find a good hiding place where we can lay over for the night. Maybe by morning I'll be able to figure out what to do. Who'd ever have thought we'd wind up playing rescue-team to a couple of kids?"

Sam grunted deep in his gear box and made tracks for the forested uplands.

The trouble with going back in time to investigate anachronisms was that frequently you found yourself the author of the anachronism in question. Take the classic instance of Professor Archibald Quigley.

Whether the story was true or not, no one could say for certain, but, true or not, it pointed up the irony of time travel as nothing else could. A staunch Coleridge admirer, Professor Quigley had been curious for years—or so the story went—as to the identity of the visitor who had called at the farmhouse in Nether Stowey in the county of Somersetshire, England in the year 1797 and interrupted Coleridge while the poet was writing down a poem which he had just composed in his sleep. The visitor had hung around for an hour, and afterward Coleridge hadn't been able to remember the rest of the poem. As a result, *Kubla Khan* was never finished. Eventually, Professor Quigley's curiosity grew to such proportions that he could no longer endure it, and he applied at the Bureau of Time Travel for permission

to return to the place-time in order that he might set his mind at ease. His request was granted, whereupon he handed over half his life-savings without a qualm in exchange for a trip back to the morning in question. Emerging near the farmhouse, he hid in a clump of bushes, watching the front door; then, growing impatient when no one showed up, he went to the door himself, and knocked. Coleridge answered the knock personally, and even though he asked the professor in, the dark look that he gave his visitor was something which the professor never forgot to the end of his days.

Recalling the story, Carpenter chuckled. It wasn't really anything for him to be chuckling about, though, because what had happened to the professor could very well happen to him. Whether he liked it or not, there was a good chance that the fossil which the North American Paleontological Society had sent him back to the Mesozoic Era to investigate might turn out to be his own.

Nevertheless, he refused to let the possibility bother him. For one thing, the minute he found himself in a jam, all he had to do was contact his two assistants, Miss Sands and Peter Detritus, and they would come flying to his aid in Edith the therapod or one of the other reptivehicles which NAPS kept on hand. For another, he had already learned that outside forces were at work in the Cretaceous Period. He wasn't the only candidate for fossildom. Anyway, worrying about such matters was a waste of time: what was going to happen had already happened, and that was all there was to it.

Skip crawled out of the cabin and leaned over the back of the driver's seat. "Marcy sent you up a sandwich and a bottle of pop, Mr. Carpenter," he said, handing over both items. And then, "Can I sit beside you, sir?"

"Sure thing," Carpenter said, moving over.

The boy climbed over the backrest and slid down into the seat. No sooner had he done so than another buttercup-colored head appeared. "Would—would it be all right, Mr. Carpenter, if—if—"

"Move over and make room for her in the middle, Skip."

Sam's head was a good five feet wide, hence the driver's compartment was by no means a small one. But the seat itself was only three feet wide, and accommodating two half-grown kids and a man the size of Carpenter was no

small accomplishment, especially in view of the fact that all three of them were eating sandwiches and drinking pop. Carpenter felt like an indulgent parent taking his offspring on an excursion through a zoo.

And such a zoo! They were in the forest now, and around them Cretaceous oaks and laurels stood; there were willows, too, and screw pines and ginkgos galore, and now and then they passed through incongruous stands of fan palms. Through the undergrowth they glimpsed a huge and lumbering creature that looked like a horse in front and a kangaroo in back. Carpenter identified it as an anatosaurus. In a clearing they came upon a struthiomimus and startled the ostrich-like creature half out of its wits. A spike-backed ankylosaurus glowered at them from behind a clump of sedges, but discreetly refrained from questioning Sam's right of way. Glancing into a treetop, Carpenter saw his first archaeopteryx. Raising his eyes still higher, he saw the circling pteranodons.

He had hoped to lose them after entering the forest, and to this end he held Sam on an erratic course. Obviously, however, they were equipped with matter detectors. A more sophisticated subterfuge would be necessary. There was a chance that he might bring them down with a barrage of stun-charges, but it was a slim one and he decided not to try it in any event. The kidnapers undoubtedly deserved to die for what they had done, but he was not their judge. He would kill them if he had to, but he refused to do it as long as he had an ace up his sleeve.

Turning toward the two children, he saw that they had lost interest in their sandwiches and were looking apprehensively upward. Catching their eye, he winked. "I think it's high time we gave them the slip, don't you?"

"But how, Mr. Carpenter?" Skip asked. "They're locked right on us with their detector-beams. We're just lucky ordinary Martians like them can't buy super Martian weapons. They've got melters, which are a form of iridescers: but if they had real iridescers, we'd be goners."

"We can shake them easy, merely by jumping a little ways back in time. Come on, you two—finish your sandwiches and stop worrying."

Their apprehension vanished, and excitement took its place. "Let's jump back six days," Marcy said. "They'll never find us then because we won't be here yet."

"Can't do it, pumpkin—it would take too much starch out

of Sam. Time-jumping requires a tremendous amount of power. In order for a part-time time-machine like Sam to jump any great distance, its power has to be supplemented by the power of a regular time station. The station propels the reptivehicle back to a pre-established entry area, and the time-traveler drives out of the area and goes about his business. The only way he can get back to the present is by driving back into the area, contacting the station and tapping its power-supply again, or by sending back a distress signal and having someone come to get him in another reptivehicle. At the most, Sam could make about a four-day round trip under his own power but it would burn him out. Once that happened, even the station couldn't pull him back. I think we'd better settle for an hour."

Ironically, the smaller the temporal distance you had to deal with, the more figuring you had to do. After directing the triceratank via the liaison-ring on his right index finger to continue on its present erratic course, Carpenter got busy with pad and pencil, and presently he began punching out arithmetical brain-twisters on the compact computer that was built into the control panel.

Marcy leaned forward, watching him intently. "If it will expedite matters, Mr. Carpenter," she said, "I can do simple sums, such as those you're writing down, in my head. For instance, 828,464,280 times 4,692,438,921 equals 3,887,518-032,130,241,880."

"It may very well at that, pumpkin, but I think we'd better check and make sure, don't you?" He punched out the first two sets of numerals on the calculator, and depressed the multiplication button. 3,887,518,032,130,241,880, the answer panel said. He nearly dropped the pencil.

"She's a mathematical genius," Skip said. "I'm a mechanical genius myself. That's how come we were kidnaped. Our government values geniuses highly. They'll pay a lot of money to get us back."

"Your government? I thought kidnapers preyed on parents, not governments."

"Oh, but our parents aren't responsible for us any more," Marcy explained. "In fact, they've probably forgotten all about us. After the age of six, children become the property of the state. Modern Martian parents are desentimentalized, you see, and don't in the least mind getting rid of—giving up their children."

Carpenter regarded the two solemn faces for some time. "Yes," he said, "I do see at that."

With Marcy's help, he completed the rest of his calculations; then he fed the final set of figures into Sam's frontal ganglion. "Here we go, you two!" he said, and threw the jumpback switch. There was a brief shimmering effect and an almost imperceptible jar. So smoothly did the transition take place that Sam did not even pause in his lumbering walk.

Carpenter turned his wristwatch back from 4:16 P.M. to 3:16 P.M. "Take a look at the sky now, kids. See any more pteranodons?"

They peered up through the foliage. "Not a one, Mr. Carpenter," Marcy said, her eyes warm with admiration. "Not a single one!"

"Say, you've got our scientists beat forty different ways from Sunday!" Skip said. "They think they're pretty smart, but I'll bet they've never even thought of trying to travel in time . . . How far can you jump into the future, Mr. Carpenter—in a regular time-machine, I mean?"

"Given sufficient power, to the end of time—if time does have an end. But traveling beyond one's own present is forbidden by law. The powers-that-be in 2156 consider it bad for a race of people to find out what's going to happen to them before it actually happens, and for once I'm inclined to think that the powers-that-be are right."

He discontinued liaison control, took over manually and set Sam on a course at right angles to their present direction. At length they broke free from the forest onto the plain. In the distance the line of cliffs that he had noticed earlier showed whitely against the blue and hazy sky. "How'd you kids like to camp out for the night?" he asked.

Skip's eyes went round. "Camp out, Mr. Carpenter?"

"Sure. We'll build a fire, cook our food over it, spread our blankets on the ground—regular American Indian style. Maybe we can even find a cave in the cliffs. Think you'd like that?"

Both pairs of eyes were round now. "What's 'American Indian style,' Mr. Carpenter?" Marcy asked.

He told them about the Arapahoes and the Cheyennes and the Crows and the Apaches, and about the buffalo and the great plains and Custer's last stand, and the Conestogas and the frontiersmen (the old ones, not the "new"), and

about Geronimo and Sitting Bull and Cochise, and all the while he talked their eyes remained fastened on his face as though it were the sun and they had never before seen day. When he finished telling them about the settling of the west, he told them about the Civil War and Abraham Lincoln and Generals Grant and Lee and the Gettysburg Address and the Battle of Bull Run and the surrender at Appomattox.

He had never talked so much in all his life. He wondered what had come over him, why he felt so carefree and gay all of a sudden and why nothing seemed to matter except the haze-ridden Cretaceous afternoon and the two round-eyed children sitting beside him. But he did not waste much time wondering. He went on to tell them about the signing of the Declaration of Independence and the American Revolution and George Washington and Thomas Jefferson and Benjamin Franklin and John Adams, and about what a wonderful dream the founding fathers had had and about how much better it would have turned out if opportunistic men had not used it to further their own selfish end and about how relatively wonderful it had turned out anyway, despite the many crimes that had been committed in its name. By the time he finished, evening was on hand. The white cliffs rose up before them, shouldering the darkening sky.

At the base of the cliffs they found a jim-dandy of an untenanted cave, large enough to accommodate both Sam and themselves and with enough room left over to build a campfire. Carpenter drove the reptivehicle inside and parked it in the rear; then he extended the shield-field till it included the cave, the side of the cliff and a large semicircular area at the base of the cliff. After checking the "front yard" and finding that it contained no reptiles except several small and harmless lizards, he put the two children to work gathering firewood. Meanwhile, he generated a one-way illusion-field just within the mouth of the cave. By this time Skip, at least, had shed his reserve. "Can I help build the fire, Mr. Carpenter?" he cried, jumping up and down. "Can I—can I—can I?"

"Skip!" Marcy said.

"It's all right, pumpkin," Carpenter told her. "You can help, too, if you like."

The walls of the cave turned red, then rosy, as young flames grew into full-fledged ones.

Carpenter opened three packages of frankfurters and three packages of rolls and showed his charges how to spear the frankfurters on the end of pointed sticks and roast them over the fire. Afterward he demonstrated how to place a frankfurter in a roll and smother it with mustard, pickle relish, and chopped onions. It was as though he had flung wide magic casements opening on enchanted lands that the two children had not dreamed existed. The last vestiges of solemnity departed from their faces, and during the next half hour they created and consumed six hot dogs apiece. Skip got so excited that he nearly fell into the fire, and the smile that had been trying all afternoon to break upon Marcy's lips at last came through, teaching the flames to burn bright.

Carpenter had made a pot of cocoa in Sam's kitchenette, and nothing more was needed to round out the cookout except marshmallows. Was it remotely possible, he wondered, that his efficient chief assistant had included such nostalgic delicacies among the various supplies in Sam's tail-compartment? It was doubtful at best, but he took a look anyway. To his delight, he found a whole box of them.

Again, he performed a demonstration, while the two children looked on in open-mouthed awe. When the two marshmallows which he had speared on his stick turned golden brown he thought for a moment that Skip's eyes were going to fall out of his head. As for Marcy, she just stood there and stared as though Carpenter had said, "Let there be light!" and the first day had come into being.

Laughing, he removed the marshmallows and handed one to each of them. "Skip!" Marcy said when the boy popped his into his mouth and dispatched it with a single gulp. "Where are your manners?" She ate hers daintily.

After the marshmallow roast, he went outside and cut enough laurel and dogwood branches for three mattresses. He showed the children how to arrange the branches on the cavern floor and how to cover them with the blankets which he took out of Sam's tail-compartment. Skip needed no further invitation to turn in: exhausted from his enthusiastic activities and becalmed by his full stomach, he collapsed upon his blanket as soon as he had it in place. Carpenter got three more blankets, covered him with one of them and turned to Marcy. "You look tired, too, pumpkin."

"Oh, but I'm not, Mr. Carpenter. Not in the least bit. I'm two years older than Skip, you know. He's just a kid."

He folded the remaining two blankets into impromptu pillows and placed them a few feet from the fire. He sat down on one of them; she sat down on the other. All evening, grunts and growls and groans had been coming sporadically from beyond the shield-field; now they were supplanted by an awesome noise that brought to mind a gigantic road-repair machine breaking up old pavement. The cavern floor trembled, and the firelight flickered wildly on the wall. "Sounds like old tyrannosaurus," Carpenter said. "Probably out looking for a midnight snack in the form of a struthiomimus or two."

" 'Tyrannosaurus,' Mr. Carpenter?"

He described the ferocious theropod for her. She nodded after he had finished, and a shudder shook her. "Yes," she said, "Skip and I saw one. It was a little while after we crossed the river. We—we hid in a clump of bushes till he passed. What terrible creatures you have here on Earth, Mr. Carpenter!"

"They no longer exist in my day and age," Carpenter said. "We have terrible 'creatures' of another order—'creatures' that would send old tyrannosaurus high-tailing it for the hills like a flushed rabbit. I shouldn't be complaining, though. Our technological debauchery left us with a cold-war hangover—sure; but it paid off in quite a number of things. Time travel, for one. Interplanetary travel, for another." At this point, the road-repair machine struck a bad stretch of pavement, and, judging from the ungodly series of sounds that ensued, blew a rod to boot. The girl moved closer to him. "Take it easy, pumpkin. There's nothing to worry about. An army of theropods couldn't break through that shield-field."

"Why do you call me 'pumpkin,' Mr. Carpenter? On Mars, a pumpkin is an unpleasant squashy vegetable that grows in swamps and midden-marshes."

He laughed. The sounds from beyond the shield-field diminished, then faded away, as the theropod thundered off in another direction. "On Earth, a pumpkin is quite a nice vegetable—or maybe it's a fruit. Whichever, it's quite respectable. But that's beside the point. 'Pumpkin' is what a man calls a girl when he likes her."

There was a silence. Then, "Do you have a real girl, Mr. Carpenter?"

"Not actually, Marcy. You might say that figuratively speaking I worship one from afar."

"That doesn't sound like very much fun. Who is she?"

"She's my chief assistant at the North American Paleontological Society where I work—Miss Sands. Her first name is 'Elaine,' but I never call her by it. She sees to it that I don't forget anything when I retro-travel, and she cases the placetimes over a time-scope before I start out. Then she and my other assistant, Peter Detritus, stand by, ready to come to the rescue if I should send back a can of chicken soup. You see, a can of chicken soup is our distress signal. It's about as big an object as a paleontologivehicle can handle in most cases, and the word 'chicken' in our language connotes fear."

"But why do you worship her from afar, Mr. Carpenter?"

"Well you see," Carpenter said, "Miss Sands isn't just an ordinary run-of-the-mill girl. She's the cool, aloof type—a goddess, if you know what I mean. Although I don't see how you possibly could. Anyway, you simply don't treat goddesses the way you treat mere girls—you keep your distance and worship them from afar and humbly wait for them to bestow favors upon you. I—I worship her so much, in fact, that every time I'm near her I get so flustrated that I can hardly say anything. Maybe after I get to know her better it'll be different. So far, I've known her three months."

He fell silent. Marcy's hearrings twinkled in the firelight as she turned and looked gently up into his face. "What's the matter, Mr. Carpenter—cat got your tongue?"

"I was just thinking," Carpenter said. "Three months is quite a long time at that—long enough for a man to tell whether a girl is ever going to like him or not. And Miss Sands isn't ever going to like me—I can see that now. Why, she doesn't even look at me unless she absolutely has to, and she won't say two words to me if she can possibly avoid it. So you see, even if I did stop worshipping her from afar and got up enough nerve to tell her that I love her, she would probably only be annoyed and tell me to get lost."

Marcy was indignant. "She must be out of her mind, Mr. Carpenter—just plain out of her mind. She should be ashamed of herself!"

"No, Marcy—you've got her all wrong. You can't expect a

girl as beautiful as she is to go for a good-for-nothing time-bum like me."

"A good-for-nothing time-bum indeed! You know, Mr. Carpenter, I don't think you understand women very well. Why, I'll bet if you told her you love her, she'd throw herself into your arms!"

"You're a romantic, Marcy. In real life, such things don't happen." He stood up. "Well, young lady, I don't know about you, but I'm tired. Shall we call it a day?"

"If you wish to, Mr. Carpenter."

She was asleep by the time he pulled her blanket up to her chin. As he stood there looking down at her, she turned on her side, and the firelight caught the buttercup-hue fuzz on the back of her neck, where her hair had been cut too short, and tinted it red-gold. All he could think of were buttercup-clad meadows in spring, and the warm clean sun rising and ushering in the dew-jeweled day . . .

After checking to see if Skip was all right, he went over and stood in the cave mouth and stared out into the darkness. With tyrannosaurus' departure, the lesser Cretaceous creatures had come out of their hiding places and were making their presence known again. He glimpsed the grotesque shapes of several ornithopods; he saw an ankylosaurus standing immobile by a coppice of fan palms; he heard lizards scurrying both inside and outside the shield-field. A moon subtly different from the one he was most accustomed to was climbing into the prehistoric heavens. The difference lay in the number of meteorite craters. There were far fewer of them now than there would be 79,062,156 years in the future.

He realized presently that although he was still looking at the moon he was no longer seeing it. He was seeing the campfire instead, and the girl and the boy enthusiastically roasting marshmallows. Why hadn't he gotten married and had children? he wondered suddenly. Why had he passed up all the pretty girls he had ever known, only to fall hopelessly in love at the age of thirty-two with a beautiful goddess who preferred not to know he was alive? What had given him the notion that the thrill derived from adventure was somehow superior to the contentment derived from loving and being loved?—that getting the bugs out of historical and pre-historical times was more important than getting the bugs out of his own life? That a lonely room in a boarding house was a man's castle and that drinks drunk in dim-

lit bars with fun-girls he could no longer remember the next day spelled "freedom"?

What treasure had he expected to find in the past that could equal the treasures he had passed up in the future?

The night had grown chill. Before lying down to sleep he added more wood to the fire. He listened to the flames crackle and watched their pale flickerings on the cavern walls. A lizard regarded him with golden eyes out of prehistoric shadows. In the distance, an ornithopod went Waroompf! Beside him in the Mesozoic night the two children breathed softly in their green-bough beds. Presently he slept.

III

The next morning, Carpenter wasted no time in getting the show on the road.

Marcy and Skip were all for remaining in the cave indefinitely, but he explained to them that, were they to stay in one place, the kidnapers would find them that much sooner, and that therefore it would be better if they kept on the move. Thus far, everything he had told them had rung a bell in their language just as everything they had told him had rung a bell in his, but this time, for some reason, he had a hard time getting through to them. Either that, or they just plain didn't want to leave the cave. Leave it they did however—after ablutions performed in Sam's compact lavatory and a breakfast of bacon and eggs cooked in Sam's kitchenette—when he made it clear to them that he was still the boss.

He hadn't as yet decided on a definite plan of action. While trying to make up his mind, he let the triceratank pick its own course over the plain—a feat for which its hypersensitive terrainometer more than qualified.

Actually, he had only two choices: (1)—continue to play big brother to the two children and elude the kidnapers until they gave up or until the cavalry, in the form of the Greater Martian Space Police, arrived on the scene, or (2)—return to the entry-area and signal Miss Sands and Peter Detritus to bring the triceratank back to the present. The second choice was by far the safer course of action. He would have settled for it without hesitation if it had not been for two things: (a) Marcy and Skip, while they undoubtedly would be able to adapt to a civilization as simi-

lar to their own as twenty-second century terrestrial civilization was, might never feel completely at home in it, and (b) sooner or later, they would come face to face with the demoralizing information that their own civilization of 79,062,156 years ago had long since turned to dust and that the technological dreams which they had been taught to regard as gospel had come to nothing. A possible third choice lay in taking them back to Earth Present, keeping them there until such time as the kidnapers gave up and left or until the Space Police showed up, and then returning them to Earth Past; but such a procedure would involve several round trips to the Cretaceous Period. Carpenter knew without having to ask that, owing to the fantastic expense involved, NAPS' budget couldn't support even one such non-paleontological round trip, to say nothing of several.

Pondering the problem, he became aware that someone was tugging on his sleeve. It was Skip, who had come forward and climbed into the driver's seat. "Can I steer him, Mr. Carpenter? Can I?"

Carpenter surveyed the plain through the front, lateral, and rear viewscopes; then he raised Sam's head and took a long look at the sky through the nacelle. A dark speck hovered high above the line of cliffs they had left less than an hour ago. As he watched, it was joined by two others. "Later on, Skip. Right now, I think we've got company."

Skip's eyes had found the specks, too. "The pteranodons again, Mr. Carpenter?"

"I'm afraid so."

The specks grew rapidly larger, resolved into winged shapes with narrow, pointed heads. Marcy had come forward, and her gaze, too, was directed at the sky. This time, she didn't seem to be in the least bit frightened, and neither did Skip. "Are we going to jump back in time again, Mr. Carpenter?" she asked.

"We'll see, pumpkin," he said.

The pteranodons were clearly visible now. There was no question but what they were interested in Sam. Whether they would try attacking him again was another matter. In any event, Carpenter decided that, even though the triceratank's shield-field was in operation, his best bet would be to head for the nearest stand of trees. It was a stand of palmettos, and about half a mile distant. He threw Sam into high, and took over the controls again. "Come on, Sam,"

he said, to keep the kids' morale from faltering, "show Marcy and Skip what you can do!"

Sam took off like a twentieth-century locomotive, his flexible steel legs moving rhythmically, his alloy-hoofs pounding the ground in a thunderous cadence. Nevertheless, he was no match for the pteranodons, and they overtook him easily. The foremost one swooped down a hundred yards ahead, released what looked like a big metal egg and soared skyward.

The metal egg turned out to be a bomb. The crater that it created was so wide that it took all of Carpenter's skill to guide Sam around it without rolling the reptivehicle over. Instantly he revved up the engine and shifted into second. "They're not going to get us that way, are they, old timer?" he said.

"URRRRRRRR!" Sam grunted.

Carpenter glanced at the sky. All of the pteranodons were directly overhead now. Circling. One, two, three, he counted. Three . . . yesterday there had been only two. "Marcy," he said, suddenly excited, "how many kidnapers did you say there were?"

"Three, Mr. Carpenter. Roul and Fritad and Holmer."

"Then they're all up there. That means the ship is unguarded—unless there's a crew."

"No, Mr. Carpenter—there's no crew. They did the piloting themselves."

He lowered his gaze from the circling pteranodons. "Do you kids think you could get inside?"

"Easy," Skip said. "It's a military-surplus flyabout-carrier with standard locks, and standard locks are simple for someone with a little mechanical ability to disengage. That's how come Marcy and I were able to escape in the first place. You just leave everything to me, Mr. Carpenter."

"Good," Carpenter said. "We'll be there waiting for them when they come back."

With Marcy doing the figuring, retro co-ordinate calculus was a breeze. Sam was ready for jump-back in a matter of seconds.

Carpenter waited till they were in the stand of palmettos, then he threw the switch. Again, there was a shimmering effect and a slight jar, and daylight gave way to predawn darkness. Behind them in a cave at the base of the cliffs, another triceratank stood, and another Carpenter

and another Marcy and Skip still slept soundly in their green-bough beds.

"How far did we jump back this time, Mr. Carpenter?" Skip asked.

Carpenter turned on Sam's headlights and began guiding him out of the stand of palmettos. "Four hours. That should give us plenty of time to reach the ship and get set before our friends return. We may even reach it before they start out—assuming of course that they haven't been searching for us round the clock."

"But suppose they spot us in this time-phase?" Marcy objected. "Won't we be in the same pickle we just got out of?"

"It's a possibility, pumpkin. But the odds have it overwhelmingly that they didn't spot us. Otherwise they wouldn't have gone on searching for us—right?"

She gazed at him admiringly. "You know something, Mr. Carpenter? You're pretty smart."

Coming from someone who could multiply 4,692,438,921 by 828,464,280 in her head, it was quite a compliment. However, Carpenter managed to take it in his stride. "I hope you kids can find the ship now," he said.

"We're already on the right course," Skip said. "I know, because I've got a perfect sense of direction. It's camouflaged as a big tree."

For the second time that morning, the sun came up. As had been the case yesterday, Sam's size and mien cowed the various Cretaceous creatures they met although whether tyrannosaurus would have been similarly cowed had they come upon him was a moot question at best. In any case, they didn't come upon him. By eight o'clock they were moving over the same terrain that Carpenter had come to not long after leaving the forested uplands the day before. "Look!" Marcy exclaimed presently. "There's the tree we climbed when the humpbacked monster chased us!"

"It sure is," Skip said. "Boy were we scared!"

Carpenter grinned. "He probably thought you were some species of flora he hadn't tried yet. Good thing for his digestive system that I happened along when I did."

They looked at him blankly for a moment, and at first he thought that the barriers of two different languages and two different thought worlds had been too high for his little joke to surmount. Such, however, did not prove to be the case. First Marcy burst out laughing, and then Skip.

"Mr. Carpenter, if you aren't the darndest!" Marcy cried.

They went on. The landscape grew more and more open, with coppices of palmettos and clusters of fan palms constituting most of the major plant-life. Far to the right, smoking volcanos added their discolored breath to the hazy atmosphere. In the distances ahead, mountains showed, their heads lost in the Mesozoic smog. The humidity was so high that large globules of moisture kept condensing on Sam's nacelle and rolling down like raindrops. Tortoises, lizards, and snakes abounded, and once a real pteranodon glided swiftly by overhead.

At length they came to the river which Marcy had mentioned and which the increasing softness of the ground had been heralding for some time. Looking downstream, Carpenter saw his first brontosaurus.

He pointed it out to the kids, and they stared at it bug-eyed. It was wallowing in the middle of the sluggish stream. Only its small head, its long neck, and the upper part of its back were visible. The neck brought to mind a lofty rubbery tower, but the illusion was marred by the frequency with which the head kept dipping down to the ferns and horse tails that lined the river bank. The poor creature was so enormous that it virtually had to keep eating day and night in order to stay alive.

Carpenter found a shallows and guided Sam across the stream to the opposite bank. The ground was somewhat firmer here, but the firmness was deceiving, for the reptivehicle's terrainometer registered an even higher frequency of bogs. (Lord! Carpenter thought. Suppose the two kids had blundered into one!) Ferns grew in abundance, and there were thick carpets of sassafras and sedges. Palmettos and fan palms were still the rule, but there were occasional ginkgos scattered here and there. One of them was a veritable giant of a tree, towering to a height of over one hundred and fifty feet.

Carpenter stared at it. Cretaceous Period ginkgos generally grew on highground, not low, but a ginkgo the size of this one had no business growing in the Cretaceous Period at all. Moreover, the huge tree was incongruous in other respects. Its trunk was far too thick, for one thing. For another, the lower part of it up to a height of about twenty feet consisted of three slender subtrunks, forming a sort of tripod on which the rest of the tree rested.

At this point, Carpenter became aware that his two

charges were pointing excitedly at the object of his curiosity. "That's *it!*" Skip exclaimed. "That's the *ship!*"

"Well, no wonder it caught my eye," Carpenter said. "They didn't do a very good job of camouflaging it. I can even see one of the fly-about-bays."

Marcy said, "They weren't particularly concerned about how it looks from the ground. It's how it looks from above that counts. Of course, if the Space Police get here in time they'll pick it up sooner or later on their detector-beams, but it will fool them for a while at least."

"You talk as though you don't expect them to get here in time."

"I don't. Oh, they'll get here eventually, Mr. Carpenter, but not for weeks, and maybe even months. It takes a long time for their radar-intelligence department to track a ship, besides which it's a sure bet that they don't even know we've been kidnaped yet. In all previous cases where Institute children have been abducted, the government has paid the ransom first and then notified the Space Police. Of course, even after the ransom has been paid and the children have been returned, the Space Police still launch a search for the kidnapers, and eventually they find their hideout; but naturally the kidnapers are long gone by then."

"I think," Carpenter said, "that it's high time a precedent was established, don't you?"

After parking Sam out of sight in a nearby coppice of palmettos and deactivating the shield-field, he reached in under the driver's seat and pulled out the only hand weapon the triceratank contained—a lightweight but powerful stun-rifle specially designed by NAPS for the protection of time-travel personnel. Slinging it on his shoulder, he threw open the nacelle, stepped out onto Sam's snout and helped the two children down to the ground. The trio approached the ship.

Skip shinned up one of the landing jacks, climbed some distance up the trunk and had the locks open in a matter of seconds. He lowered an aluminum ladder. "Everything's all set, Mr. Carpenter."

Marcy glanced over her shoulder at the palmetto coppice. "Will—will Sam be all right do you think?"

"Of course he will, pumpkin," Carpenter said. "Up with you now."

The ship's air-conditioned interior had a temperature that

paralleled Sam's, the lighting was cool, subdued. Beyond the inner lock, a brief corridor led to a spiral steel stairway that gave access to the decks above and to the engine rooms below. Glancing at his watch, which he had set four hours back, Carpenter saw that the time was 8:24. In a few minutes, the pteranodons would be closing in on the Sam and Carpenter and Marcy and Skip of the "previous" timephase. Even assuming that the three kidnapers headed straight for the ship afterward, there was still time to spare —time enough, certainly, to send a certain message before laying the trap he had in mind. True, he could send the message after Roul and Fritad and Holmer were safely locked in their cabins, but in the event that something went wrong he might not be able to send it at all, so it was better to send it right now. "Okay, you kids," he said, "close the locks and then lead the way to the communications-room."

They obeyed the first order with alacrity, but hedged on the second. Marcy lingered in the corridor, Skip just behind her.

"Why do you want to go to the communications-room, Mr. Carpenter?" she asked.

"So you kids can radio our position to the Space Police and tell them to get here in a hurry. You do know how, I hope."

Skip looked at Marcy. Marcy looked at Skip. After a moment, both of them shook their heads. "Now see here," Carpenter said, annoyed, "you know perfectly well you know how. Why are you pretending you don't?"

Skip looked at the deck. "We—we don't want to go home, Mr. Carpenter."

Carpenter regarded first one solemn face and then the other. "But you've got to be home! Where *else* can you go?"

Neither of them answered. Neither of them looked at him. "It boils down to this," he proceeded presently. "If we succeed in capturing Roul and Fritad and Holmer, fine and dandy. We'll sit tight, and when the Space Police get here we'll turn them over. But if something goes wrong and we don't capture them, we'll at least have an ace up our sleeve in the form of the message you're going to send. Now I'm familiar with the length of time it takes to get from Mars to Earth in the spaceships of my day, but I don't of course know how long your spaceships take. So maybe you two can give me some idea of the length of time that will elapse

between the Space Police's receipt of our message and their arrival here on Earth," he asked.

"With the two planets in their present position, just over four days," Marcy said. "If you like, Mr. Carpenter, I can figure it out for you right down to a fraction of a—"

"That's close enough, pumpkin. Now, up the stairs with you and you too, Skip. Time's a-wasting!"

They complied glumly. The communications-room was on the second deck. Some of the equipment was vaguely familiar to Carpenter, but most of it was Greek. A wide, deck-to-ceiling viewport looked out over the Cretaceous plain, and, glancing down through the ersatz foliage, he found that he could see the palmetto coppice in which Sam was hidden. He scanned the sky for signs of the returning pteranodons. The sky was empty. Turning away from the viewport, he noticed that a fourth party had entered the room. He unslung his stun-rifle and managed to get it halfway to his shoulder; then, ZZZZZZTTT! a metal tube in the fourth party's hand went, and the stun-rifle was no more.

He looked incredulously down at his hand.

IV

The fourth party was a tall, muscular man clad in clothing similar to Marcy's and Skip's, but of a much richer material. The expression on his narrow face contained about as much feeling as a dried fig, and the metal tube in his hand was now directed at the center of Carpenter's forehead. Carpenter didn't need to be told that if he moved so much as one iota he would suffer a fate similar to that suffered by his rifle, but the man vouchsafed the information anyway. "If you move, you melt," he said.

"No, Holmer!" Marcy cried. "Don't you dare harm him. He only helped us because he felt sorry for us."

"I thought you said there were only three of them, pumpkin," Carpenter said, not taking his eyes from Holmer's face.

"That *is* all there are, Mr. Carpenter. Honest! The third pteranodon must have been a drone. They tricked us!"

Holmer should have grinned, but he didn't. There should have been triumph in his tone of voice when he addressed Carpenter, but there wasn't.

"You had to be from the future, friend," he said. "Me

and my buddies cased this place some time ago, and we knew you couldn't be from now. That being so, it wasn't hard for us to figure out that when that tank of yours disappeared yesterday you either jumped ahead in time or jumped back in it, and the odds were two to one that you jumped back. So we gambled on it, figured you'd try the same thing again if you were forced into it, and rigged up a little trap for you, which we figured you'd be smart enough to fall for. You were. The only reason I don't melt you right now is because Roul and Fritad aren't back yet. I want them to get a look at you first. I'll melt you then but good. And the brats, too. We don't need them any more."

Carpenter recoiled. The dictates of pure logic had much in common with the dictates of pure vindictiveness. Probably the pteranodons had been trying to "melt" Marcy, Skip, Sam, and himself almost from the beginning, and if it hadn't been for Sam's shield-field, they undoubtedly would have succeeded. Oh well, Carpenter thought, logic was a two-edged blade, and two could wield it as well as one. "How soon will your buddies be back, Holmer?"

The Martian regarded him blankly. Carpenter tumbled to the fact that the man wasn't wearing hearrings then.

He said to Marcy: "Tell me, pumpkin, if this ship were to fall on its side, would either the change in its position or its impact with the ground be liable to set off an explosion? Answer me with a 'yes' or a 'no' so that our friend here won't know what we're talking about."

"No, Mr. Carpenter."

"And is the structure of the ship sturdy enough to prevent the bulkheads from caving in on us?"

"Yes, Mr. Carpenter."

"How about the equipment in this room? Is it bolted down securely enough to prevent its being torn loose?"

"Yes, Mr. Carpenter."

"Good. Now, as surreptitiously as you can, you and Skip start sidling over to that steel supporting pillar in the center of the deck. When the ship starts to topple, you hold on for dear life."

"What's he saying to you, kid?" Holmer demanded.

Marcy stuck her tongue out at him. "Wouldn't you like to know!" she retorted.

Obviously, the ability to make calm, cool decisions strictly in keeping with pure logic did not demand a concomitant

ability to think fast, for it was not until that moment that the desentimentalized Martian realized that he alone of the four persons present was not wearing hearrings.

Reaching into the small pouch that hung at his side, he withdrew a pair. Then, keeping his melter directed at Carpenter's forehead with one hand, he began attaching them to his ears with the other. Meanwhile, Carpenter ran his right thumb over the tiny, graduated nodules of the liaison-ring on his right index finger, and when he found the ones he wanted, he pressed them in their proper sequence. On the plain below, Sam stuck his snout out of the palmetto coppice.

Carpenter concentrated, his thoughts riding the tele-circuit that now connected his mind with Sam's sacral ganglion: *Retract your horn-howitzers and raise your nacelle-shield, Sam.* Sam did so. *Now, back off, and get a good run, charge the landing-jack on your right, and knock it out. Then get the hell out of the way!*

Sam came out of the coppice, turned and trotted a hundred yards out on the plain. There he turned again, aligning himself for the forthcoming encounter. He started out slowly, geared himself into second. The sound of his hoofbeats climbed into a thunderous crescendo and penetrated the bulkhead of the communications-room, and Holmer, who had finally gotten his hearrings into place, gave a start and stepped over to the viewport.

By this time Sam was streaking toward the ship like an ornithischian battering-ram. No one with an IQ in excess of 75 could have failed to foresee what was shortly going to happen.

Holmer had an IQ considerably in excess of 75, but sometimes having a few brains is just as dangerous as having a little knowledge. It was so now. Forgetting Carpenter completely, the Martian threw a small lever to the right of the viewscope, causing the thick, unbreakable glass to retract into the bulkhead; then he leaned out through the resultant aperture and directed his melter toward the ground. Simultaneously, Sam made contact with the landing-jack, and Holmer went flying through the aperture like a jet-propelled Darius Green.

The two kids were already clinging to the supporting pillar. With a leap, Carpenter joined them. "Hang on, you two!" he shouted, and proceeded to practice what he preached. The downward journey was slow at first, but it

rapidly picked up momentum. Somebody should have yelled, "TIMBER!" Nobody did, but that didn't dissuade the ginkgo from fulfilling its destiny. Lizards scampered, tortoises scrabbled and sauropods gaped for miles around. KRRRRRRUUUUUUMMMP! The impact tore both Carpenter and the children from the pillar, but he managed to grab them and cushion their fall with his body. His back struck the bulkhead, and his breath blasted from his lungs. Somebody turned out the lights.

At length, somebody turned them back on again. He saw Marcy's face hovering like a small pale moon above his own. Her eyes were like autumn asters after the first frost.

She had loosened his collar and she was patting his cheeks and she was crying. He grinned up at her, got gingerly to his feet and looked around. The communications-room hadn't changed any, but it looked different. That was because he was standing on the bulkhead instead of the deck. It was also because he was still dazed.

Marcy, tears running down her cheeks, wailed, "I was afraid you were dead, Mr. Carpenter!"

He rumpled her buttercup-colored hair. "Fooled you, didn't I?"

At this point, Skip entered the room through the now horizontal doorway, a small container clutched in his hand. His face lit up when he saw Carpenter. "I went after some recuperative gas, but I guess you don't need it after all. Gee, I'm glad you're all right, Mr. Carpenter!"

"I take it you kids are, too," Carpenter said.

He was relieved when both of them said they were. Still somewhat dazed, he clambered up the concave bulkhead to the viewport and looked out. Sam was nowhere to be seen. Remembering that he was still in tele-circuit contact, he ordered the triceratank to home in, after which he climbed through the viewport, lowered himself to the ground and began looking for Holmer's body. When he failed to find it he thought at first that the man had survived the fall and had made off into the surrounding scenery.

Then he came to one of the bogs with which the area was infested, and saw its roiled surface. He shuddered. Well, anyway, he knew who the fossil was.

Or rather, who the fossil had been.

Sam came trotting up, circumventing the bog in response to the Terrainometer's stimuli. Carpenter patted the reptive-

hicle's head, which was not in the least damaged from its recent collision with the landing-jack; then he broke off liaison and returned to the ship. Marcy and Skip were standing in the viewport, staring at the sky. Turning, Carpenter stared at the sky, too. There were three specks in it.

His mind cleared completely then, and he lifted the two children down to the ground. "Run for Sam!" he said. "Hurry!"

He set out after them. They easily outmatched his longer but far-slower strides, gaining the reptivehicle and clambering into the driver's compartment before he had covered half the distance. The pteranodons were close now, and he could see their shadows rushing toward him across the ground. Unfortunately, however, he failed to see the small tortoise that was trying frantically to get out of his way. He tripped over it and went sprawling on his face.

Glancing up, he saw that Marcy and Skip had closed Sam's nacelle. A moment later, to his consternation the triceratank disappeared.

Suddenly another shadow crept across the land, a shadow so vast that it swallowed those cast by the pteranodons.

Turning on his side, Carpenter saw the ship. It was settling down on the plain like an extraterrestrial Empire State Building, and, as he watched, three rainbow-beams of light shot forth from its upper section and the three pteranodons went PFFFFFFTTT! PFFFFFFTT! PFFFFFFTTT! and were no more.

The Empire State Building came solidly to rest, opened its street doors and extended a gangplank the width of a Fifth Avenue sidewalk. Through the doors and down the sidewalk came the cavalry. Looking in the other direction, Carpenter saw that Sam had reappeared in exactly the same spot from which he had vanished. His nacelle had reopened, and Marcy and Skip were climbing out of the driver's compartment in the midst of a cloud of bluish smoke. Carpenter understood what had happened then, and he kissed the twenty-second century good-by.

The two kids came running up just as the commander of the cavalry stepped to the forefront of his troops. Actually, the troops were six tall Martians wearing deep-purple togas and stern expressions and carrying melters, while the commander was an even taller Martian wearing an even purpler toga and an even sterner expression and carrying what

looked like a fairy godmother's wand. The dirty look which he accorded Carpenter was duplicated a moment later by the dirty look which he accorded the two children.

They were helping Carpenter to his feet. Not that he needed help in a physical sense. It was just that he was so overwhelmed by the rapid turn of events that he couldn't quite get his bearings back. Marcy was sobbing.

"We didn't want to burn Sam out, Mr. Carpenter," she said, all in a rush, "but jumping back four days, two hours, sixteen minutes and three and three-quarter seconds and sneaking on board the kidnaper's ship and sending a message to space Police Headquarters was the only way we could get them here in time to save your life. I told them what a pickle you'd be in, and to have their iridescers ready. Then, just as we were about to come back to the present Sam's time-travel unit broke down and Skip had to fix it, and then Sam went and burned out anyway, and oh, Mr. Carpenter, I'm so sorry! Now, you'll never be able to go back to the year 79,062,156 again and see Miss Sands, and—"

Carpenter patted her on the shoulder. "It's all right, pumpkin. It's all right. You did the right thing, and I'm proud of you for it." He shook his head in admiration. "You sure computed it to a T, didn't you?"

A smile broke through the rain of tears, and the rain went away. "I'm—I'm pretty good at computations, Mr. Carpenter."

"But *I* threw the switch," Skip said. "And *I* fixed Sam's time-travel unit when it broke down."

Carpenter grinned. "I know you did, Skip. I think the two of you are just wonderful." He faced the tall Martian with the fairy-godmother wand, noted that the man already had a pair of hearrings attached to his ears. "I guess I'm almost as beholden to you as I am to Marcy and Skip," Carpenter said, "and I'm duly grateful. And now I'm afraid I'm going to impose on your good will still further and ask you to take me to Mars with you. My reptivehicle's burned out and can't possibly be repaired by anyone except a group of technological specialists working in an ultra-modern machine shop with all the trimmings, which means I have no way either of contacting the era from which I came, or of getting back to it."

"My name is Hautor," the tall Martian said. He turned to Marcy. "Recount to me, with the maximum degree of conciseness of which you are capable, the events beginning

with your arrival on this planet and leading up to the present moment."

Marcy did so. "So you see, sir," she concluded, "in helping Skip and me, Mr. Carpenter has got himself in quite a pickle. He can't return to his own era, and he can't survive in this one. We simply have to take him back to Mars with us, and that's all there is to it!"

Hautor made no comment. Almost casually, he raised his fairy-godmother wand, pointed it toward the kidnapers' prostrate ship and did something to the handle that caused the wand proper to glow in brilliant greens and blues. Presently a rainbow beam of light flashed forth from the Empire State Building, struck the kidnapers' ship and relegated it to the same fate as that suffered by the three pteranodons. Turning, Hautor faced two of his men.

"Put the children on board the police cruiser and see to it that they are suitably cared for." Finally, he turned back to Carpenter. "The government of Greater Mars is grateful for the services you have rendered it in the preserving of the lives of two of its most valuable citizens-to-be. I thank you in its behalf. And now, Mr. Carpenter, good-by."

Hautor started to turn away. Instantly Marcy and Skip ran to his side. "You can't leave him here!" Marcy cried. "He'll die!"

Hautor signaled to the two Martians whom he had spoken to a moment ago. They leaped forward, seized the two children and began dragging them toward the Empire State Building. "Look," Carpenter said, somewhat staggered by the new turn of events, but still on his feet, "I'm not begging for my life, but I can do you people some good if you'll make room for me in your society. I can give you time travel, for one thing. For another—"

"Mr. Carpenter, if we had wanted time travel, we would have devised it long ago. Time travel is the pursuit of fools. The pattern of the past is set, and cannot be changed; and in it that has not already been done. Why try? And as for the future, who but an imbecile would want to know what tomorrow will bring?"

"All right," Carpenter said. "I won't invent time travel then, I'll keep my mouth shut and settle down and be a good solid citizen."

"You wouldn't and you know it, Mr. Carpenter—unless we desentimentalized you. And I can tell from the expres-

sion on your face that you would never voluntarily submit to such a solution. You would rather remain here in your prehistoric past and die."

"Now that you mentioned it, I would at that," Carpenter said. "Compared to you people, *Tyrannosaurus rex* is a Salvation Army worker, and all the other dinosaurs, saurischians and ornithischians alike, have hearts of purest gold. But it seems to me that there is one simple thing which you could do in my behalf without severely affecting your desentimentalized equilibrium. You could give me a weapon to replace the one that Holmer disintegrated."

Hautor shook his head. "That is one thing I cannot do, Mr. Carpenter, because a weapon could conceivably become a fossil, and thereby make me responsible for an anachronism. I am already potentially responsible for one in the form of Holmer's irretrievable body, and I refuse to risk being responsible for any more. Why do you think I iridesced the kidnapers' ship?"

"Mr. Carpenter," Skip called from the gangplank, up which two Martians were dragging him and his sister, "maybe Sam's not completely burned out. Maybe you can rev up enough juice to at least send back a can of chicken soup."

"I'm afraid not, Skip," Carpenter called back. "But it's all right, you kids," he went on. "Don't you worry about me —I'll get along okay. Animals have always liked me, so why shouldn't reptiles! They're animals, too."

"Oh, Mr. Carpenter!" Marcy cried. "I'm so sorry this happened! Why didn't you take us back to 79,062,156 with you? We wanted you to all along, but we were afraid to say so."

"I wish I had, pumpkin—I wish I had." Suddenly, he couldn't see very well, and he turned away. When he looked back, the two Martians were dragging Marcy and Skip through the locks. He waved. "Good-by, you kids," he called. "I'll never forget you."

Marcy made a last desperate effort to free herself. She almost, but not quite, succeeded. The autumn asters of her eyes were twinkling with tears like morning dew. "I love you, Mr. Carpenter!" she cried, just before she and Skip were dragged out of sight. "I'll love you for the rest of my life!"

With two deft movements, Hautor flicked the hearrings from Carpenter's ears; then he and the rest of the cavalry

climbed the gangplank and entered the ship. Some cavalry! Carpenter thought. He watched the street doors close, saw the Empire State Building quiver.

Presently it lifted and hovered majestically, stabbed into the sky just above the ground on a wash of blinding light. It rose, effortlessly, and became a star. It wasn't a falling star, but he wished upon it anyway. "I wish both of you happiness," he said, "and I wish that they never take your hearts away, because your hearts are one of the nicest things about you."

The star faded then, and winked out. He stood all alone on the vast plain.

The ground trembled. Turning, he caught a great dark movement to the right of a trio of fan palms. A moment later, he made out the huge head and the massive, upright body. He recoiled as two rows of saberlike teeth glittered in the sun.

Tyrannosaurus!

V

A burned-out reptivehicle was better than no reptivehicle at all. Carpenter made tracks for Sam.

In the driver's compartment, with the nacelle tightly closed, he watched the theropod's approach. There was no question but what it had seen him, and no question but what it was headed straight for Sam. Marcy and Skip had retracted the nacelle-shield, which left Carpenter pretty much of a sitting duck; however, he didn't retreat to Sam's cabin just yet, for they had also re-projected the horn-howitzers.

Although the howitzers were no longer maneuverable, they were still operable. If the tyrannosaurus came within their fixed range it could be put temporarily out of action with a volley of stun-charges. Right now, it was approaching Sam at right angles to the direction in which the howitzers were pointing, but there was a chance that it might pass in front of them before closing in. Carpenter considered it a chance worth taking.

He crouched low in the driver's seat, his right hand within easy reaching distance of the triggers. With the air-conditioning unit no longer functioning, the interior of the triceratank was hot and stuffy. To add to his discomfort, the

air was permeated with the acrid smell of burnt wiring. He shut his mind to both annoyances, and concentrated on the task at hand.

The theropod was so close now that he could see its atrophied forelegs. They dangled down from the neck-width shoulders like the wizened legs of a creature one tenth its size. Over them, a full twenty-five feet above the ground and attached to a neck the girth of a tree trunk, loomed the huge head; below them, the grotesque torso swelled out and down to the hind legs. The mighty tail dragged over the landscape, adding the cracking and splitting noises of crushed shrubbery to the thunder thrown forth each time the enormous bird-claw feet came into contact with the terrain. Carpenter should have been terrified. He was at a loss to understand why he wasn't.

Several yards from the triceratank, the tyrannosaurus came to a halt and its partially opened jaws began opening wider.

The foot-and-a-half-high teeth with which they were equipped could grind through Sam's nacelle as though it was made of tissue paper, and from all indications, that was just what they were going to do. Carpenter prepared himself for a hasty retreat into Sam's cabin; then just when things looked blackest, the therodon, as though dissatisfied with its present angle of attack, moved around in front of the reptivehicle, providing him with the opportunity he had been hoping for. His fingers leaped to the first of the trio of triggers, touched, but did not squeeze it. Why wasn't he afraid?

He looked up through the nacelle at the horrendous head. The huge jaws had continued to part, and now the whole top of the skull was raising into a vertical position. As he stared, a pretty head of quite another nature appeared over the lower row of teeth and two bright blue eyes peered down at him.

"Miss Sands!" he gasped, and nearly fell out of the driver's seat.

Recovering himself, he threw open the nacelle, stepped out on Sam's snout and gave the tyrannosaurus an affectionate pat on the stomach. "Edith," he said. "Edith, you doll, you!"

"Are you all right, Mr. Carpenter?" Miss Sands called down.

"Just fine," Carpenter said. "Am I glad to see *you*, Miss Sands!"

Another head appeared beside Miss Sands. The familiar chestnut haired head of Peter Detritus. "Are you glad to see me too, Mr. Carpenter?"

"Well, I guess, Pete old buddy!"

Miss Sands lowered Edith's lip ladder, and the two of them climbed down. Peter Detritus was carrying a tow cable, and presently he proceeded to affix it to Sam's snout and Edith's tail respectively. Carpenter lent a hand. "How'd you know I was in a pickle?" he asked. "I didn't send back any soup."

"We had a hunch," Peter Detritus said. He turned to Miss Sands. "There, she's all set, Sandy."

"Well, let's be on our way then," Miss Sands said. She looked at Carpenter, then looked quickly away. "If, of course, your mission is completed, Mr. Carpenter."

Now that the excitement was over he was finding her presence just as disconcerting as he usually found it. "It's completed all right, Miss Sands," he said to the left pocket of her field blouse. "You'll never believe how it turned out, either."

"Oh, I wouldn't say that. Sometimes the most unbelievable things of all turn out to be the most believable ones. I'll fix you something to eat, Mr. Carpenter."

She climbed agilely up the ladder. Carpenter followed, and Peter Detritus brought up the rear. "I'll take the controls, Mr. Carpenter," the latter said, pulling the ladder. "You look bushed."

"I am," Carpenter said.

In Edith's cabin, he collapsed on the bunk. Miss Sands went over to the kitchenette and put water on to boil for coffee and took a boiled ham down from the refrigerator-shelf. Up in the driver's compartment, Peter Detritus closed the nacelle and threw Edith into gear.

He was a good driver, Peter Detritus was, and he would rather drive than eat. Not only that, he could take a paleontologivehicle apart and put it back together again blindfolded. Funny, why he and Miss Sands had never gone for each other. They were both so attractive, you'd have thought they would have fallen in love long ago. Carpenter was glad that they hadn't of course—not that it was ever going to do him any good.

He wondered why they had made no mention of the

Space Police ship. Surely, they must have seen it when it blasted off . . .

Edith was moving over the plain in the direction of the uplands now, and through the cabin viewport he could see Sam shambling along behind on motion-provoked legs. In the kitchenette, Miss Sands was slicing ham. Carpenter concentrated on her, trying to drive away the sadness he felt over his parting with Marcy and Skip. His eyes touched her slender shapely legs, her slender waist, rose to her cupreous head, lingering for a moment on the silken fuzz that grew charmingly on the back of her neck where her hair had been cut too short. Strange, how people's hair got darker when they grew older—

Carpenter lay motionlessly on the bunk. "Miss Sands," he said suddenly, "how much is 499,999,991 times 8,003,432,111?"

"400,171,598,369,111,001," Miss Sands answered.

Abruptly she gave a start. Then she went on slicing ham.

Slowly, Carpenter sat up. He lowered his feet to the floor. A tightness took over in his chest and he could barely breathe.

Take a pair of lonely kids. One of them a mathematical genius, the other a mechanical genius. A pair of lonely kids who have never known what it is like to be loved in all their lonely lives. Now, transport them to another planet and put them in a reptivehicle that for all its practicability is still a huge and delightful toy, and treat them to an impromptu Cretaceous camping trip, and show them the first affection they have ever known. Finally, take these things away from them and simultaneously provide them with a supreme motivation for getting them back—the need to save a human life—and include in that motivation the inbuilt possibility that by saving that life they can—in another but no less real sense—save their own.

But 79,062,156 years! 49,000,000 miles! It *couldn't* be! *Why* couldn't it?

They could have built the machine in secret at the preparatory school, all the while pretending to go along with the "pre-desentimentalization process"; then, just before they were scheduled to begin receiving doses of the desentimentalization drug, they could have entered the machine and time-jumped far into the future.

Granted, such a time-jump would have required a vast amount of power. And granted, the Martian landscape they

would have emerged on would have given them the shock of their lives. But they were resourceful kids, easily resourceful enough to have tapped the nearest major power source, and certainly resourceful enough to have endured the climate and the atmosphere of Mars Present until they located one of the Martian oxygen caves. The Martians would have taken care of them and have taught them all they needed to know to pass themselves off as terrestrials in one of the domed colonies. As for the colonists, they wouldn't have asked too many questions because they would have been overjoyed to add two newcomers to their underpopulated community. After that, it would merely have been a matter of the two children's biding their time till they grew old enough to work and earn their passage to Earth. Once on Earth, it would merely have been a matter of acquiring the necessary education to equip them for paleontological work.

Sure, it would have taken them years to accomplish such a mission, but they would have anticipated that, and have time-jumped to a point in time far enough in advance of the year A.D. 2156 to have enabled them to do what they had to do. They had played it pretty close at that, though. Miss Sands had only been with NAPS for three months, and as for Peter Detritus, he had been hired a month later. On Miss Sands' recommendation, of course.

They had simply come the long way around—that was all. Traveled 49,000,000 miles to Mars Past, 79,062,100 years to Mars Present, 49,000,000 miles to Earth Present, and 79,062,156 years to Earth Past.

Carpenter sat there, stunned.

Had they known they were going to turn out to be Miss Sands and Peter Detritus? he wondered. They must have—or, if not, they must have gambled on it and taken the names when they joined the colonists. All of which created something of a paradox. But it was a minor one at best, not worth worrying about. In any event, the names certainly fitted them.

But why had they passed themselves off as strangers?

Well, they had been strangers, hadn't they? And if they had told him the truth, would he have believed them?

Of course he wouldn't have.

None of which explained why Miss Sands disliked him.

But *did* she dislike him? Maybe her reaction to him resulted from the same cause that was responsible for his reaction to her. Maybe *she* worshipped *him* as much as he

worshipped her, and became as tongue-tied in his presence as he did in hers. Maybe the reason she had never looked at him any longer than was absolutely necessary was that she had been afraid of betraying the way she felt before he learned the truth about her.

He found it suddenly hard to see.

The smooth purring of Edith's battery-powered motor filled the cabin. For quite some time now there had been no other sound.

"What's the matter?" Miss Sands said suddenly out of clear blue sky. "Cat got your tongue, Mr. Carpenter?"

He stood up then. She had turned, and was facing him. Her eyes were misted, and she was looking at him gently, adoringly . . . the way she had looked at him last night, in one sense, and 79,062,156 years ago in another, by a Mesozoic campfire in an upper Cretaceous cave. *Why I'll bet if you told her you loved her, she'd throw herself into your arms!*

"I love you, pumpkin," Carpenter said.

And Miss Sands did.

FATHER OF THE STARS

FREDERIK POHL

Norman Marchand sat in the wings of the ballroom's small stage, on a leather hassock someone had found for him. There were fifteen hundred people outside in the ballroom, waiting to do him honor.

Marchand remembered the ballroom very well. He had once owned it. Forty . . . no, it wasn't forty. Not even fifty. Sixty years ago it had been, sixty and more years ago that he and Joyce had danced in that ballroom. Then the hotel was the newest on Earth and he was the newly married son of the man who had built it, and the party was the reception for his wedding to Joyce. Of course, none of these people would know about that. But Marchand remembered . . . *Oh, Joyce, my very dear!* But she had been dead a long time now.

It was a noisy crowd. He peered out through the wings, and could see the head table filling up. There was the Vice-President of the United States shaking hands with the Governor of Ontario as though, for the moment, they had forgotten they were of different parties. There was Linfox, from the Institute, obligingly helping a chimpanzee into the chair next to what, judging by the microphones ranked before it, would probably be Marchand's own. Linfox seemed a little ill at ease with the chimp. The chimpanzee had no

doubt been smithed, but the imposition of human intelligence did not lengthen its ape's legs.

Then Dan Fleury appeared, up the steps from the floor of the ballroom where the rest of the fifteen hundred diners were taking their places.

Fleury didn't look well at all, Marchand thought—not without a small touch of satisfaction, since Fleury was fifteen years younger than himself. Still, Marchand wasn't jealous. Not even of the young bellman who had brought him the hassock, twenty years at the most and built like a fullback. One life was enough for a man to live. Especially when you had accomplished the dream you had set out to bring to fruition. Or almost.

Of course, it cost him everything his father left. But what else was money for?

"It's time to go in, sir. May I help you?" It was the young fullback nearly bursting his bellman's uniform with the huge hard muscles of youth. He was very solicitous. One of the nice things about having this testimonial dinner in a Marchand hotel was that the staff was as deferential to him as though he still owned the place. Probably that was why the committee had picked it, Marchand ruminated, quaint and old-fashioned as the hotel must seem now. Though at one time—

He recollected himself. "I'm sorry, young man. I was—woolgathering. Thank you."

He stood up, slowly but not very painfully, considering that it had been a long day. As the fullback walked him onto the stage the applause was enough to drive down the automatic volume control on his hearing aid.

For that reason he missed the first words from Dan Fleury. No doubt they were complimentary. Very carefully he lowered himself into his chair, and as the clapping eased off he was able to begin to hear the words.

Dan Fleury was still a tall man, built like a barrel, with bushy eyebrows and a huge mane of hair. He had helped Marchand's mad project for thrusting man into space from its very beginnings. He said as much now. "Man's grandest dream!" he roared. "The conquering of the stars themselves! And here is the one man who taught us how to dream it, Norman Marchand!"

Marchand bowed to the storm of applause.

Again his hearing aid saved his ears and cost him the

next few words: "—and now that we are on the threshold of success," Fleury was booming, "it is altogether fitting that we should gather here tonight . . . to join in fellowship and in the expression of that grand hope . . . to rededicate ourselves to its fulfillment . . . and to pay our respects, and give of our love, to the man who first showed us what dream to have!"

While the AVC registered the power of Dan Fleury's oratory Marchand smiled out on the foggy sea of faces. It was, he thought, almost cruel of Fleury to put it like that. The threshold of success indeed! How many years now had they waited on it patiently?—and the door still locked in their faces. Of course, he thought wryly, they must have calculated that the testimonial dinner would have to be held soon unless they wanted a cadaver for a guest. But still . . . There was something in his tone. Was there— Could there be—

There could not, he told himself firmly. There was no news, no breakthrough, no report from one of the wandering ships, no dream come true at last. He would have been the first to know. Not for anything would they have kept a thing like that from him. And he did not know that thing.

"—and now," Fleury was saying, "I won't keep you from your dinners. There will be many a long, strong speech to help your digestions afterwards, I promise you! But now, let's eat!"

Laughter. Applause. A buzz and clash of forks.

The injunction to eat did not, of course, include Norman Marchand. He sat with his hands in his lap, watching them dig in, smiling and feeling just a touch deprived, with the wry regret of the very old. He didn't envy the young people anything *really,* he told himself. Not their health, their youth or their life expectancy. But he envied them the bowls of ice.

He tried to pretend he enjoyed his wine and the huge pink shrimp in crackers and milk. According to Asa Czerny, who ought to know since he had kept Marchand alive this long, he had a clear choice. He could eat whatever he chose, or he could stay alive. For a while. And ever since Czerny had been good enough, or despairing enough, to give him a maximum date for his life expectancy, Marchand had in idle moments tried to calculate just how much of those remaining months he was willing to give up for one really good meal. He rather believed that when Czerny looked

up at him after the weekly medical checkup and said that only days were left, that he would take those last days and trade them in for a sauerbraten with potato pancakes and sweet-sour red cabbage on the side. But that time was not yet. With any kind of luck he still had a month. Perhaps as much as two . . . "I beg your—pardon," he said, half-turning to the chimpanzee. Even smithed, the animal spoke so poorly that Marchand had not at first known that he was being addressed.

He should not have turned.

His wrist had lost its suppleness; the spoon in his hand tilted: the soggy crackers fell. He made the mistake of trying to move his knee out of the way—it was bad enough to be old, he did not want to be sloppy—and he moved too quickly.

The chair was at the very edge of the little platform. He felt himself going over.

Ninety-six is too old to be falling on your head, he thought; if I was going to do this sort of thing I might just as well have eaten some of those shrimp . . . But he did not kill himself.

He only knocked himself unconscious. And not for very long at that, because he began to wake up while they were still carrying him back to his dressing room behind the stage.

Once upon a time, Norman Marchand had given his life to a hope.

Rich, intelligent, married to a girl of beauty and tenderness, he had taken everything he owned and given it to the Institute for Colonizing Extra-Solar Planets. He had, to begin with, given away several million dollars.

That was the whole of the personal fortune his father had left him, and it was nowhere near enough to do the job. It was only a catalyst. He had used it to hire publicity men, fund-raisers, investment counselors, foundation managers. He had spent it on documentary films and on TV commercials. With it he had financed cocktail parties for United States senators and prize contests for the nation's sixth grades, and he had done what he set out to do.

He had raised money. A very great deal of money.

He had taken all the money he had begged and teased out of the pockets of the world and used it to finance the building of twenty-six great ships, each the size of a

dozen ocean liners, and he had cast them into space like a farmer sowing wheat upon the wind.

I tried, he whispered to himself, returning from the darkest place he had ever seen. I wanted to see man reach out and touch a new home . . . and I wanted to be the one to guide him there . . .

And someone was saying: "—he know about it, did he? But we were trying to keep it quiet—" Someone else told the first person to shut his mouth. Marchand opened his eyes.

Czerny was there, unsmiling. He saw that Marchand was conscious. "You're all right," he said, and Marchand knew that it was true, since Czerny was scowling angrily at him. If the news had been bad he would have smiled— "No you don't!" cried Czerny, catching him by the shoulder. "You stay right there. You're going home to bed."

"But you said I was all right."

"I meant you were still breathing. Don't push it, Norm."

Marchand protested, "But the dinner—I ought to be there—"

Asa Czerny had cared for Marchand for thirty years. They had gone fishing together, and once or twice they had gotten drunk. Czerny would not have refused for nothing. He only shook his head.

Marchand slumped back. Behind Czerny the chimpanzee was squatting silently on the edge of a chair, watching. He's worried, Marchand thought. Worried because he feels it's his fault, what happened to me. The thought gave him enough strength to say: "Stupid of me to fall like that, Mr. —I'm sorry."

Czerny supplied the introduction. "This is Duane Ferguson, Norman. He was supernumerary on the Copernicus. Smithed. He's attending the dinner in costume, as it were." The chimpanzee nodded but did not speak. He was watching that silver-tongued orator, Dan Fleury, who seemed upset. "Where is that ambulance?" demanded Czerny, with a doctor's impatience with internes, and the fullback in bellman's uniform hurried silently away to find out.

The champanzee made a barking sound, clearing his throat. "Ghwadd," he said—more or less: the German *ich* sound followed by the word "what"—"Ghwadd did jou mee-an aboud evdial, Midda Vleury?"

Dan Fleury turned and looked at the chimp blankly. But

not, Marchand thought suddenly, as though he didn't know what the chimp was talking about. Only as if he didn't intend to answer.

Marchand rasped, "What's this 'evdial,' Dan?"

"Search me. Look, Mr. Ferguson, perhaps we'd better go outside."

"Ghwadd?" The harsh barking voice struggled against the simian body it occupied, and came closer to the sounds it meant to emit. "*What* did you bean—did you *mean*?"

He was a rude young man, Marchand thought irritably. The fellow was tiring him.

Although there was something about that insistent question—

Marchand winced and felt for a moment as though he were going to throw up. It passed, leaving him wobbly. It wasn't possible he had broken anything, he told himself. Czerny would not lie about that. But he felt as if he had.

He lost interest in the chimp-man, did not even turn his head as Fleury hurried him out of the room, whispering to him in an agitated and lowpitched chirrup like the scratching of a cricket's legs.

If a man wanted to abandon his God-given human body and put his mind, thoughts and—yes—soul into the corpus of an anthropoid, there was nothing in that to entitle him to any special consideration from Norman Marchand.

Of course not! Marchand rehearsed the familiar argument as he waited for the ambulance. Men who volunteered for the interstellar flights he had done so much to bring about knew what they were getting into. Until some frabjous super-Batman invented the mythical FTL drive it would always be so. At possible speeds—less than light's 186,000 mps crawl—it was a matter of decades to reach almost every worthwhile planet that was known.

The Smith process allowed these men to use their minds to control chimpanzee bodies—easily bred, utterly expendable—while their own bodies rested in the deep-freeze for all the long years between the stars.

It took brave men, naturally. They were entitled to courtesy and consideration.

But so was he, and it was not courteous to blather about "evdial," whatever that was, while the man who had made their trip possible was seriously injured . . .

Unless . . .

Marchand opened his eyes again.

"Evdial." Unless "evdial" was the closest chimpanzee vocal chords and chimpanzee lips could come to—to—

—unless what they had been talking about, while he was unconscious, was that utterly impossible, hopeless and fantastic dream that he, Marchand, had turned his back upon when he began organizing the colonization campaign.

Unless someone had really found the way to FTL travel.

II

As soon as he was able the next day, Marchand got himself into a wheelchair—all by himself; he didn't want any help in this—and rolled it out into the chart room of the home the Institute had given him rentfree for all of his life. (He had, of course, given it in the first place to the Institute.)

The Institute had put three hundred thousand dollars into the chart room. Stayed and guywired stars flecked the volume of a forty-foot ballroom, representing in scale all the space within fifty-five light-years of Sol. Every star was mapped and tagged. They had even moved a few of them slightly, a year ago, to correct for proper motion: it was that carefully done.

The twenty-six great starships the Institute had financed were there, too, or such of them as were still in space. They were out of scale, of course, but Marchand understood what they represented. He rolled his chair down the marked path to the center of the room and sat there, looking around, just under yellow Sol.

There was blue-white Sirius dominating them all, Procyon hanging just above. The two of them together were incomparably the brightest objects in the room, though red Altair was brighter in its own right than Procyon. In the center of the chamber Sol and Alpha Centauri A made a brilliant pair.

He gazed with rheuming eyes at the greatest disappointment of his life, Alpha Centauri B. So close. So right. So sterile. It was an ironic blunder of creation that the nearest and best chance of another home had never formed planets . . . or had formed them and swept them into the Bode-area traps set by itself and its two companions.

But there were other hopes. . . .

Marchand sought and found Tau Ceti, yellow and pale.

Only eleven light-years away, the colony should be definitely established by now. In another decade or less they should have an answer . . if, of course, it had planets Man could live on.

That was the big question, to which they had already received so many "nos." But Tau Ceti was still a good bet, Marchand told himself stoutly. It was a dimmer, cooler sun than Sol. But it was type G, and according to spectropolarimetry, almost certainly planetiferous. And if it were another disappointment—

Marchand turned his eyes to 40 Eridani A, even dimmer, even farther away. The expedition to 40 Eridani A had been, he remembered, the fifth ship he had launched. It ought to be reaching its destination soon—this year, or perhaps next. There was no sure way of estimating time when the top velocity was so close to light's own . . .

But now of course the top velocity was more.

The sudden wash of failure almost made him physically ill. Faster than light travel—why, how dared they!

But he didn't have time to waste on that particular emotion, or indeed on any emotion at all. He felt time draining away from him and sat up straight again, looking around. At ninety-six you dare not do anything slowly, not even daydream.

He glanced at, and dismissed, Procyon. They had tried Procyon lately—the ship would not be even halfway. They had tried almost everything. Even Epsilon Eridani and Groombridge 1618; even, far down past the probably good bets among the spectroscopic classes, 61 Cygni A and Epsilon Indi, a late and despairing try at Proxima Centauri (though they were very nearly sure it was wasted: the Alpha Centauri expedition had detected nothing like viable planets).

There had been twenty-six of them in all. Three ships lost, three returned, one still Earthbound. Nineteen were still out there.

Marchand looked for comfort at the bright green arrow that marked where the *Tycho Brahe* rode its jets of ionized gas, the biggest of his ships, three thousand men and women. It seemed to him that someone had mentioned the *Tycho Brahe* recently. When? Why? He was not sure, but the name stuck in his mind.

The door opened and Dan Fleury walked in, glancing at

the arrayed stars and ships and not seeing them. The chart room had never meant anything to Fleury. He scolded, "Damn it, Norman, you scared us witless! Why you're not in the hospital now—"

"I was in the hospital, Dan. I wouldn't stay. And finally I got it through Asa Czerny's head that I meant it, so he said I could come home if I would stay quiet and let him look in. Well, as you see, I'm quiet. And I don't care if he looks in. I only care about finding out the truth about FTL."

"Oh, cripes, Norm! Honestly, you shouldn't worry yourself—"

"Dan, for thirty years you've never used the word 'honestly' except when you were lying to me. Now give. I sent for you this morning because you know the answer. I want it."

"*For God's sake, Dan.*"

Fleury glanced around the room, as though he were seeing the glowing points of light for the first time . . . perhaps he was, Marchand thought.

He said at last, "Well, there is something."

Marchand waited. He had had a great deal of practice at waiting.

"There's a young fellow," said Fleury, starting over again. "He's named Eisele. A mathematician, would you believe it? He's got an idea."

Fleury pulled over a chair and sat down.

"It's far from perfect," he added.

"In fact," he said, "a lot of people think it won't work at all. You know the theory, of course. Einstein, Lorentz-Fitzgerald, the whole roster—they're all against it. It's called —get this!—polynomiation."

He waited for a laugh, hopelessly. Then he said, "Although I must say he appears to have something, since the tests—"

Marchand said gently and with enormous restraint: "Dan, will you please spit it out? Let's see what you said so far. There's this fellow named Eisele and he has something and it's crazy but it works."

"Well—yes."

Marchand slowly leaned back and closed his eyes. "So that means that we were all wrong. Especially me. And all our work—"

"Look, Norman! Don't *ever* think like that. Your work has

made it all the difference. If it weren't for you, people like Eisele never would have had the chance. Don't you know he was working under one of our grants?"

"No. I didn't know that." Marchand's eyes went out to the *Tycho Brahe* for a moment. "But it doesn't help much. I wonder if fifty-odd thousand men and women who have given most of their lives to the deep-freeze because of—my work—will feel the way you do. But thanks. You've told me what I want to know."

When Czerny entered the chart room an hour later Marchand said at once, "Am I in good enough shape to stand a smith?"

The doctor put down his bag and took a chair before he answered. "We don't have anyone available, Norman. There hasn't been a volunteer for years."

"No. I don't mean smithed into a human body. I don't want any would-be suicide volunteer donors; you said yourself the smithed bodies sometimes suicided anyway. I'll settle for a chimp. Why should I be any better than that young fellow—what's his name?"

"You mean Duane Ferguson."

"Sure. Why should I be any better than he is?"

"Oh, cut it out, Norman. You're too old. Your phosopholipids—"

"I'm not too old to die, am I? And that's the worst that could happen."

"It wouldn't be stable! Not at your age; you just don't understand the chemistry. I couldn't promise you more than a few weeks."

Marchand said joyously, "Really! I didn't expect that much. That's more than you can promise me now."

The doctor argued, but Marchand had held up his end of many a hard-fought battle in ninety-six years, and besides he had an advantage over Czerny. The doctor knew even better than Marchand himself that getting into a passion would kill him. At the moment when Czerny gauged the risk of a smith translation less than the risk of going on arguing about it, he frowned, shook his head grudgingly and left.

Slowly Marchand wheeled after him.

He did not have to hurry to what might be the last act of his life. There was plenty of time. In the Institute they

kept a supply of breeding champanzees, but it would take several hours to prepare one.

One mind had to be sacrificed in the smith imposition. The man would ultimately be able to return to his own body, his risk less than one chance in fifty of failure. But the chimp would never be the same. Marchand submitted to the beginnings of the irradiation, the delicate titration of his body fluids, the endless strapping and patching and clamping. He had seen it done and there were no surprises in the procedure . . . He had not known, however, that it would hurt so much.

III

Trying not to walk on his knuckles (but it was hard; the ape body was meant to crouch, the arms were too long to hang comfortably along his sides), Marchand waddled out into the pad area and bent his rigid chimp's spine back in order to look up at the hated thing.

Dan Fleury came toward him. "Norm?" he asked tentatively. Marchand attempted to nod: it was not a success, but Fleury understood. "Norman," he said, "this is Sigmund Eisele. He invented the FTL drive."

Marchand raised one long arm and extended a hand that resisted being opened: it was used to being clawed into a fist. "Congradulazhuns," he said, as clearly as he could. Virtuously he did not squeeze the hand of the young dark-eyed man who was being introduced to him. He had been warned that chimpanzee strength maimed human beings. He was not likely to forget, but it was tempting to allow himself to consider it for a moment.

He dropped the hand and winced as pain flooded through him.

Czerny had warned him to expect it. *Unstable, dangerous, won't last* had rumbled through his conversation; *and don't forget, Norman, the sensory equipment is set high for you; you're not used to so much input: it will hurt.*

But Marchand had assured the doctor he would not mind that, and indeed he didn't. He looked at the ship again. *"Zo thads id,"* he grumbled, and again bent the backbone, the whole barrel chest of the brute he occupied, to stare at the ship on the pad. It was perhaps a hundred feet tall. "Nod, mudge," he said scornfully. *"De Zirian,* dad was our

firzd, zdood nine hoonderd feed dall and garried a dousand beople to Alpha Zendauri."

"And it brought a hundred and fifty back alive," said Eisele. He didn't emphasize the words in any way, but he said it quite clearly. "I want to tell you I've always admired you, Dr. Marchand. I hope you won't mind my company. I understand you want to go along with me out to the *Tycho Brahe*."

"Why zhould I mind?" He did, of course. With the best will in the world, this young fellow had thrown seventy years of dedication, plus a handsome fortune—eight million dollars of his own, countless hundreds of millions that Marchand had begged from millionaires, from government handouts, from the pennies of school children—tossed them all into the chamber pot and flushed them into history. They would say: *A nonce figure of the early twenty-first century, Norman Marchand, or Marquand, attempted stellar colonization with primitive rocket-propelled craft. He was of course unsuccessful, and the toll of life and wealth in his ill-conceived venture enormous. However, after Eisele's faster-than-light became practicable* . . . They would say that he was a failure. And he was.

When *Tycho Brahe* blasted off to the stars massed bands of five hundred pieces played it to its countdown and television audiences all over the world watched it through their orbiting satellites. A president, a governor and half the senate were on hand.

When Eisele's little ship took off to catch it and tell its people their efforts had been all in vain, it was like the departure of the 7:17 ferry for Jersey City. To that extent, thought Marchand, had Eisele degraded the majesty of star-flight. Yet he would not have missed it for anything. Not though it meant forcing himself as supercargo on Eisele, who had destroyed his life, and on the other smithed chimpanzee, Duane Ferguson, who was for some reason deemed to have special privileges in regard to the *Brahe*.

They shipped an extra FTL unit—Marchand heard one of the men call it a polyflecter, but he would not do it the honor of asking anyone what that meant—for some reason. Because it was likely to break down, so spares were needed? Marchand dismissed the question, realizing that it had not been a fear but a hope. Whatever the reason he didn't

care; he didn't want even to be here, he only regarded it as his inescapable duty.

And he entered Eisele's ship.

The interior of Eisele's damned ship was built to human scale, nine-foot ceilings and broad acceleration couches, but they had brought hammocks scaled to a chimpanzee torso for himself and Duane Ferguson. Doubtless they had looted the hammocks from the new ship. The one that would never fly—or at least not on streams of ionized gas. And doubtless this was almost the last time that a man's mind would have to leave Earth in an ape's body.

What Eisele's damned ship rode to the stars on in place of ionized gas Marchand did not understand. The whatchaflecter, whatever the damned thing was named, was so tiny. The whole ship was a pigmy.

There was no room for reaction mass, or at least only for enough to get it off-Earth. Then the little black box—it was not really little, since it was the size of a grand piano; and it was not black but gray; but it was a box, all right—would work its magic. They called that magic "polynomiation." What polynomiation was Marchand did not try to understand, beyond listening, or seeming to listen, to Eisele's brief, crude attempt to translate mathematics into English. He heard just enough to recognize a few words. Space was N dimensional. All right, that answered the whole question, as far as he was concerned, and he did not hear Eisele's tortuous efforts to explain how one jacked oneself up, so to speak, into a polynomial dimension—or no, not that, but translated the existing polynomial extensions of a standard 4-space mass into higher orders—he didn't hear. He didn't hear any of it. What he was listening to was the deep liquid thump of the great ape's heart that now was sustaining his brain.

Duane Ferguson appeared, in the ape's body that he would never leave now. That was one more count of Marchand's self-indictment; he had heard them say that the odds had worked against Ferguson, and his body had died in the imposition.

As soon as he had heard what Eisele was up to, Marchand had seized on it as a chance for expiation. The project was very simple. A good test for Eisele's drive, and a mission of mercy, too. They indended to fleet after the plodding, long-gone *Tycho Brahe* and catch it in mid-space . . . for even now, thirty years after it had left Port Kenne-

dy, it was still decelerating to begin its search orbit around Groombridge 1618. As Marchand strapped himself in, Eisele was explaining it all over again. He was making tests on his black box and talking at the same time: "You see, sir, we'll try to match course and velocity, but frankly that's the hard part. Catching them's nothing: we've got the speed. Then we'll transfer the extra polyflecter to the *Tyco Brahe—*"

"Yez, thanggs," said Marchand politely, but he still did not listen to the talk about the machine. As long as it existed he would use it, his conscience would not let him off that, but he didn't want details.

Because the thing was, there were all those wasted lives. Every year in the *Tycho Brahe's* deep freeze means a month off the life of the body that lay there. Respiration was slowed, but it was not stopped. The heart did not beat but blood was perfused through a pump; tubes dripped sugar and minerals into the torpid blood, catheters carried wastes away. And Groombridge 1618 was a flight of ninety years.

The best a forty-year-old man could hope for on arriving was to be restored into a body whose biological age was nearly fifty—while behind him on the Earth was nothing but a family long dead, friends turned into dust.

It had been worth it. Or so the colonists had thought. Driven by the worm that wriggled in the spine of the explorer, the itch that drove him on; because of the wealth and the power and the freedom that a new world could give them, and because of the place they would have in the history books—not Washington's place, or even Christ's. They would have the place of an Adam and an Eve.

It had been worth it, all those thousands had thought when they volunteered and set out. But what would they think when they landed!

If they landed without knowing the truth, if some ship like Eisele's did not reach and tell them in mid-space, they would find the greatest disappointment any man had ever borne. The Groombridge 1618 expedition aboard the *Tycho Brahe* still had forty years to go on its original trip plan. With Eisele's invention driving faster-than-light commerce, there would be a planet populated by hundreds of thousands of people, factories at work, roads built, the best land taken, the history books already into their fifth chapter . . . and what would the three thousand aging adventurers think then?

Marchand moaned and shook, not entirely because the

ship was taking off and the acceleration squeezed his rib cage down against his spine.

When they were in the polyflecter's grip he floated across the pilot room to join the others. "I was never in zpaze bevore," he said.

Eisele said with great deference, "Your work was on the Earth."

"Vas, yez." But Marchand left it at that. A man whose whole life was a failure owed something to humanity, and one of the things he owed was the privilege of allowing them to overlook it.

He watched carefully while Eisele and Ferguson read their instruments and made micrometric settings on the polyflecter. He did not understand anything about the faster-than-light drive, but he understood that a chart was a chart. Here there was a doubly profiled representation of the course-line of the Groombridge star in distance, which meant something under three-quarters of the way in time.

"Mass detectors, Dr. Marchand," said Eisele cheerfully, pointing to the charts. "Good thing they're not much closer, or they wouldn't have mass enough to show." Marchand understood: the same detectors that would show a sun or a planet would also show a mere million-ton ship if its speed were great enough to add sufficient mass. "And a good thing," added Eisele, looking worried, "that they're not much farther away. We're going to have trouble matching their velocity now, even though they've been decelerating for nine years . . . Let's get strapped in."

From the hammock Marchand braced himself for another surge of acceleration. But it was not that, it was something different and far worse.

It was a sausage-grinder, chewing his heart and sinews and spitting them out in strange crippled shapes.

It was a wine-press, squeezing his throat, collapsing his heart.

It was the giddy nausea of a roller-coaster or a small craft in a typhoon. Wherever it took them, the stars on the profile charts slipped and slid and flowed into new positions.

Marchand, absorbed in the most crushing migraine of all but a century, hardly knew what was happening, but he knew that in the hours they found the *Tycho Brahe*, after giving it a thirty-year start.

IV

The captain of the *Tycho Brahe* was a graying, yellow-fanged chimp named Lafcadio, his brown animal eyes hooded with shock, his long, stringy arms still quivering with the reaction of seeing a ship—a ship—and human beings.

He could not take his eyes off Eisele, Marchand noted, and looked? It had been thirty years in an ape's body for the captain. The ape was old now. Lafcadio would be thinking himself more than half chimp already, the human frame only a memory that blurred against the everyday reminders of furry-backed hands and splayed prehensile feet. Marchand himself could feel the ape's mind stealing back, though he knew it was only imagination.

Or was it imagination? Asa Czerny had said the imposition would not be stable—something to do with the phospholipids—he could not remember. He could not, in fact, remember anything with the clarity and certainty he could wish, and it was not merely because his mind was ninety-six years old.

Without emotion Marchand realized that his measured months or weeks had dwindled to a few days.

It could, of course, be the throbbing pain between his temples that was robbing him of reason. But Marchand only entertained that thought to dismiss it; if he had courage enough to realize that his life's work was wasted, he could face the fact that pain was only a second-order derivative of the killer that stalked his ape's body. But it made it hard for him to concentrate. It was through a haze that he heard the talk of the captain and his crew—the twenty-two smithed chimpanzees who superintended the running of the *Tycho Brahe* and watched over the three thousand frozen bodies in its hold. It was over a deep, confusing roar that he heard Eisele instruct them in the transfer of the FTL unit from his tiny ship to the great, lumbering ark that his box could make fleet enough to span the stars in a day's journey.

He was aware that they looked on him, from time to time, with pity.

He did not mind their pity. He only asked that they allow him to live with them until he died, knowing as he knew that that would be no long time; and he passed, while they were still talking, into a painful, dizzying reverie that lasted until—he did not know the measure of the time—until he found himself strapped in a hammock in the control room of the ship, and felt the added crushing agony that told him they were once again slipping through the space of other dimensions.

"Are you all right?" said a familiar thick, slurred voice. It was the other, last victim of his blundering, the one called Ferguson. Marchand managed to say that he was.

"We're almost there," said Ferguson. "I thought you'd like to know. There's a planet. Inhabitable, they think."

From Earth the star called Groombridge 1618 was not even visible to the naked eye. Binoculars might make it a tiny flicker of light, lost among countless thousands of farther, but brighter, stars. From Groombridge 1618 Sol was not much more.

Marchand remembered struggling out of his hammock, overruling the worry on Ferguson's simian face, to look back at the view that showed Sol. Ferguson had picked it out for him, and Marchand looked at light that had been fifteen years journeying from his home. The photons that impinged on his eyes now had paused to drench the Earth in the colors of sunset when he was in his seventies and his wife only a few years mourned . . . He did not remember getting back to his hammock.

He did not remember, either, at what moment of time someone told him about the planet they hoped to own. It hung low around the little orange disk of Groombridge 1618—by solar standards, at least. The captain's first approximation made its orbit quite irregular, but at its nearest approach it would be less than ten million miles from the glowing fire-coal of its primary. Near enough. Warm enough. Telescopes showed it a planet with oceans and forests, removing the lingering doubts of the captain, for its orbit could not freeze it even at greatest remove from its star, or char it at closest—or else the forest could not have grown. Spectroscopes, thermocouples, filarometers showed more, the instruments racing ahead of the ship, now in

orbit and compelled to creep at rocket speeds the last little inch of its journey. The atmosphere could be breathed, for the ferny woods had flushed out the poisons and filled it with oxygen. The gravity was more than Earth's—a drag on the first generation, to be sure, and an expense in foot troubles and lumbar aches for many more—but nothing that could not be borne. The world was fair.

Marchand remembered nothing of how he learned this, or of the landing, or of the hurried, joyful opening of the freezing crypts, the awakening of the colonists, the beginning of life on the planet . . . he only knew that there was a time when he found himself curled on a soft, warm hammock, and he looked up and saw sky.

V

The protuberant hairy lip and sloping brows of a chimpanzee were hovering over him. Marchand recognized that young fellow Ferguson. "Hello," he said. "How long have I been unconscious?"

The chimp said, with embarrassment, "Well—you haven't been unconscious at all, exactly. You've been—" His voice trailed off.

"I see," said Marchand, and struggled up. He was grateful for the strength of the slope-shouldered, short-legged body he had borrowed, for this world he had come to had an uncomfortably powerful grip. The effort made him dizzy. A pale sky and thin clouds spiraled around him; he felt queer flashes of pain and pleasure, remembered tastes he had never experienced, felt joys he had never known . . . With an effort he repressed the vestigial ape and said, "You mean I've been—what would you call it? Unstable? The smithing didn't quite take." But he didn't need confirmation from Ferguson. He knew; and knew that the next time he slipped away would be the last. Czerny had warned him. The phospholipids, wasn't that it? It was almost time to go home . . .

Off to one side he saw men and women, *human* men and women, on various errands and it made him ask: "You're still an ape?"

"I will be for a while, Dr. Marchand. My body's gone, you know."

Marchand puzzled over that for a while. His attention wandering, he caught himself licking his forearm and grooming his round belly. "No!" he shouted, and tried to stand up.

Ferguson helped him, and Marchand was grateful for the ape's strong arm. He remembered what had been bothering him. "Why?" he asked.

"Why what, Dr. Marchand?"

"Why did you come?"

Ferguson said anxiously, "I wish you'd sit down till the doctor gets here. I came because there's someone on the *Tycho Brahe* I wanted to see."

A girl? thought Marchand wonderingly. "And did you see her?"

"Not her, them. Yes, I saw them. My parents. You see, I was two years old when the *Tycho Brahe* left. My parents were good breeding stock—volunteers were hard to get then, they tell me—oh, of course, you'd know better than I. Anyway they—I was adopted by an aunt. They left me a letter to read when I was old enough . . . Dr. Marchand! What's the matter?"

Marchand reeled and fell; he could not help it, he knew he was a spectacle, could feel the incongruous tears rheuming out of his beast eyes; but this last and unexpected blow was too harsh. He had faced the fact of fifty thousand damaged lives and accepted guilt for them, but one abandoned baby, left to an aunt and the apology of a letter, broke his heart.

"I wonder why you don't kill me," he said.

"Dr. Marchand! I don't know what you're talking about."

"If only," said Marchand carefully, "I don't expect any favors, but if only there were some way I could *pay*. But I can't. I have nothing left, not even enough life to matter. But I'm sorry, Mr. Ferguson, and that will have to do."

Ferguson said, "Dr. Marchand, if I'm not mistaken, you're saying that you apologize for the Institute." Marchand nodded. "But—oh, I'm not the one to say this, but there's no one else. Look. Let me try to make it clear. The first thing the colonists did yesterday was choose a name for the planet. The vote was unanimous. Do you know what they called it?"

Marchand only looked at him dully.

"Please listen, Dr. Marchand. They named it after the

man who inspired all their lives. Their greatest hero. They named it Marchand."

Marchand stared at him, and stared longer, and then without changing expression closed his eyes. "Dr. Marchand!" said Ferguson tentatively, and then, seriously worried at last, turned and scuttled ape-like, legs and knuckles bearing him rapidly across the ground, to get the ship's doctor who had left him with strict orders to call him as soon as the patient showed any signs of life.

When they got back the chimp was gone. They looked at the fronded forest and at each other.

"Wandered off, I expect," said the doctor. "It may be just as well."

"But the nights are cold! He'll get pneumonia. He'll die."

"Not any more," said the doctor, as kindly as he could. "He's already dead in every way that matters."

He bent and rubbed his aching thighs, worn already from the struggle against this new Eden's gravity, then straightened and looked at the stars in the darkening western sky. A bright green one was another planet of Groombridge 1618's, farther out, all ice and copper salts. One of the very faintest ones, perhaps, was Sol. "He gave us these planets," said the doctor, and turned back toward the city. "Do you know what being a good man means, Ferguson? It means being better than you really are—so that even your failures carry someone a little farther to success—and that's what he did for us. I hope he heard what you were trying to tell him. I hope he remembers it when he dies," the doctor said.

"If he doesn't," said Ferguson very clearly, "the rest of us always will."

The next day they found the curled-up body.

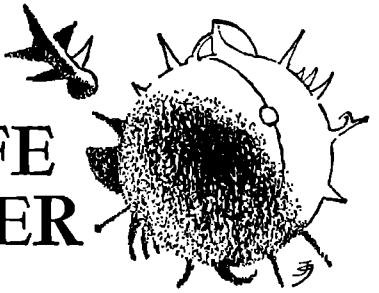
It was the first funeral ever held on the planet, and the one that the history books describe. That is why, on the planet called Marchand, the statue at the spaceport has a small bas-relief carved over the legend:

THE FATHER OF THE STARS

The bas-relief is the shape of a chimpanzee, curled on itself and looking out with blind, frightened eyes upon the world, for it was the chimpanzee's body that they found,

and the chimpanzee's body that they buried under the monument. The bas-relief and the body, they are ape. But the statue that rises above them is a god's.

THE LIFE HATER



FRED SABERHAGEN

Carr swallowed a pain pill, and tried to find a less uncomfortable position in the combat chair. He keyed his radio transmitter and spoke to the rogue ship that hung before him in space.

"I come in peace. I have no weapons. I come to talk to you."

He waited. The cabin of his little one-man ship was silent. His radar screen showed the berserker machine still many light-seconds ahead of him. There was no reaction from it, but he knew that it had heard him.

Behind Carr was the Sol-type star he called sun, and his home planet, colonized from Earth a century before. It was a lonely settlement, out near the rim of the galaxy. Until now the war waged on life by the berserker machines had been a remote horror in the news stories. The colony's only real fighting ship had been sent to join Karlsen's fleet in the defense of Earth, when the berserkers were said to be massing there. But now the enemy was here, and the people of Carr's planet were readying two more ships in feverish haste they were a small colony, and not wealthy in resources. Even when the two ships were ready, they would hardly be a match for a berserker.

When Carr had taken his plan to the leaders of the colony, they had thought him mad.

Go out and talk to it of peace and love? *Argue* with it? There might be some hope of converting the most depraved human to the cause of goodness and mercy, but what appeal could alter the built-in purpose of a machine?

"Why *not* talk to it of peace?" Carr had demanded. "Have you a better plan? I'm willing to go, I've nothing to lose."

They had looked at him, across the gulf that separates healthy planners from those who know they are dying. They thought almost any scheme would be better than his. But they could imagine nothing else to do until the warships were ready, which would be at least ten days. The little one-man ship was expendable, being unarmed. Armed, it would be no more a provocation to a berserker. In the end, they let Carr take it, hoping there was a chance his arguments might delay the inevitable attack.

For Carr himself, of course, they wasted no thought. For Carr was dying. Was as good as dead.

When Carr came within a million miles of the berserker, it stopped its own unhurried motion and seemed to wait for him, hanging in space in the orbital track of an airless planetoid, at a point from which the planetoid was still several days away.

"I am unarmed," he radioed again. "I come to talk with you, not to damage you. If those who built you were here, I would try to talk to them of peace and love. Do you understand?"

He felt sure it would understand his language. All the berserker machines had learned the universal space-travelers' tongue, from human prisoners or from each other. And he was serious about talking love to the unknown Builders. Grudges and vengeance seemed tiny things to a dying man. But the Builders would not be aboard; the berserkers had been constructed, probably, when Earthmen hunted the mammoth with spears. The Builders were lost in spacetime, along with their enemies of long ago.

Suddenly it answered him: "Little ship, maintain your present speed and course toward me. Be ready to stop when ordered."

"I—I will." In spite of being ready for it, Carr found himself stuttering and shaken at the sound of its voice, the un-

even mechanical reproduction of the words of human prisoners, recorded aboard or borrowed from another machine. Now the weapons which could sterilize a planet would be trained on him alone. And there was worse than destruction to be feared, if one tenth of the stories about berserkers' prisoners were true. Carr did not let himself think about that—although the pain that racked him in momentary floods of agony made death seem almost welcome.

When he was within ten thousand miles it ordered: "Stop. Wait where you are, relative to me."

Carr obeyed instantly. Soon he saw that it had launched toward him something about the size of his own ship—a little moving dot on his video screen, coming out of the vast black fortress that floated against the stars.

Even at this range he could see how scarred and battered that fortress was. He had heard that all of these ancient machines were damaged, from their long senseless fighting across the galaxy; but surely such apparent ruin as this must be exceptional.

The berserker's launch slowed and drew up beside his ship. Soon there came a clanging at the airlock.

"Open!" demanded the radio voice. "I must search you."

"Then you will listen to me?"

"Then I will listen."

He opened the lock, and stood aside for the half dozen machines that entered. They were not unlike robot valets and workers, except that these were old and limping and worn, like their great master. Here and there a new part gleamed. But often the machines' movement's were unsteady as they searched Carr, searched his cabin, probed everywhere on the little ship. One of them had to be half-carried out by its fellows, when the search was completed.

Another one of the machines, a thing with arms and hands like a man's, stayed behind. As soon as the lock had closed behind the others, it settled itself in the combat chair and began to drive the ship toward the berserker.

"Wait!" Carr protested. "I didn't surrender!" The ridiculous words hung in the air, seeming to deserve no reply. Sudden panic made Carr move without thinking; he stepped forward and grabbed at the mechanical pilot, trying to pull it from the chair. It put one metal hand against his chest and shoved him across the cabin, so that he staggered and fell in the artificial gravity, thumping his head painfully

against a bulkhead. "In a matter of minutes we will talk about love and peace," said the radio voice.

Looking out a port as his ship neared the immense berserker, Carr saw the scars of battle become plainer and plainer, even to his unpracticed eye. There were holes in the hull, square miles of bendings and swellings and pits where the metal had once flowed molten.

Rubbing his bumped head, Carr felt a faint thrill of pride. We've done that to it, he thought, we soft little living things. His own martial feeling annoyed him, in a way. He had always been something of a pacifist. Of course it could hardly be thought immoral to use violence against a dangerous but inanimate machine. After some delay, a hatch opened in the berserker's side, and Carr's ship followed the berserker's launch into darkness.

Now there was nothing to be seen through the port. Soon there came a gentle bump, as of docking. The mechanical pilot shut off the drive, turned toward Carr and started to rise from the chair.

Something in it failed. Instead of rising smoothly, the pilot reared up, flailed for a moment with arms that sought a grip or balance, and then fell heavily to the deck. For half a minute it moved one arm, and made a grinding noise. Then it was still.

In the half minute of silence which followed, Carr realized that he was again master of his cabin; chance had given him that. If there was something he could do—

"Leave your ship," said the calm voice. "There is an air-filled tube fitted to your airlock. It will lead you to a place where we can talk of peace and love."

Carr's eyes, with a sort of reluctant horror, had dragged themselves to focus on the engine switch, and beyond that, to the C-plus activator.

The C-plus jump was not usable as a drive anywhere near the huge mass of a sun. In such proximity as this to a mass even the size of the surrounding berserker, the effect became only a weapon—a weapon of tremendous potential power.

Carr did not—or thought he did not—any longer fear sudden death; he was too near to the slow, sure kind. But now he found that with all his heart and soul he feared what might be prepared for him outside the airlock. All the horror stories came back. The thought of going out through that

airlock now was unendurable. It was less terrifying for him to step carefully around the fallen pilot, to reach the controls and turn the engine back on.

"I can talk to you from here," he said, his voice quavering in spite of an effort to keep it steady.

After about ten seconds, the berserker said: "Your C-plus drive has safety devices. You will not be able to Kamikaze me."

"You may be right," said Carr after a moment's thought. "But if a safety device does function, it might hurl my ship away from your center mass, right through your hull. And your hull is in bad shape now. You don't want any more damage."

"You would die."

"I'll have to die sometime. But I didn't come out here to die, or to fight. I came to talk with you, to try to reach some agreement."

"What kind of agreement?"

At last Carr took a deep breath, and marshaled the arguments he had so often rehearsed. He kept his fingers resting gently on the C-plus activator, and his eyes alert on the instruments that normally monitored the hull for micrometeorite damage.

"I've had the feeling," he began, "that your attacks upon humanity may be only some ghastly mistake. Certainly we were not your original enemy."

"Life is my enemy. Life is evil." Pause. "Do you want to become goodlife?"

Carr closed his eyes for a moment; some of the horror stories were coming to life. But then he went firmly on with his argument. "From our point of view, it is you who are bad. We would like you to become a good machine, one that helps men instead of killing. Is not building a higher purpose than destroying?"

There was a longer pause. "What evidence can you offer that I should change my purpose?"

"For one thing, helping us will be a purpose easier of achievement. No one will damage you and oppose you."

"What is it to me, if I am damaged and opposed?"

Carr tried again. "Life is basically superior to non-life; and man is the highest form of life."

"What evidence do you offer?"

"Man has a spirit."

"I have learned that men claim that. But do you not define this spirit as something beyond the perception of any machine? And are there not men who deny that this spirit exists?"

"Spirit is so defined. And there are such men."

"Then I do not accept the argument of spirit."

Carr dug out a pain pill and swallowed it. "Still, you have no evidence that spirit does not exist. You must consider it as a possibility."

"That is correct."

"But leaving spirit out of the argument for now, consider the physical and chemical organization of life. Do you know anything of the delicacy and intricacy of organization in even a single living cell? And surely you must admit we humans carry wonderful computers inside our few cubic inches of skull."

"I have never had an intelligent captive to dissect," the mechanical voice informed him blandly, "though I have received some relevant data from other machines. But you admit that your form is the determined result of the operation of physical and chemical laws?"

"Have *you* ever thought that those laws may have been designed to do just that—produce brains capable of intelligent action?"

There was a pause that stretched on and on. Carr's throat felt dry and rough, as if he had been speaking for hours.

"I have never tried to use that hypothesis," it answered suddenly. "But if the construction of intelligent life is indeed so intricate, so dependent upon the laws of physics being as they are and not otherwise—then to serve life may be the highest purpose of a machine."

"You may be sure, our physical construction is intricate." He wasn't sure he could follow the machine's line of reasoning, but that hardly mattered if he could somehow win the game of Life. He kept his fingers on the C-plus activator.

The berserker said: "If I am able to study some living cells—"

Like a hot iron on a nerve, the meteorite-damage indicator moved; something was at the hull. "Stop that!" he screamed, without thought. "The first thing you try, I'll kill you!"

Its voice was unevenly calm, as always. "There may have

been some accidental contact with your hull. I am damaged and many of my commensal machines are unreliable. I mean to land on this approaching planetoid to mine for metal and repair myself as far as possible." The indicator was quiet again.

The berserker resumed its argument. "If I am able to study some living cells from an intelligent life-unit for a few hours, I expect I will find strong evidence for, or against, your argument. Will you provide me with cells?"

"You must have had prisoners, sometime." He said it as a suspicion; he really knew no reason why it must have had human captives. It could have learned the language from another berserker.

"No, I have never taken a prisoner."

It waited. The question it had asked still hung in the air.

"The only human cells on this ship are my own. Possibly I could give you a few of them."

"Half a cubic centimeter should be enough; not a dangerous loss for you, I believe. I will not demand part of your brain. Also I understand that you wish to avoid the sensation called pain. I am willing to help you avoid it, if possible."

Did it want to drug him? That seemed too simple. Always unpredictability, the stories said, and sometimes a subtlety out of hell.

He went on with the game. "I have all that is necessary. Be warned that my attention will hardly waver from the control panel. Soon I will place a tissue sample in the airlock for you."

He got the medical kit, took two pain-killers, and set very carefully to work with a sterile scalpel. He had had some biological training.

When the small wound was bandaged, he cleansed the tissue sample of blood and lymph and with unsteady fingers sealed it into a little tube. Without letting down his guard for an instant, he dragged the fallen pilot to the airlock and left it there with the tissue sample. Utterly weary, he got back to the combat chair. When he switched the outer door open, he heard something come into the lock, and leave again.

He took a pep pill. It would stimulate some pain, but he'd be alert.

Two hours passed. Carr forced himself to eat some emergency rations, watched the panel, and waited.

He gave a startled jump when the berserker spoke again; nearly six hours had gone by.

"You are free to leave," it was saying. "Tell the leading life-units of your planet that when I have refitted, I will be their ally. The study of your cells has convinced me that the human body is the highest creation of the universe, and that I should make helping you my purpose. Do you understand?"

Carr felt numb. "Yes. Yes, I have convinced you. After you have refitted, you will fight on our side."

Something shoved hugely and gently at his hull. Through a port he saw stars, and realized that the great hatch through which his ship had entered was swinging open.

This far within the system, Carr necessarily kept his ship in normal space to travel. It meant he could see the berserker as he fled from it, and he kept it in sight as long as possible. His last sight of the berserker showed it moving as if indeed about to let down upon the airless planetoid. Cetainly it was not following him.

A couple of hours after being freed, he roused himself from contemplation of the radar screen, and went to spend a full minute considering the inner airlock door. At last he shook his head, dialed air into the lock, and entered it. The pilot was gone, with the tissue sample. There was nothing strange to be seen. Carr took a deep breath, as if relieved, closed up the lock again, and went to a port to spend some time watching the stars.

After a day he began to decelerate, so that when hours had added into another day, he was still a good distance from home. He ate, and slept, and watched his face in a mirror. He weighed himself, and he watched the stars some more, with great interest, like a man examining something long forgotten.

In two more days, gravity bent his course into a hairpin ellipse around his home planet. With his whole world bulking between him and the berserker's rock, Carr began to use his radio.

"Ho, on the ground! Good news."

The answer came almost instantly. "We've been tracking you, Carr. What's going on? What happened?"

He told them of his encounter with the berserker. "So

that's the story up to now," he finished. "I expect the thing really needs to refit. It is seriously damaged. Two warships attacking it now should easily win."

"Yes." There was excited talk in the background. Then the voice was back, sounding uneasy. "Carr—you haven't started a landing approach yet, so maybe you understand. We've got to be careful. The thing was probably lying to you."

"Oh, I know. Even that pilot's collapse might have been staged. I guess the berserker was too badly shot up to want to risk a battle, so it tried another way. Must have sneaked the stuff into my cabin air, just before it let me go—or maybe left it in my airlock."

"What stuff?"

Carr said, "The stuff you're worrying about. The poison it thinks will kill us all. I'd guess it's some freshly mutated virus, designed for specific virulence against the tissue I gave it. It expected I'd hurry home and land before getting sick, and spread a new plague. It must have thought it was inventing biological warfare, using life against life, as we use machines against machines. But it needed that tissue sample to blood its pet viruses. It didn't know our chemistry. It must have been telling the truth about never having a human prisoner."

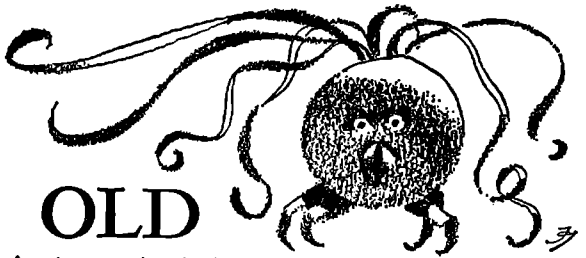
"Some virus, you think? What's it doing to you, Carr? Are you in pain—I mean, more than before?"

"No." Carr swirled his chair to look at the little chart he had begun. It showed that in the last two days his weight loss had started to reverse itself. He looked down at his body, at the bandaged place near the center of a discolored, inhuman-looking area. That area was smaller than it had been, and he saw a hint of new and healthy skin.

"What *is* the stuff doing to you?"

Carr allowed himself to smile, and to speak aloud his growing hope.

"I think it's killing off my cancer."



OLD TESTAMENT

JEROME BIXBY

It was about the size of a grapefruit, and about the color of one. From its top sprouted a cluster of thin, ribbonish tentacles—translucent, filled with shifting shades of violet and chartreuse, far tougher than they looked. Four pedal extremities, oddly like thumbs with long claws, stuck out from the bottom. It had two flat, pink eyes, set very close together.

It squealed as Ray Caradac carried it at arm's length into the control room of the *Manta.*

"Look what we have here," he said grimly.

Mary Caradac—small, brunette, snapping-eyed, the other half of Extraterrestrial Exploration Team 2861—looked up from the bitchboard, where she had been dialing their course away from Sirius IV.

"What on *Earth—*" she gasped.

"On *Sirius,*" Ray corrected. "On good old Sirius IV, which we seem not to have escaped quite as completely as we thought we had."

"A baby Sirian!"

"That's my guess, from the glimpses we got of the natives."

Mary stood up, spilling *Benton's Astrocharts* from her lap, and reached for the creature. Ray relinquished it, looking disgusted. While Mary cradled it in both hands, he moved

three steps across the narrow, instrument-cluttered control room to snap on the rear screen. He focused the screen with one hand, rubbed his home-made crew-cut with the other.

Behind him, the Sirian infant squealed, a sound like a viola harmonic. "Where'd you find it?" Mary asked.

"Under my bed, of all places. I went to shove my suit-boots under it and change into sneakers, and the critter let out a squeal and damned near scared me out through the side of the ship."

"What was it doing *there*?"

"Ask *it*." Ray stared glumly out at the dull green globe of Sirius IV, already thirty thousand miles away and retreating at ninety m.p.s. "Maybe it wanted to see the Universe, or just get the hell off its planet. I can understand that, after two *hours* on the godforsaken ice ball."

"It probably likes minus thirty just fine. It's probably roasting right now, poor thing."

Ray turned from the gazer. Mary was cuddling the Sirian infant to her breast and fanning it with one hand.

"Look out," he said dryly. "It might bite."

"So do human babies. Besides, it hasn't got any teeth."

Ray looked at the tiny pink mouth, opening and closing horizontally under the eyes like sliding doors. He'd seen enough cockeyed life-forms not to shudder.

"Why, look, it *couldn't* have wandered in," Mary said, twiddling one of the stubby legs. She set it on the chart file, where it immediately went *plop* on its rounded bottom, legs sticking out like a newborn kitten's. "It can't even stand up." She flashed a hand in front of the pink eyes, and filmy eyelids blinked. The tentacles waved. "I'm no judge of Sirian age, but I'll bet it's darned young."

She looked wise and extended a finger and two tentacles curled around it, tugging it gently toward the mouth.

"Uh, uh," she said. "Not a nipple, son. There, Ray—you see?" She picked it up again. Another squeal.

"I wasn't arguing," he said absently. Then, plaintively: "Just what the devil are we supposed to do with a Sirian infant? And how did it get here, if it can't walk under its own steam?"

"Under someone else's, obviously," Mary said practically. Then she paused and cocked her head. Her eyes widened. "Good *God*! I wonder . . . come on Ray, let's go

look where you found it. I have a perfectly wonderfully preposterous hunch!"

They went single-file down the narrow corridor that led to sleeping quarters, Mary carrying the infant. There she waited for Ray to open the door—as she would have done even if she hadn't had her hands full. The Caradacs had decided long ago that such little niceties should be carefully and lovingly observed aboard the *Manta*, ten billion miles from nowhere. Things like love and sex can get awfully pedestrian in a sixty-foot spacer, if you don't care for them right.

Inside, Mary put the Sirian on Joe's bed and said, "Hold it there."

Ray sat down beside the creature and put one hand on its back—the surface 180° from eyes and mouth—and pressed gingerly. *Squeal.*

"I wonder what it eats," he said sourly.

Mary was head and shoulders under the bed. She said, "Ah, hah!" and emerged with a handful of dried, crinkly-looking leaves. They smelled faintly like cinnamon. The Sirian's tentacles went *Zing!* and it squealed an octave above any previous effort.

"Feed it," Mary said, going under the bed again.

Ray put a pinch of the leaves on the blanket, and released the creature, keeping one hand poised to see that it didn't roll off the bed. It dug the claws of its front feet into the blanket, hiked itself toward the leaves, opened its mouth and crunched away. Ray watched, eyes a little glazed. "What—?"

Mary's head appeared again. In one hand she held more dried leaves; in the other a crude basket about a foot square, high sided, woven of some broad, reddish fiber.

She squatted there, holding the basket, and looked at Ray.

It took Ray about six seconds to get it. He looked down at the creature, happily chewing leaves, up again at Mary's face. His jaw dropped. She was beginning to grin.

Ray clapped a hand unbelievingly to the side of his head, so hard his ears rang. "God in Heaven," he said. "A *foundling!*"

"Basket and all," Mary said. "Only the pathetic note from the mother is lacking."

"Oh, no, it's crazy!"

"Crazy or not, it's here." Mary touched a hand to the ten-

tacles, and there was a squeal—a happy-sounding squeal.

"But why?" Ray gasped. "Why should a Sirian mother—dressed in a threadbare Sirian shawl, no doubt—abandon her baby in our ship?"

"Why do mothers in threadbare shawls usually abandon babies?"

"M'm. Because they can't support them. Or because they're illegitimate, or something."

"In this case it's probably just something. I don't think it could be a matter of supporting it. A B-4 culture's too darned primitive for that. They live right off the soil. This stuff"— Mary pinched a handful of leaves she'd put on the blanket—"was everywhere we walked. As for legitimacy, that's never an issue in the pre-M series—"

"Tut," said Ray, academically aroused. "You're assuming, honey. You need ten decimals after B-4, or anything else to really classify. Forbidden fruits all over the place. Besides, maybe our little friend here isn't a waif at all. Maybe we were taken for gods, and it's a sacrifice."

"In a basket? Brought right into this big old terrifying ship?"

"Oh, hell, *I* don't know. Motive X, for alien. That B-4 status drove us off the planet so fast . . . *Scram! hands off! clear out! don't influence!* and all the rest of Article 12, Section 9, paragraphs 3, 4, 7 and 16 of the Extraterrestrial Explor—"

"Not a nipple," Mary said, disengaging her finger again. "You know, Ray, I think it's thirsty."

Ray glowered at the creature. "I wonder what it drinks."

"Try water—but be careful."

Ray filled a glass of water from the tiny basin in the corner and held it close to the vertical pink mouth. The mouth wrinkled. The little Sirian scrabbled backward and pressed into the pillow.

"So water's out," Ray grunted. He put the glass on the low table between the beds, knocking over two pawns and the black queen. "So now what? My God, didn't whoever or whatever left the critter here have sense enough to realize that handful of leaves wouldn't last forever? That we might not have whatever they drink for water?"

"Of course not," Mary said placidly. "Now who's assuming? What can you expect of a B-4 . . . a cosmology? Food and water, or their equivalents, have always been around: therefore food and water are everywhere. A B-4 couldn't

have the slightest idea of what this ship is, or what we are, or where we're from or going and how and why—"

"Then why was the food left?"

"Maybe to keep our friend happy until we found it. Oh, I don't know either! I'm just as puzzled as you are. But I do know what we've got to do now."

"What?"

"Take it back. It'll die if we don't."

Ray sat down on the other bed and glared at the two who sat on his—Mary and the Sirian infant, which had ceased eating and was now cleaning the waxy skin around its mouth with a tentacle.

"Sure," he said. "Take it back. Violate every damned rule in the book. Take a chance on Influencing, by letting them see us again. One time is bad enough—but the B series have short memories. Most of it gets corrupted by legend, and after a couple of centuries the legends are obliterated by more recent events and interpretations. But a *second* time? That's the time that clicks."

"We have to, anyway. Maybe you're wrong. Maybe it isn't a B—"

"Honey, I studied forty years not to be wrong. I can look at three artifacts, two flora, the dials on my spy-eye, and write a history."

Mary looked stubborn. "We take it back. This isn't in the books."

"Maybe they'll tear it to pieces if we do," Ray argued. "Maybe it's a freak—a sport. Maybe that's why it landed up with us. We might be killing it."

"Well, we'll *certainly* be killing it if we don't, so you get right on up to the board and get us back to that planet. Look how thirsty it is . . . hey, *not* a nipple, damn it!"

The infant squealed, eyeing the finger.

"Nobody'll ever know, Ray. We can't let the poor thing die."

Ray sighed and raised his brows. Then he lowered one and winked at her. "What do I get?"

"A lot of nothing if you don't."

Mary grinned at his back.

My mate dead. She die having little one. I sorry. She best mate. But I sorrier for little one. Soon they kill him. Why kill little ones when mother die having them? Priest say because they kill mother and now no mother to drink

from. So they die anyway. But they *not* kill mother. That what I think. Not their fault. And *other* mothers with dead *little ones.* No little ones to drink *them.* Why not . . . why not . . . do for each other? But priest say no. He say they bad. Must die because kill mother. He say *he* must drink from mothers with dead little ones to keep magic power. He get fat. This go on for long long time. Many thousand suns. But I wonder if he *really* have magic power or just want to stay fat. Soon priest come to take little one away and kill him. I sorry. Then I think of shiny thing that come down by village out of sky. Everybody afraid. Priest tell us to stay away. Tell us gods angry. Tell us to stay in huts. Things come out of shiny thing. Tall and different. They walk through village. Everybody afraid. I afraid too. But they don't hurt. Don't kill. Don't break huts and eat like animals. I more sorry for little one than afraid. I *no* let priest kill him. While tall different things walk in village I go out with little one. Nobody see. Everybody afraid to look out. I take little one to shiny thing. Cave in side. I afraid but nothing happen. I take little one into cave and hide him. Leave food so he not cry and priest hear. I think maybe tall different things kill him when find him. But they no hurt when walk in village. And priest take long long time to kill little one if find him. So I hope tall different things treat little one good. I go back to village. Tall different things coming. I hide. They pass. I go into village. Everybody coming out. We see shiny thing go into sky. Everybody afraid. Priest most afraid. He say tall different things bad gods. They angry. Must sacrifice. He want little one to sacrifice. I afraid. I make up story. I say tall different things *good* gods. I say they take little one away to village in sky because killing little ones *wrong.* They come to *save* him. Priest say I lie. I say he lie. I say good gods kill *him* if he kill more little ones when mothers die. Everybody listen. They say tall different ones didn't hurt. Didn't kill. Maybe I *right.* Maybe tall different ones *really* good gods. Priest say not true. *He* make up story. He say bad gods come because he call them to come take little one away and eat him. He say he *call* gods to take little one! But I know he *lie* because they no take. I *put* little one in shiny thing. *But I don't say or they kill me for lying.* I stick to story. I tell everybody tall different ones good gods. Come to save little one. Priest say they bad gods. Come to take little one and eat him. Come to take *us* and eat *us* if we not believe priest. Every-

body say *wait for sign.* Priest say it right. He say gods tell him to. We wonder. Maybe priest just want to be priest. Everybody afraid of priest. Give him best food and best mates. We wait. I cry that night.

The airlock hissed. Ray Caradac came in, wearing his spacesuit against Sirius IV's icy cold, but not the helmet—the planet was breathable.

Mary was waiting. "I saw you coming through the gazer. How'd it go?"

Ray grinned sourly as he zipped down the chest of his suit. Frost chipped off the metallic cloth. "I didn't leave it out in the brush as I'd planned. Afraid an animal would get it. I waited until dark and then went to the village. They pull in their sidewalks early—not a soul stirring. I snuck in quiet as I could, and right in the middle of it the damned critter started squealing its fool head off. Familiar smells or something, I suppose. So I just set it down and walked dignifiedly out of the place. Don't know whether anybody saw me, but I suspect they did. Damn—after all the trouble we went to landing way out here. I looked back at the edge of the brush, and there was a crowd around the kid." He stepped out of the suit and turned to rack it by the airlock, wearing only the standard padded diaper affair. "Funny thing . . . I thought I saw a light flashing. A white light. But, hell, that's impossible—unless they have wood that burns white on this clod. Maybe I was seeing things."

"Well, I certainly hope it's all right," Mary said. "Shame if they did kill it, poor little thing."

Ray stood a moment at the gazer, looking out at the moons-lit brush. "I hope so too, honey. Well"—he turned to the board—"let's get out of here, and fast! Before Article 12, Section 9 fights its way right out of the book and jumps down our throats." He paused as the A. G. unit caught, hummed loudly, then softly and steadily as they rose from Sirius IV. "I wonder if it *will* affect them."

It wasn't until next planetfall, eight months later, that Ray noticed that his pencil-flash was missing from his spacesuit breast-pocket.

He asked Mary about it and Mary thought startedly: *"Not a nipple!"* and said, not believing it, "Oh, it'll turn up, one place or another."

Next darkness we hear noise. We see tall different one

go away. The good gods bring my little one back! Priest come out. Everybody say you *wrong*. You *lie*. Gods *not* eat little one!

Priest afraid. He say they *bad* gods. Bring little one back for sacrifice. They *good* gods. Little one has cold fire in hand. He throw cold fire at priest. This new strange thing. *God* thing. It is a sign! We kill priest. Take him out for the animals to eat. I happy. Everybody like little one. He friend of good gods. Other mothers take care of him. Let him drink. Let other little ones drink. Do for each other, I happy because good gods bring him back

to His people, and the First Night did ring with rejoicing; for He had returned from the Land Beyond the Sky and He said unto those who waited They are Good Gods, and I am Their Messenger, and lo! They have given to me a fragment of the Sun that I may shed light over darkness and open your eyes to good and gentle ways. And the false Priests said unto Him, Prove that you speak Truth; and in wrath He smote the Priests with the great light He carried, and lo! the false Priests were unmasked, and fled into the wilderness where they were devoured by wild beasts. Then the people cried, Welcome, and bade Him lead them; and He said, Care for me, my Children, until I am able. So He was anointed, and fed, and in two suns had grown to manhood; and then He led His People from the valley and taught them to love . . .

"Always," mused the young Galac Federation student. "Always they come to fill a need. But where do they come from? What really are their acts? Where do they go?" He closed the Sirian Bible and put it aside, and picked up another.

THE SILKIE

A. E. van VOGT

Nat Cemp, a class C Silkie, awakened in his selective fashion, and perceived with the receptors that had been asleep that he was now quite close to the ship which he had first sensed approaching an hour before.

Momentarily, he softened the otherwise steel-hard chitinous structure of his outer skin, so that the area became sensitive to light waves in the visual spectrum. These he now recorded through a lens arrangement that utilized a portion of the chitin for distance viewing.

There was a sudden pressure in his body as it adjusted to the weakening of the barrier between it and the vacuum of space. He experienced the peculiar sensation of the stored oxygen in the chitin being used up at an excessive rate—vision was always extremely demanding of oxygen. And then, having taken a series of visual measurements, he hardened the chitin again. Instantly, oxygen consumption returned to normal.

What he had seen with his telescopic vision system upset him. It was a V ship.

Now the V's, as Cemp knew, did not normally attack a full-grown Silkie. But there had been reports recently of unusual V activity. Several Silkies had been psychologically

harassed. This group might conceivably discover where he was heading and use all their energy to prevent him.

Even as he pondered whether to avoid them or to board them—as Silkies often did—he sensed that the ship was shifting its course ever so slightly in his direction. The decision was made for him. The V's wanted contact.

In terms of space orientation, the ship was neither up nor down in relation to him. But he sensed the ship's own artificial gravity and adopted it as a frame of reference. By that standard its approach was somewhat below him.

As Cemp watched it with upper range perception that registered in his brain like very sharp radar blips, the ship slowed, made a wide turn and presently was moving in the same direction as he but at a slightly slower speed. If he kept going as he was, he would catch up with it in a few minutes.

Cemp did not veer away. In the blackness of space ahead and below, the V ship grew large. He had measured it as being about a mile wide, half a mile thick and three miles in length.

Having no breathing apparatus, obtaining his oxygen as he did entirely by electrolytic interchange, Cemp could not sigh. But he felt an equivalent resignation, a sadness at the bad luck that had brought him into contact with such a large group of V's at so inopportune a time.

As he came level with it, the ship lifted gently until it was only yards away. In the darkness on the deck below, Cemp saw that several dozen V's were waiting for him. Like himself, they wore no spacesuits, for they were for the time being completely adjusted to the vacuum of space. In the near background, Cemp could see a lock that led into the interior of the ship. The outer chamber was open. Through its transparent wall he sensed the water that was inside.

A basic longing in Cemp twinged with anticipatory pleasure. He reacted with a startled shudder, then thought in dismay: "Am I that close to the change?"

Cemp, in the Silkie stage entirely a creature of space, settled awkwardly on the deck. The special bone structures that had once been legs were sensitive to molecular activity within solid masses; and so it was through energy interchanges within the bone itself that he felt himself touch the metal.

In a sense, then, he stood there. But he balanced him-

self with energy flows, and not by any muscular contractions and expansions. There were no muscles. And it was with magnetic force that he attached himself to the deck, and with internal control that he moved, one after the other, the virtually solid blocks of highly differentiated bone.

He walked forward like a two-legged being, feeling the stretch of the elasticized bone of his legs. Walking was an intricate procedure for him. It meant softening the tough bone each time, then rehardening. Although he had learned long ago how to walk, still he was slow. He who could streak through space at 50 G's acceleration walked on the deck of the V liner at a mile an hour, and was happy that he could show a semblance of movement in such an environment.

He walked to where the V's stood, pausing a few feet from the nearest chunky figure.

At first look, a V seemed to be a slightly smaller Silkie, but Cemp knew that these bitter creatures were Variants. V for Variant. It was always difficult to determine which type of V one was looking at. The differences were internal and not readily detectable.

And so he had his first purpose: to establish the identity of the V's on this ship.

He utilized that function in his brain which, before it was understood, had been labeled telepathy, to communicate his message. There was a pause, and then a V—who stood well back in the group—replied with the same communication method:

"We have a reason, sir, for not identifying ourselves. And so we ask you to please bear with us until you understand our problems."

"Secrecy is illegal," Cemp replied curtly.

The answer was surprisingly free of the usual V hostility. "We are not trying to be difficult," the V said. "My name is Ralden, and we want you to see something."

"What?"

"A boy, now nine years old. He's the V child of a Silkie and a breather, and he recently showed extreme variant qualities. We want permission to destroy him."

"Oh!" said Cemp.

He was instantly disturbed. He had a fleeting awareness that his son, from his own first mating period, would now be nine.

Relationship, of course, didn't matter. Silkies never saw

their children. His training required him to put all Silkie offspring on the same footing. But it was one of the nightmares of the uneasy peace that reigned among the ordinary humans, the Special People, and the two surviving classes of Silkies, that a high-ability V would show up some day in the unstable world of Variants.

The fear had proved unfounded. From time to time, Silkies who boarded V ships learned that some promising boy had been executed by the V's themselves. Far from welcoming a superior child, the V's seemed to fear that if allowed to become full-grown he would be a natural leader, and would threaten their freedom.

The extermination of promising boys now required the permission of a Silkie, which explained the secrecy. If they didn't obtain permission, they might still kill the youngster, trusting that the murder ship would never be identified.

"Is that the reason?" Cemp demanded.

It was.

Cemp hesitated. He sensed within himself all that remarkable complex of sensations that meant that he was about to change. This was no time for him to spend a day or so aboard a V ship.

Yet if he didn't stay, it would be tantamount to granting permission for the execution, sight unseen. And that, he realized, could not be permitted.

"You have done well," he communicated gravely. "I shall come aboard."

The entire group of V's moved along with him to the lock, huddling together as the great steel door rolled shut behind them, closing them away from the vacuum of space. The water came in silently. Cemp could see it exploding into gas as it poured into the utter emptiness in the lock, but presently, as the narrow space filled up, it began to hold its liquor form, and it roiled and rushed around everybody's lower extremities.

The feel of it was exquisitely pleasurable. Cemp's bones kept softening automatically, and he had to fight to hold them hard. But when the water closed over the upper part of his body, Cemp let the living barrier that made up his outer skin grow soft. Because the feel of the water excited him, now that the change was so near, he had to exercise a conscious restraint. He wanted to suck the warm delightful liquid with visible enjoyment through the gills that were now being exposed. But it seemed to him that such a dis-

play of exuberance might give away his condition to the more experienced V's.

Around him, the V's were going through the transformation from their space forms to their normal gill state. The inner lock opened, and the entire group swam through with a casual ease. Behind them, the inner lock door slid shut—and they were inside the ship itself, or rather in the first of the many big tanks that made up the interior.

Cemp, using his vision now, looked around for identifying objects. But it was the usual dim watery world with transplanted sea life. Sea weeds swayed in the strong currents that —Cemp knew—were kept in motion by a powerful pumping system. He could feel the surge of the water at each impulse from the pumps. As always, he began to brace himself for that surge, accepting it, letting it become one of the rhythms of his life.

II

Cemp had no problems in this environment. Water was a natural element for him, and in the transformation from Silkie to human fish he had lost only a few of his Silkie abilities. All that Silkie inner world of innumerable sensations remained. There were nerve centers which, both separately and in combination, tuned in on different energy flows. In early days, they would have been called senses. But instead of the five to which, for so many centuries, human beings had limited their awareness, the Silkie could record 184 different kinds of sense-impressions over a wide range of intensity.

There was an immense amount of internal "noise." Incessantly stimulation poured in upon him. From his earliest days, control of what his sense receptors recorded had been the principal objective of his training and education.

The water flowed rhythmically through his gills. Cemp swam with the others through a watery fairyland. It was a warm, tropical sea. As he looked ahead, he saw that the water universe was changing because of their approach. The coral was a new, creamier color. Ten thousand sea worms had withdrawn their bright heads into their tiny holes. Presently, as the group passed, they began to come out again. The coral turned orange, then purple and orange,

then other shades of colors and combinations. It was one tiny segment of the submarine landscape.

A dozen fishes in blues and greens and purples darted up the canyon. Their wild beauty was appealing. They were an old life form, Nature-evolved, untouched by the magic of scientific knowledge that had finally solved so many of the mysteries of life. Cemp reached with webbed fingers for a fish that darted close to him. It whirled away in a flurry of momentarily whitened waters. Cemp grinned happily, and the warm water washed into his open mouth—so far had he softened.

He was already smaller. There had been a natural shrinkage from the tense, bony Silkie body. The new-forming muscles were contracted. The now-internalized bone structure was down to a length of seven feet from a space-maximum of ten.

Of the thirty-nine V's who had come out to help persuade Cemp to board the ship, thirty-one—he learned by inquiry—were among the common variant types. The easiest state for them to be in was the fish condition in which they lived. They could be humans for brief periods, and they could be Silkies for periods that varied with these particular persons from a few hours to a week or so. All thirty-one had some control of energy in limited amounts.

Of the remaining eight, three were capable of controlling very considerable energy, one could put up barriers to energy, and four could be breathers for extended periods of time.

They were all intelligent beings, as such things were judged. But Cemp, who could detect on one or the other of his numerous receptor systems subtle body odors and temperatures in water and out, and read meaning into the set of bone and muscle, sensed from each of them a strong emotional mixture of discontent, anger, petulance and something even more intense: hatred. As he nearly always did with V's, Cemp swam close to the nearest. Then, using a particularly resistant magnetic force line as a carrier—it held its message undistorted for a few feet only—he superimposed the question:

"What's your secret?"

The V was momentarily startled. The reflex that was triggered into picking up the message was so on the ready that it put the answer onto a similar force line which, at that

instant of time, was passing through its head in Cemp's direction.

And Cemp had the secret.

Cemp grinned at the effectiveness that he could now force a conversation. He communicated: "No one threatens V's individually or collectively. So why do you hate?"

"I *feel* threatened!" was the sullen reply.

"Since I know you have a wife—from your secret—do you also have children?"

"Yes."

"Work?"

"Yes."

"News, drama. TV? . . ."

"Yes."

"Sport?"

"I watch it. I don't participate."

They were passing through an underwater jungle. Huge, waving fronds, coral piled high, an octopus peering at them from the shadows of a cave, an eel hissing and then darting away and fish by the dozen—it was still the wild part of the ship, where the tropical conditions of an Earth ocean were duplicated. To Cemp, who had been nearly a month in space without a break, swimming here seemed like great sport indeed.

But all he said was, "Well, friend, that's all there is for anyone. A quiet enjoyable existence is the most that life has to offer. If you're envying me my police duties, don't! I'm inured to it, but I only have a mating period every nine and a half years. Would you care for that?"

The implication in his statement, that Silkies could only have sex at intervals of nine years or so, was not true. But it was a myth that Silkies and their closest human allies, the Special People, had found it worthwhile to foster. Normal human beings particularly seemed to find great satisfaction in what they conceived to be a major defect in the otherwise enviable Silkie.

After Cemp completed his reassuring communication, the dark emotion that had been radiating from the V took on added hostility. "You're treating me like a child," he said in a grim manner. "I know something of the logic of levels. So don't give me any of these sophistries."

"It's still mostly speculation," Cemp answered gently. He added, "Don't worry, I won't tell your wife that you're unfaithful to her."

"Damn you!" said the V, and swam off.

Cemp turned to another of his companions and had a very similar discussion with him. This one's secret was that he had twice in the past year fallen asleep while on duty at one of the locks connecting the big ship with outer space.

The third person to whom Cemp addressed himself was a female. Her secret, surprisingly, was that she thought herself insane. As soon as she realized that her thought had come through to him, the substance of her communication became hysterical.

She was a graceful being, one of the breathers—but completely unnerved now. "Don't tell them!" she telepathed in terror. "They'll kill me."

Before Cemp could more than consider what an unexpected ally he had found for himself, let alone decide what made her feel she was insane, the female communicated frantically: "They're going to lure you into one of the shark tanks—" Her almost human face contorted, as she realized what she had revealed.

Cemp asked quickly, "What is their overall purpose?"

"I don't know. But it's not what they said . . . oh, please?" She was threshing in the water now, physically disorganized. In a moment it would look odd.

Cemp said hastily, "Don't worry—I'll help you. You have my word."

Her name, he discovered, was Mensa. She said she was very beautiful in her breather form.

Cemp had already decided that since she might be useful, he would have to let himself be drawn into the shark tank.

It was not obvious when it happened. One of the V's who was capable of energy output swam up beside him. Simultaneously but casually the others fell back.

"This way," said his guide.

Cemp followed. But it was several moments before he realized that he and his guide were on one side of a transparent wall, and the rest of the group were on the other.

He looked around for his companion. The V had dived down, and was sliding into a cavern between two rock formations.

Abruptly the water around Cemp was plunged into pitch darkness.

He grew aware that the V's were hovering beyond the transparent walls. Cemp saw movement in the swaying

weeds: shadows, shapes, the glint of an eye, and the play of light on a grayish body . . . Cemp switched to another level of perception, based on shadow pictures . . . and grew alert for battle.

In his fish stage, Cemp could normally fight like a super-electric eel—except that the discharge was a beam. No contact was required for what he could send forth. The beam had the bright flash of chain lightning, and was strong enough to kill a dozen sea monsters. It was formed outside his body, a confluence of two streams of oppositely charged particles.

But this was not a normal time. The change in him was too imminent. Any fight with a denizen of this sea in space would have to be with levels of logic, not with energy. That he dared not waste.

Even as he made the decision, a shark swam lazily out of the jungle of waving fronds and as lazily, or so it seemed, came toward him, turned on its side and, mouth open, teeth showing, slashed at him with its enormous jaws.

Cemp impressed a pattern on an energy wave that was passing through his brain going toward the beast. It was a pattern that stimulated an extremely primitive mechanism in the shark: the mechanism by which pictures were created in the brain.

The shark had no defense against controlled over-stimulation of its picture making ability. In a flash it visualized its teeth closing on its victim, imagined a bloody struggle, followed by a feast. And then, sated, stomach full, it imagined itself swimming back into the shadows, into the underwater forest in this tiny segment of a huge space-ship cruising near Jupiter.

As the overstimulation continued, its pictures ceased to connect with body movements at all. It drifted forward and finally bumped, unnoticing, into a coral embankment. There it hung, dreaming that it was in motion. It was being attacked through a logic related to its structure, a level that by-passed its own gigantic attack equipment.

. . . Levels of logic. Long ago, now, men had titillated themselves by opening up the older parts of the human brain, where suggested pictures and sounds were as real as actual ones. It was the beast level of logic . . . not human at all. For an animal like a shark, reality was an on-off phenomenon, a series of mechanical conditionings. Now stimulation. Now not. Movement always, restless motion always—the endless

need for more oxygen than was available in any one location.

Caught as it was in a suggested world of fantasy, the motionless shark body grew numb from insufficient oxygen, and started to become unconscious. Before it could really do so, Cemp communicated to the watchers: "Do you want me to kill this game fish?"

Silently, the beings beyond the transparent wall indicated where he could escape from the shark tank.

Cemp gave the monster control of itself again. But he knew it would be twenty or more minutes before the shock would wear off.

As he emerged from the shark tank a few minutes later and rejoined the V's, he realized at once that their mood had changed. They were derisive of him. It was a puzzling attitude on their part, for so far as they knew they were completely at his mercy.

Someone in this group must know why. So—

He saw that they were now in a tank of very deep water —the bottom was not visible. Small schools of brightly colored fish skittered by in the green depths, and the water seemed slightly colder, more bracing: still delightful but no longer tropical. Cemp swam over to one of the V's who was capable of putting out energy. As before, he asked: "What's your secret?"

The male V's name was Gell, and his secret was that he had several times used his energy to kill rivals for the favors of certain females. He was instantly terrified that his murders would be found out. But he had no information, except that the administrative officer of the ship, Riber, had sent them to meet Cemp. The name was important information.

But even more vital was Cemp's disturbing intuition that this task of duty on which he was embarked was much more important than the evidence had so far established. He divined that the shark attack was a test. But for what?

III

Ahead, suddenly, Cemp could see the city.

The water at this point was crystal clear. Here were none of those millions of impurities that rendered the oceans of Earth so often murky. Through that liquid, almost as transparent as glass, the city spread before him.

Domed buildings. Duplicates of the domed undersea cities on Earth, where real water pressure made the shape necessary. Here, with artificial gravity only, water was held in by the metal walls and had only what weight the ship's officers elected to give it. Buildings could be any reasonable size, delicately molded and even misshaped. They could be beautiful for their own sake and need not merely have the sometimes severe beauty of utility.

The building to which Cemp was taken was a soaring dome with minarets. He was guided to a lock, where only two of the breathers, Mensa and a male named Grig, stayed with him.

The water level began to drop. Air hissed in. Cemp transformed quickly to his human shape and stepped out of the airlock into the corridor of a modern, air-conditioned building. They were all three in the nude. The man said to the women, "Take him to your apartment. Give him the clothes. As soon as I call, bring him to Apartment One upstairs."

Grig was walking off, when Cemp stopped him. "Where did you get that information?" he demanded.

The V hesitated, visibly frightened at being challenged by a Silkie. The expression on his face changed. He seemed to be listening.

Instantly, Cemp activated the waking centers of a portion of the sensory equipment that he had let sleep and waited for a response on one or more. Much as a man who smells a strong odor of sulphur wrinkles his nose, or as someone who touches a red-hot object jerks involuntarily away, he expected a sensation from one of the numerous senses that were now on the ready. He got nothing.

It was true that, in his human state, he was not so sensitive as when he was in the Silkie state. But such a totally negative result was outside his experience.

Grig said, "He says . . . as soon as you're dressed . . . come."

"Who says?"

Grig was surprised. "The boy," he replied. His manner indicated: who else?

As he dried himself, and put on the clothes Mensa handed him, Cemp found himself wondering why she believed herself insane. He asked cautiously, "Why do V's have a poor opinion of themselves?"

"Because there's something better—Silkies." Her tone was angry, but there were tears of frustration in her eyes. She went on wearily, "I can't explain it, but I've felt shattered since I was a child. Right now, I have an irrational hope that you will want to take me over and possess me. I wish to be your slave."

Half-dressed though she was, her jet black hair still caked and wet, she had told the truth about her appearance. Her olive white skin was formed, her body slim and with graceful curve. As a breather, she was beautiful.

Cemp had no alternative. Within the next hour, he might need what help she could give. He said quietly, "I accept you as my slave."

Her response was violent. In a single convulsion of movement, she ran over to him, writhing out of her upper garments until they draped low on her hips. "Take me!" she cried. "Take me as a woman!"

Cemp, who was married to a young woman of the Special People, released himself. "Slaves don't demand," he said in a firm tone. "Slaves are used at the will of their master. And my first demand as your master is: open your mind to me."

The woman drew away from him, trembling. "I can't," she whispered. "The boy forbids it."

Cemp asked: "What in you makes you feel insane?"

She shook her head. "Something . . . connected with the boy," she said. "I don't know what."

"Then you're his slave, not mine," said Cemp coldly.

Her eyes begged him. "Free me!" she whispered. "I can't do it myself."

"Where's Apartment One?" Cemp said.

She told him. "You can take the stairway or the elevator," she said.

Cemp went by the stairway. He needed a few minutes, just a few, to determine his course of action. He decided—

See the boy! Determine his fate. Talk to Riber, the administrative officer of the ship. Punish Riber! Order this ship to a check-in point!

These decisions were hardened in his mind as he reached the upper-level and pressed the button beside the door of Apartment One.

The door swung open noiselessly. Cemp walked in—and there was the boy.

He was slightly under five feet tall, as fine looking a human child as Cemp had ever seen. The youngster was watching a TV screen set into one wall of the big room. When Cemp entered, the boy turned lazily and said, "I was interested to see what you would do with that shark, in view of your condition."

He knew!

The realization hit Cemp hard. He braced himself and agreed within himself to die; make no bargains to avoid exposure; come to his final decision with even greater care.

The boy said, "You couldn't possibly do anything else."

Cemp was recovering, but curious. He had set up a complete no-signal condition within himself. Yet the boy was reading detailed signals. How was it done?

Smiling faintly, the boy shook his head.

Cemp said, "If you dare not tell then it isn't much of a method. I deduce that if I find it out, I can defeat it."

The boy laughed, made a dismissal gesture, changed the subject. "Do you believe I should be killed?"

Cemp looked into those bright, gray eyes that regarded him with a boyish mischievousness, and felt a qualm. He was being played with by someone who regarded himself as untouchable. Question was, was the boy fooling himself, or was it real?

"It's real," said the youngster.

And if it was real—Cemp's analysis continued—were there built in restraining factors such as kept Silkies under control?

The boy said curtly, "That I will not answer."

"Very well." Cemp turned away. "If you persist in that decision, then my judgment is that you are outside the law. No person who cannot be controlled will ever be permitted to live in the solar system. But I'm going to give you a little while to change your mind. My advice: decide to be a law-abiding citizen."

He turned, and left the apartment. And at least one important reality was that he was allowed to do so.

IV

Grig was waiting in the hallway outside. He seemed eager to please. Cemp, who wanted to meet Riber, asked if Riber was a breather. Riber was not; so Cemp and Grig took to the water.

Cemp was guided to an enormous depth, to where several domes were fixed to the inner hull of the ship. There, in a water-filled labyrinth of metal and plastic, he found Riber. The administrative leader of the ship turned out to be a long, strong fish being, with the peculiar, protruding eyes of the fish state. He was floating beside a message receiving machine. In one hand he held the transmitter for the machine. He looked at Cemp and turned the machine on.

He said aloud in the underwater language: "I think our conversation should be recorded. I don't think I can trust a Silkie to make a fair report on this special situation."

Cemp acquiesced without an argument. The interchange began with Riber making what seemed to be a completely frank statement. He said, "This ship and all aboard are controlled by that remarkable boy. He is not always here, and so for the most part we do as we always have. But those people who went out to meet you had no way of resisting his commands. If you can deal with him, then obviously we shall be free again. But if you can't, then we are his servants like it or not."

Cemp said, "There has to be some vulnerable level. Why, for example, do you do as he wants?"

Riber said, "I laughed when he first told me what he wanted. But when I came to, hours later, I realized that I had done everything he desired while I was unconscious. As a result, I now do it consciously. This has been going on for about a year, Earth time."

Cemp questioned Riber closely. That he had continued physical functioning when he was under the boy's control indicated that a shut-off of normal outside perception was the principal method of inducing unconsciousness.

Considering that, Cemp remembered the V whose secret was that he had fallen asleep while tending one of the outer locks. At Cemp's request, lock attendants were assembled. He interviewed each one privately with the question: "What's your secret?"

Seven of the twenty revealed, in this unwitting fashion, that they had slept while on duty. It turned out to be that simple. The boy had arrived at the lock entrance, blanked out the mind of the attendant, and entered the ship.

It seemed to Cemp he need examine no further.

There was a frame, logic. The problem, which for a time had seemed to involve some new and intricate kind of telekinetic control, was beginning to look much more mundane.

He returned to the woman's apartment and put on clothes again. Mensa went with him to the door. She whispered, "Don't you dare leave this ship without making love to me. I need to feel that I belong to you."

Basically, that was not so, Cemp knew. She lived by reversals. She would always want what she did not have, despise or reject what she had. But he reassured her that he meant well by her—and went up again to Apartment One.

It seemed to Cemp as he walked in that the boy's face was flushed and that the eyes that had been so bright were duller. Cemp said softly, "If I can figure it out, so can any Silkie. You went to a lot of trouble. Which tells me you do have limitations."

Silkies could approach a vessel, undetected, if they were prepared to manipulate energy waves. But the method was involved, requiring training.

Cemp said, "Well, you know my thoughts. Which one is correct?"

Silence.

"Your problem," said Cemp emphatically, "is that the Special People take no chances with dangerous deviates."

He hoped the boy understood how ultimately determined the Special People were.

Abruptly, the boy sighed. "I might as well admit it. I am Tem, your son. When I realized it was you approaching the ship, I thought I'd have a look at my father. The truth is I became frightened that those abilities which you found so unusual would be detected. So I've been out here in

space setting up an operating base to which I could retreat for my own protection. But I realize I need help. I think some changes should be made in our relationship with human beings. Other than that, I'm willing to conform and be re-educated."

For Cemp, it was the decisive clarification. Then and there he made up his mind. There would be no execution.

Hastily—for Cemp was a man in a hurry—they discussed the situation. Cemp would have to tell of this meeting when he got back to Earth. There was no way by which a Silkie could conceal the facts from the perceptive Special People. And for many months, while he was in his mating stage, he would have no control of energy. During that period the boy would be at the mercy of a highly prejudiced law.

Tem was disdainful. "Don't worry about me. I'm ready for them."

It was rebel talk, dangerous and unfortunate. But this was not the moment to point that out. Such matters could be left until they got home.

"You'd better start now," said the boy, "but as you'll see I'll get to Earth before you do."

Cemp did not pause to find out how he would achieve such a miracle of speed. That also would have to wait.

As Cemp removed his clothes in Mensa's apartment, he said to her with considerable pride, "The boy is my son."

Her eyes widened. "Your son!" she said. "But—" She stopped.

"What's the matter?" Cemp asked.

"Nothing," She spoke mechanically. "I was surprised, that's all."

Cemp finished dressing, then went over to her, and kissed her lightly on the forehead. He said, "I sense that you are involved in a love relationship."

She shook her head. "Not now. Not since—" She paused. She seemed bewildered.

It was no time to check on a woman's love life. If ever a man was in a hurry it was he.

When Cemp had gone, the boy came in. "You almost gave me away," he said in a tone that was wholly unchildlike.

She cringed. "I'm only a V," she pleaded.

He began to change, to grow. Presently, a fully adult human male stood before her. He directed toward her an en-

ergy wave that must have exerted an enormous attraction to her, for in spite of the deepening expression of distaste on her face she swayed toward him. When she was within a foot of him, he cut off the wave. She drew back immediately. The man laughed.

But he turned away from her, and for a few moments then he opened a communication line to someone on the planet of a distant star. He said in a silent interchange:

"I have finally risked confrontation with a Silkie, one of the powerful inhabitants of this system. He is guided by an idea called Levels of Logic. I discovered that his had to do with his only offspring, a boy he has never seen. I distorted his interest in this child in a subtle way. I think I can now land safely on the principal planet, which is called Earth."

"To distort it, you must have had to use him as a channel."

"Yes. It was the one risk I took with him."

"What about the other channels you have used, Di-isa-rill?"

The man glanced at Mensa. "With one possible exception, they would resist any attempt of a Silkie to explore their minds. They're a rebel group called V's, and are suspicious of and hostile to the other peoples in this system. The exception is a V woman who is completely under my control."

"Why not annihilate her?"

"These people have some kind of a sensitive telepathic connection, which they seem to be able to manipulate but which I have not wholly solved. If she died I think the others would know instantly. Therefore I cannot do what I normally would."

"What about the Silkie?"

"He is heading to Earth in a state of delusion. Equally important, he is due to suffer a physiological change which will strip him of all his present offensive and defensive powers. I intend to let this physical process run its course—and then kill him."

V

Cemp had relayed the story through Satellite-Five-R to his contact, Charley Baxter, at the Silkie Authority. When he reached the satellite, and transformed to human, he found a radiogram from Charley waiting for him. It said:

HAVE PICKED UP BOY. AUTHORITY FORBIDS YOU TO LAND UNTIL THIS IS ALL SETTLED.

"Till you've done away with him, you mean!" Cemp thought angrily. The official action surprised him: an unexpected obstacle.

The commander of the satellite, a normal intelligent human being, who had handed him the message, said, "Mr. Cemp, I have received instructions not to let you on any ferry to Earth until further notice. This is very unusual."

"Unusual" was an understatement. Silkies ordinarily moved freely to and from Earth.

Cemp made up his mind. "I'm going out into space again," he said in a matter-of-fact tone.

"Aren't you due for the change?" The officer seemed doubtful about letting him go.

Cemp smiled wryly and told the Silkie joke about such things, about how Silkies were like some mothers-to-be who kept having false labor pains. Off to the hospital they went. Lay there in bed. At last returned home. And so, after several false alarms, baby finally was born in a taxicab.

"Well, sir," said the man unhappily. "You do as you please. But there aren't any taxicabs in space."

"It's not that instantaneous; you can fight it off for hours," said Cemp, who had been fighting it off for hours.

Before he left, Cemp sent a radiogram to his wife:

DEAR JOANNE: DELAYED BY DISPUTE. WILL ADVISE WHEN TO MEET, BUT SOON. CALL CHARLEY. HE'LL FILL YOU IN. ALL MY LOVE. NAT.

The coded message would upset her, he knew. But he did not doubt that she would meet him at their pre-arranged rendezvous, as he wanted. She would come if only to find out on behalf of the Special People what he was up to.

Once out in space, Cemp headed for a point over the South Pole, and then he began his entry.

He came in fast. According to theory, that was the only way an unprotected approach should be made. The poles were relatively free of radiation. There, where the magnetic field of the planetary body was bent inward right down to the ground, the potent Van Allen radiation belt was a minimum threat.

Nonetheless, there were two periods of severe bombardment, one of high energy stripped nuclei, the other of X-rays. The X-rays did him no harm, and for the most part, the stripped nuclei passed right through his body as if it were a hard vacuum. Those nuclei that hit, however, left a small wake of radioactivity. Hastily, Cemp expelled the more seriously damaged cells, with that special ability Silkies had of eliminating damaged parts of their bodies.

As he entered the atmosphere, Cemp gradually activated the planet's magnetic force lines behind him. Even as they began to glow brightly, he felt the radar beams from below bouncing from him. But they were not a problem now. Radar would register the movement of his body and the pyrotechnic display to his rear as one phenomenon. The outward appearance was of a meteorite shooting toward the ground.

His entrance being slantwise in the direction of Earth's rotation, his speed of entry was within his capacity to absorb, or radiate from him, the heat of his passage through the air. At ten miles up, he slowed even more and came down in the sea north of Antarctica about a thousand miles from the lower tip of South America. The cold waters quickly washed from his Silkie body the radioactive debris that still clung to the outer bone. He darted along about five hundred feet up, using the water as a coolant by slowing and diving into it whenever he got too hot. It was a fine balancing of extremely rapid acceleration and deceleration. But he made it to near where he lived at the lower tip of Florida in slightly more than forty minutes, the last five of which were wholly underwater.

As he surfaced within sight of the beach, he transformed to his fish stage, and then—two hundred feet from shore—to human. He had already seen Joanne's car parked on the road behind a sand dune. He did the overhand crawl to get to shallow water, and ran against the surging waves up

the embankment to where she lay on a blanket, watching him.

She stood up, a slender, very pretty woman, blonde and blue-eyed. Her classically even features were white and set now; but she handed him a towel. Cemp dried himself, and climbed into the clothes she had brought. A few minutes later they were in the car; and at this point she accepted his kiss. But she still withheld her thoughts, and her body was rigid with disapproval.

When she finally communicated, it was verbally and not by direct energy. She said, "Do you realize that if you persist in this you will be the first Silkie in a hundred years to get himself punished or executed?"

That she spoke out loud confirmed Cemp's suspicion. He was now certain that she had reported his illegal entry to the Silkie Authority, and that people were listening in to this conversation. He felt no blame of Joanne. He even surmised that all the Special People were prepared to help him through this trying period. They were probably also speeding up the investigation of Tem, so that the execution would be quickly over with.

"What are you going to do, Nat?" She sounded anxious now, rather than angry. There was color in her face for the first time.

At some depth within, Cemp felt vaguely surprised at how determined he was. But the awareness did not trigger any question in him. He said coolly: "If they kill that boy, I'll know the reason why."

She said softly, "I never realized that a Silkie could have so much feeling for his child, whom he has not seen since birth."

Cemp was irritated. "It's not personal," he said curtly.

She said with sudden emotion: "Then you know the reason very well. This boy evidently has a method of concealing his thoughts, and of reading minds—according to your own account—that even you could not penetrate. With such a person, the Special People will not have their historic protection. It becomes a matter of policy."

"In making my report," said Cemp, "I advised a five year study and re-education program for the boy. That's the way it's going to be."

She seemed not to hear. She said as if thinking out loud: "Silkies were mutated by humans, on the basis of the great biological discoveries of the last half of the twentieth cen-

tury. When the basic life chemical unit, DNP, was isolated, major advances in life forms, other than those naturally spawned in Nature, became possible. Because the first transformations were to the fish stage, the new beings were called Silkies—after an old song.

"But it had to be done carefully. The Silkie could not be permitted to breed as he pleased. So his genes, which endow him with so many marvellous senses and abilities, also contain certain limitations. He can be a man, a fish, a Silkie at will. So long as he does it by body control, he has nearly all his Silkie abilities in any of these forms. But every nine and a half years he has to become a human being again, in order to mate. It's built into him, where he can't interfere with it. Silkies who long ago tried to eliminate this phase of the cycle were executed. At the time of such a compulsive change to human form, he loses all his Silkie abilities, and becomes fallibly human. That's the great hold we have over him. Then we can punish him for anything illegal he did as a Silkie. Another hold is that there are no female Silkies. If the issue of a Silkie mating with a woman of the Special People is a girl, she is not a Silkie. That, too, is built into his genes—"

She broke off. "The Special People are a tiny, tiny portion of the main human stream who—it was discovered—had a spontaneous ability to read the minds of Silkies. They used this to establish administrative ascendancy while there were still only a few Silkies, and thus they protected themselves and the human race from beings who would otherwise have overwhelmed them."

She finished in a puzzled tone: "You've always agreed that such protection was necessary, for human beings to survive. Have you changed your mind?" When Cemp did not reply, she urged: "Why don't you go to the Silkie Authority and talk to Charley Baxter? A single conversation with him will get you further than any rebellion." She added quickly, "Tem is there. So you'll have to go there anyway. Please, Nat."

It wasn't so much, then, that Cemp agreed with what she said. He thought of her suggestion very distinctly as offering a way of getting inside the building— But he was not too surprised as his helijet came down on the roof to see Charley Baxter waiting for him, tall, rather good-looking, thin, unusually pale.

As they rode down in an elevator, Cemp felt himself pass

through an energy screen—which instantly sealed off the pulsations from the outside world. And that was normal enough except for the force that was driving the screen. He sensed that the power backing it was enormous enough to protect a city, or even a part of the planet.

Cemp glanced questioningly at Baxter, and met a pair of sober, serious eyes. The man said seriously, "At this point, you may read me."

What he read in Baxter's mind was that his own radiogram about Tem had caused a hasty examination of Tem's record. Result: they decided the boy was normal, and that something very serious had happened to Cemp.

"At no time," said Baxter, "has your son been in danger. Now, take a look at that TV picture. Which one is Tem? One is."

They had walked from the elevator into a large room. On the TV screen on one wall was a street scene. Several boys were approaching what must have been a hidden camera, for they showed no awareness of its presence.

Cemp's gaze flicked across the strange faces. "Never saw them before," he said.

"The boy to your right is your son," said Baxter.

Cemp looked, then turned and stared at Baxter. And because his brain had energy relationships that by-passed mere neuron connections, he got the whole picture in a single flash of understanding. The instantaneous comprehension included analytical awareness of how his duty to protect all Silkie children had been skillfully twisted by his pseudo son. It leaped on to a lightning examination of the energy level that had signaled to him. Almost immediately, he realized that the signal was the only direct contact that had been made by the boy on the V ship. In every other way, the fraudulent Tem had merely been a recipient of signals.

He grew conscious of Baxter's bright eyes watching him. The man asked breathlessly: "Think we can do anything?"

It was too soon to answer that. Cemp was gratefully realizing how skillfully he had been protected by the Special People. It seemed to him that if he had suspected the truth at any moment before being taken behind the energy screen that now guarded him—the false Tem would probably have tried to annihilate him.

Baxter was speaking again. "You sit down here, and let's see what the computer makes of the one signal you received."

The computer extrapolated three structural frames that

might fit the false Tem. Cemp and Baxter studied the coded messages with amazement, for they had not actually considered anything beyond an unusual V frame.

All three formulated structures were alien.

A quick analysis established that two of the three did not require secrecy on the part of so powerful a being as the invader undoubtedly was. Therefore the third frame, involving a gruesome form of esoteric sex climaxed by the ritual murder of one partner by the other, spiderlike, was the most likely.

Baxter's voice had in it a desire not to believe. "That picture of their needing a lot of love objects—could that be real?" He finished in a subdued tone: "I'll alert all Silkies, mobilize our other forces—but can you do anything at once?"

Cemp, who had already adjusted his sensory system to include all three alien frames, was tense and afraid. He said aloud, "I asked myself where he would go and of course it would be to my home. Do you think Joanne would have gotten there yet? Was she supposed to head somewhere else?"

He saw that Baxter was shaking his head . . .

Cemp hurried through a door that led to a wide balcony, transformed to Silkie, did a partial cut-off of gravity combined with control of magnetic force lines . . . a man in a far greater hurry than he had ever been in before.

He entered the large house by the sea in his human form, the better to run the last few yards and maneuver in corridors. And because he had adjusted to the alien sensory structure his arrival was only partly signaled.

He found Joanne in the master bedroom, half-undressed.

She had never seemed so attractive. Her smile, warm, inviting, friendly, drew him. Some state of excitement she was in communicated to him, stirring an impulse so basic that it was as if a fine translucent sheath dropped over his senses, blurring his view of reality. The woman, almost luminescent in a fleshly radiance, lay on the pink bed and his whole being focused on her. For a long moment, nothing else existed. They were two people intensely in love.

Breathless, astounded by that instant, hideous power, Cemp put his thought on the possible fate of the real Joanne, put his attention on fear for her—and broke the spell.

The rage, hate and violence that had been building up in him broke through.

But the magnetically controlled radiation that Cemp launched at the creature crackled harmlessly against a magnetically controlled energy screen . . . Frothing, he plunged at the being, grabbed at him with his bare hands.

For seconds they grappled, the almost nude woman and the wholly naked Cemp. Then Cemp was flung back by muscles that were ten times as strong as his own.

He bounded to his feet, but he was sobered, thinking again.

He began to consider the entire problem of Earth in relation to this creature and the threat it represented.

The duplicate of Joanne was changing. The body in front of Cemp became that of a man with the frilly clothes of a woman's underdress still draped on the lower part of his body. But there was nothing feminine in his manner. Eyes blazing with the infinite violence potential of the male, the entity locked gazes with Cemp.

Cemp was feeling a desperate anxiety for the real Joanne. But it did not even occur to him to ask this creature about her. He said, instead, "I want you to leave. We'll communicate when you're a million miles out in space."

The handsome human face of the other broke into a disdainful smile. "I'll go. But I sense in you a plan to learn from me where I come from. That will never happen."

Cemp replied in a level tone: "We'll see what two thousand Silkies can get out of you."

The being's skin glistened with health, shone with confidence and power. He said: "Perhaps I should remind you that we Kibmadine have achieved a total control of all the forces that Silkies control only partially."

Cemp said, "Many rigidities can envelop one flexibility."

The other said in an uncompromising voice, "Don't attack me. The price is too high."

He started to turn away. And there was a moment, then, when Cemp had another thought, another feeling: a reluctance to let this being go without some attempt to reach across the abyss that separated them. Because this was man's first contact with an alien intelligence. For a few fleeting seconds Cemp remembered the thousand dreams that human beings had had for such a meeting. His hesitation came to its inevitable end. The infinitely hostile reality moved in to fill the endless void between them.

Instants later the alien was out on the patio, dissolving, changing—and was gone.

Cemp contacted Baxter and said, "Line me up with another Silkie so that he can take over. I'm really awfully close to my change."

He was lined up through the Silkie communications hub with a Silkie named Jedd. Meanwhile, Baxter said, "I'm on my way over. I have been given a lot of governmental power."

Cemp found Joanne in one of the spare bedrooms. She lay on the bed, fully dressed, breathing slowly and deeply. He sent a quick flow of energy through her brain. The reflexes that were stirred reassured him that she was merely sleeping. He also picked up some of the alien energy that was still in her cells. They told a story that made it instantly obvious why she was still alive: The Kibmadine had used her living body as a model for his duplication of her.

On this occasion at least the creature had been after bigger game: a Silkie.

Cemp did not try to rouse the sleeping woman. But he was greatly relieved as he went out onto the patio, which overlooked a white, sandy beach and the timeless blue ocean beyond. He sat there until Baxter presently joined him.

Baxter said, "I sense a doubt in you."

Cemp nodded.

Baxter asked gently, "What do you fear?"

"*Death!*"

It was a feeling deep inside him.

Sitting there, he made up his mind—for the second time since he had become involved with the alien—to die if necessary. And with that decision, he began to turn on his receptors, all of them except that to start, he turned out local Earth noise. TV, radio, innumerable energies from machines—these had to be shut away from him. Swiftly, then, he began to "hear" the signals from the plenum.

Long before Silkies it had been known that space was alive with messages; the entire sidereal universe pulsed with an incredible number of vibrations. Hour on hour and year by year, Silkies lived with that ceaseless "noise," and most of their early training was entirely and exclusively directed to the development of selective sleep and rest and wakefulness mechanisms for each receptor.

Now—those that were asleep awakened. Those that were at rest alerted.

His brain came to peak awareness.

He began to sense the near stars, the distant stars, the

clusters, the galaxies. Every star had its own complex signal. Nowhere was there a duplication or even a close similarity.

The universe that he tuned in upon was composed entirely of individuals. Cemp appraised the distance of each star, the uniqueness of each signal. Friendly space world! Every star being exactly and precisely what it was and where it was gave meaning to the immense stellar universe. There was no chaos. He experienced his own location in space and time, and it gave him a certainty of the basic rightness of things.

VII

He came back from his far-flung ranging to about a million miles from Earth. There he paused to let the signals come in from all of the space between.

Without opening his eyes, he said to Baxter, "I don't read him. He must have gone around the planet and put the mass of Earth between him and me. Are the reflectors ready?"

Baxter talked on a phone line that had been kept open for him. Previously alerted Telstar and astronomical satellites were placed at Cemp's disposition. Through one of the reflectors, he focused on the invading entity.

Cemp said to the alien, "Above everything else we want information."

The other said, "Perhaps I should tell you our history."

And so Cemp was given the story of the eternal lovers, more than a million beings who moved from one planetary system to another, and each time altered themselves to the form of the inhabitants and established a love relationship with them—a love relationship that meant death and pain for their love-objects. Only twice had the lovers met beings of sufficient power to make them draw back. In each instance, they had destroyed the entire system.

Di-isarill finished: "No additional information is available no matter what you do."

Cemp broke contact. A shaken Baxter said, "Do you think that was true information?"

Cemp answered that he thought it was.

He finished with finality: "Our job is to find out one thing: Where does he come from? And then destroy him."

"But how do you propose to do this?"

It was a good question. His single clash with the creature had brought him up hard against a wall of power.

Cemp sank lower into his settee and with closed eyes considered the problem of a race of beings who had complete control of body change. Many times in those long duty watches out in space, he had pondered such possibilities; for the cell could grow and ungrow, divide, split off, fall away and re-form, all within a few seconds. In the twilight virus, the bacteria and the cell had their complex being, the enormous speed of change had made possible the almost instantaneous orderly altering of human to Silkie and back again.

The invader apparently could change to an infinite number of forms with equal rapidity, assuming any body shape at will.

But the logic of levels applied to the Kibmadine's every action.

From somewhere behind Cemp, Baxter said, "Are you sure?" His voice sounded incredulous.

Cemp had two reactions to the question: Extreme joy at the hope that his analysis brought . . . and the stronger conviction. He said aloud, "Yes, logic applies. But for him we'll need the closest contact of the energies involved. Inches would be better than feet, feet better than yards. So I'll have to get out there in person."

"Out where?" Baxter asked, almost incredulous.

"To his ship."

"Do you think he has a ship?"

"Of course he has one. Anything else would be impractical for his operations.

Cemp was patient as he made his explanation. He had observed that even the Special People had exaggerated ideas on such matters. They tended to accept that Silkies were more capable than they were. But the logic of it was simple: coming in toward a sun, one could utilize its full gravitational pull to get up speed. Right now the Kibmadine would be "climbing the ladder" of the planets, cutting off the sun's gravity from behind, opening up to the pull of Jupiter and the outer planets.

No sensible being would try to bridge the distance between stars by such a method. So there was a ship. There had to be.

Cemp said, "Order a spaceship for me, complete with a tank of water that can be moved."

"You expect to change before you get there?"

"It'll happen any minute."

Baxter said, amazed, "You intend to confront the most powerful being that we can imagine without a single bit of energy of your own available?"

"Yes," said Cemp. "It's the only way we'll get him within inches of the energy source I want installed in the tank. For heaven's sake, man, get started."

Reluctantly, Baxter reached for the phone.

VIII

As Cemp expected, he began his change en route. By the time he was put aboard the Kibmadine ship, he was already in a tank of water in his first compulsive change, which was to the fish state.

He would be a class B Silkie for slightly more than two months.

As Di-isarill came finally to the tiny ship in its remote orbit beyond Pluto, he noticed at once that the entrance mechanism had been tampered with, and he sensed the presence of Cemp aboard.

In the course of countless millennia his fear reflexes had fallen into disuse. So he had no anxiety. But he recognized that here was all the appearance of a trap.

In a flash, he checked to insure that there was no source of energy aboard that could destroy him. There was none; no relay; nothing.

A faint energy emanated from the tank. But it had no purpose that Di-isarill could detect.

He wondered scathingly if these human beings expected somehow to work a bluff whereby he would be impelled by uncertainty to stay away from his own ship.

With that thought, he activated the entrance mechanism, entered, transformed to human, walked over to the tank that stood in the center of the tiny cabin—and looked down at Cemp, who lay at the bottom.

Di-isarill said, "If it's a bluff, I couldn't possibly yield to it because I have nowhere else that I can go."

In his fish state, Cemp could hear and understand human words but could not speak them.

Di-isarill persisted: "It's interesting that the one Silkie whom I cannot read has taken the enormous risk of com-

ing aboard. Perhaps you were more affected by the desire I attempted to rouse in your home than appeared at the time. Perhaps you long for the ecstasy and the anguish that I offered."

Cemp was thinking tensely: "It's working. He doesn't notice how he got onto that subject."

The logic of levels was beginning to take effect.

It was a strange world, the world of logic. For nearly all of his long history, man had been moved by unsuspected mechanisms in his brain and nervous system. A sleep center put him to sleep. A waking center woke him up. A rage mechanism mobilized him for attack. A fear complex propelled him to flight. There were a hundred or more other mechanisms, each with its special task for him, each in itself a marvel of perfect functioning but degraded by his uncomprehending obedience to a chance triggering of one or another.

During this period, all civilization consisted of codes of honor and conduct and of attempts noble and ignoble to rationalize the unknown simplicities underneath. Finally, came a developing comprehension and control of the neural mechanisms, one, then another, then many.

The real age of reason began.

On the basis of that reason Cemp asked himself: Was the Kibmadine level lower, or higher, than for example the shark?

It was lower, he decided. The comparison would be, if man had brought cannibalism into civilization with him. A lower level of logic applied to that.

The shark was relatively pure within his frame. He lived by the feedback system, in a pretty good balance. He did not age, as humans did. He grew older—and longer.

It was a savagely simple system. Keep in motion: that was the law of it. What poetry that motion was, in the wide, deep sea that had spawned him! But it was—feel need of oxygen, get excited, swim faster; enough oxygen, slow, cruise, even stop. But not for long. Movement continuous—life.

Eating, of itself, was lower, more basic, went farther back into the antiquity of the cell.

And so, the mighty Kibmadine had brought into their innumerable forms one pattern that was vulnerable, one they wouldn't give up, no matter how much they controlled the other basic mechanisms of their bodies . . .

Di-isarill was calm as he sped through space. He sensed that he had subtly managed to influence Cemp to the fear of intolerable retaliation . . . Unfortunate that the Silkie had analyzed the Kibmadine structure so accurately. It made direct reading of Cemp's feelings and thoughts difficult.

Not that it mattered. Under other circumstances, Earth might well have been a planet to be destroyed. But there was no chance at all of enough Silkies being produced in time to save the system from being conquered.

And so another race would, one at a time, experience the ecstasy of being eaten as the culmination of the act of love. . . . What a joy it was to receive from tens of millions of cells! First resistance, terror, shrinking; and then the inversion: every part of the being craving to be eaten, longing, begging, demanding—

Di-isarill's calmness yielded to excitement, as the pictures and the feelings re-formed in his mind, from ten thousand remembered feasts of love-objects.

"I really loved them all," he thought sadly.

Too bad they were not brought up to appreciate in advance the ultimate delight of the all-consuming end of the sex orgy.

It had always bothered Di-isarill that the preliminaries had to be secret, particularly with beings who had the ability to transmit thoughts to others of their kind and thus warn them. The greatest pleasure always came when the ending was known, when part of the love play consisted of reassuring the troubled, trembling being, quieting the pounding heart.

"Some day," he told thousands of love partners, "I shall meet someone who will eat me. And when that happens—"

Always he had tried to persuade them that he would rejoice as he was being devoured.

The inversion involved was a phenomenon of the life condition: first, resistance, terror, shrinking; then every part of the being craving to be eaten, longing, begging, demanding. The urge to succumb could be as powerful as the urge to survive.

Standing there in front of the tank, looking down at Cemp, Di-isarill felt a quickening of emotion as the conjuration of himself being eaten flitted like a fantasy through his brain. He had had such pictures before but never before so strong.

He did not notice that he had passed the point of no return.

Without thinking, he turned away from the tank. Cemp forgotten, he transformed quickly into a remembered form, long-necked, with smooth dappled skin and powerful teeth. He remembered the form well and lovingly. The members of the race had been love objects for the Kibmadine not too long ago. Their bodies had a particularly excruciating pleasure nerve system.

Di-isarill could scarcely wait.

Even as he became the form, his long neck twisted. A moment later the teeth, impelled by the merciless Kibmadine biting drive, cut off an entire thigh.

The pain was so hideous he screamed. But in his enchanted brain the scream was only an echo of the countless screams that his bite had evoked in the past. Now, as then, the sound excited him almost beyond endurance. He bit deeper, champed harder, ate fast.

He devoured nearly one half of his own body before the imminence of death brought a baby fear from his own true past. Whimpering, blindly longing for home, he opened a line to his contact on the planet of the far sun where his kind now dwelt.

At this instant an outside force surged past him and overwhelmed his personal communication. As one, a dozen Silkies loaded an electric charge on that line, all they believed it could carry.

The charge that struck the distant Kibmadine totalled more than 80,000 volts and over 140,000 amperes of electricity. It was so powerful it smashed all his reflex defenses and burnt him in a single puff of flame and smoke.

As quickly as it had opened, the line ceased to exist. The Sol system was now only an anonymous, distant star.

The tank with Cemp in it was carried to the ocean. He crawled out into the sea, breasted the incoming tide.

The bubbling fresh liquid poured through his gills. As he reached the deeper water, he submerged. Soon the thunder of the surf was behind him. Ahead was a blue sea and the great underwater shelf where a colony of class B Silkies lived their fishlike existence.

He would dwell in their domed cities with them . . . for a time.

A BETTER MOUSETRAP

JOHN BRUNNER

"I'd like you to meet Professor Aylward of Copernicus Observatory," said Angus.

Up to that point, Captain Martinu had seriously been considering leaving the party. The band was much too loud. The dancing was far too energetic for someone like himself, who was used to long periods of free fall that wasted the muscles. And the promise of interesting people to talk to, with which Angus had persuaded him to come along, had not been fulfilled.

Now, though, he felt a sudden stir of interest as he shook the hand of the short, bespectacled, balding scientist. He said, "You mean you're the Aylward they named the Aylward Field after?"

"Er—" Aylward looked uncomfortable. "Well, as a matter of fact, yes, I am."

"As a result of which," Angus said, "I owe you my life, among other things." He ran his hand through his shock of coarse black hair, which stuck up from his head, in the currently fashionable Fijian style, like a chimney-sweep's brush.

Martinu said, "And I owe you a couple of billion dollars. We picked up a buster with your field in the old *Castor*, when I was a junior engine tech."

Rather diffidently, Aylward eyed the other's immaculate uniform. "And stayed on in the space service?" he said. "Isn't that unusual?"

"Oh, unique!" Martinu agreed with a trace of pride. "I'm the only man in the service who's picked up a buster and not immediately bought himself out of a career job. I say, is there anything I can do for you?"

Aylward seemed to be in some distress, his breathing deep and stertorous, his shoulders hunching forward. He said, "You can help me to a chair, if you will. I've been on Luna for the past seventeen years. Full gravity makes me terribly tired."

Martinu hastily took the professor's arm. He was in top physical condition—had to be—but even so he was quickly exhausted by a couple of hours on his feet, so he could appreciate Aylward's discomfort. Angus, as always, had vanished the moment he saw a conversation starting and gone to spark another one elsewhere.

There was a vacant double seat in the nearest of the alcoves off the dance floor. Martinu headed for it. There was a couple engaged in violent love-making on the other seat but he ignored their looks of irritation as he sat Aylward down. He said, "Let me get you a drink."

"That's very kind of you," said Aylward. He wiped sweat from his forehead with a bandanna handkerchief matching his Mexican-styled cummerbund. "A long cool one, for choice."

"Will do," said Martinu, and went in search of a waiter.

He was on his way back with the drinks when Angus, a look of anxiety on his long face, pushed through a cluster of other guests and caught his arm.

"Martinu, I guess I should warn you about old Aylward. I mean, he's a nice guy and a genius and all that. But like a lot of geniuses he's a bit nutty on one point. Unfortunately you've hit it right away."

"What? Busters?"

"Yes. He has a perfectly absurd theory about what they are and where they come from. If you get him started on it, he'll bend your ear all night."

Martinu shrugged. "If he hasn't got a right to theorize about busters, who has? Besides, the Aylward Field got me a share in one. I reckon listening to him for an hour or two is a cheap price to pay for that."

"Damn it, I had to tell him what a buster was, once!"

Angus made a sweeping gesture which spilled his drink over the back of his hand. Fishing for a handkerchief to dry it, he went on, "In fact, if it hadn't been for me—"

Something in Martinu's expression warned him. He broke off. "I guess I told you about that. Sorry. But don't say I didn't warn you, will you?"

Martinu grinned and walked on.

The lovers had gone, presumably in search of more privacy. He set a tall frosted glass beside the professor and sat down himself. "I got you julep," he said. "Is that all right?"

"Perfect." Aylward produced a length of tubing and dropped one end into the glass to save himself the effort of holding it up while he drank. "What are you having?"

"Slivovitz," said Martinu. "Sort of homage to my Balkan ancestry. Anyway, what brings you back to Earth after such a long time, professor?"

"Oh, someone seems to be infringing the patents on the Field," Aylward answered. "Angus told me I was needed, so I came down. He's my agent, you know—and very good he is. I don't know how I'd manage without him. I've always found the world of commerce far more complicated than any problem in astrophysics, because it's easier to improve your equipment than yourself."

"You have quite a setup at Copernicus, don't you? They tell me it's the best-equipped observatory in the System, and you financed practically all of it yourself. May I inquire —does the Field bring you in a good income?"

Aylward gave a tired smile. "Excellent! I never expected so much return for so little effort."

He drew out the tube from his now half-empty glass and began to run it absently between his fingers. "People sometimes ask me," he went on, "why I stick at my job when I'm wealthy enough to live in luxury on Earth. I think you'll probably understand me when I say I think I made a sensible decision." He cocked an eyebrow at Martinu.

The captain suddenly found himself liking Aylward a lot. He smiled, and as he nodded agreement his hair bobbed around his face. It was too soft for the Fijian style, so he had had to settle for curls like a Queen Anne wig. Being used to a free-fall crewcut he found it a permanent irritation. Damn these silly Earthside fads!

"I wouldn't even have come to this party but for Angus's insistence," Aylward went on. "I depend completely on him,

as I said, and he does have this tendency to fly off into space over the littlest things . . . We were on the *Algol* together when we located the buster which started the whole thing. Did he ever tell you the story?"

Almost, Martinu said, "He's told everybody!" But he checked himself. For one thing, Angus's version of the story had probably been colored by the passage of time, while Aylward's might give a different slant. And for another, though the professor's tone had been conventionally light, Martinu sensed that he was actually aching to find someone to listen to him. Angus had more than likely gone around warning all his other guests about Aylward's obsession with the buster problem.

He set his glass down on his knee. "That was when Rusch was in command, wasn't it?" he said. "Yes, I'd very much like to hear about it."

II

The radar tech first class at number three screen held his breath for a long moment. When he let it out, it was to speak in a voice shaky with excitement.

"Buster, sir!" he said.

The lieutenant on the other side of the room whipped around and bounded over with a hard kick at the far wall. He caught the back of the tech's chair with one hand and hung there floating, his eyes wide. "Where—where do you see it?" he demanded.

"There, sir." The tech put his finger on a large green blip near the center of the screen. "It broke through about ten seconds ago. I saw it arrive. And the range and mass are exactly right."

He hardly waited for an answer before shouting to the orderly at the phone desk.

"Green, get me a line to the bridge!"

"Aye-aye, sir," said the orderly unemotionally.

The lieutenant turned to the screen again. He said, "What's the range?"

"About four and a half kil, sir. Right under our feet."

The lieutenant whistled. "Well, for sure it didn't sneak up on us. Read it for relative velocity, will you?"

The tech slid cross-hairs over the screen, centered on the blip, pressed the switch of the doppler integrator. They

waited the necessary five seconds and a figure went up on the dial.

"Six hundred," the lieutenant said. "Hasn't settled into its natural orbit yet. I think—"

He was going to say he thought the tech was right, but the communications orderly interrupted. "Bridge, sir!"

"Chuck it over," said the lieutenant, and picked the phone out of the air as it soared across the room. He continued into it, "Ahmed, screen-room watch, sir. One of my techs thinks we're on a buster."

"Hah!" said Captain Rusch skeptically. "How are we doing for white whales this week?"

"It showed up without warning on number three screen at four and a half kilomiles, sir. We haven't had a chance to check its orbit yet, but its relative velocity is only six hundred.

There was a pause. At length Rusch grunted. "Right, I'll get a 'scope on it," he said. "Bearing?"

"Oh-seven-six and a half, sir."

"Thank you, Lieutenant. I'll let you know the verdict. Don't get too worked up till we're sure, will you?"

That, of course, was a pious hope, Rusch reflected as he gave the bridge phone back to his own communications orderly. He could tell from the expressions on the faces around him. Even the normally placid Commander Gabrilov, who had been close enough to hear what Ahmed said, was showing excitement.

"Okay," Rusch said. "O-kay. I don't have to say it again."

Gabrilov gave a shamefaced grin and pushed himself over to the 'scope controls. "Oh-seven . . . six and a half," he said under his breath as he set them. "Four and a half kil . . . Yes, there's something there all right."

"Get it on the screens," Rusch said. "Come on now!" He felt his heart pounding faster as he glanced at the big screen mounted over the pilot board at the forward end of the bridge. A click. An ill-defined, misshapen object appeared in the center of the square frame. It could have been anything out of the asteroid belt.

There was a long silence. At last Gabrilov said, "Do you think it could *really* be a buster?"

"Well, why the hell don't you take steps to find out?" Rusch snapped.

Gabrilov colored. "Sorry, sir!" he mumbled. He barked at the communications orderly. "Tell Warrant Officer Fisher

to draw power for a laser beam! Ask Lieutenant Ahmed to stand by for spectroanalysis!"

"Aye-aye!" said the orderly fervently, his eyes bright.

While they were waiting. Rusch glanced at Gabrilov. He said as though there had been no interruption, "It could be a buster, of course. It's some while since the last one was found, but there have been forty-five of the things, and they turned up all over the System. One was found in a lunar equilateral, wasn't it? But even if this *is* a buster, you've got to remember one thing."

"What?"

"They may not all be worth picking up. Some of them may only be lumps of iron, for instance. It hasn't happened yet, but it's possible."

Gabrilov bit his lip and looked lugubrious.

The communications orderly said, "Sir! Screen room!"

Rusch seized the phone. Gabrilov came diving over to hover beside him.

"Get this, sir! Ahmed's voice said. "Spectroanalysis shows iron—cobalt—nickel—"

Gabrilov pulled a face, looking down at the floor.

"But also!" Ahmed said triumphantly. "Also silver, gold, uranium, thorium, platinum, osmium, iridium . . ."

He went on, but Rusch had lowered the phone.

"Number forty-six," he said quietly.

Whatever the reason for all that shouting and banging and laughing, Aylward wished they would stop it and let him concentrate. He was trying to cope with more figures than his portable calculator could handle, and running side factors in his head always gave him a headache.

The door of his cabin slammed back and Angus burst in, frantic with excitement. The chain of figures vanished into limbo and Aylward clapped his hands to his face.

"For heaven's sake, what are you playing at?" he snarled.

"Didn't you hear?" said Angus, braking himself on the far wall with his foot and bouncing back towards Aylward. "What are you doing?"

"Trying to resolve some survey data—if you'll kindly give me the chance to finish the job." Aylward spoke with heavy sarcasm; he was an old-young man of thirty-five with glasses and an expression which was usually mild but now was thunderous. "I never heard such a racket!"

"But we've picked up a buster!" Angus exclaimed.

Aylward sighed and pushed his papers under a clip to

hold them to the table before sliding his chair back in its guides. "Is that serious?" he said. "Does it take long?"

Angus hooked a leg under the tabletop and shook his head pityingly. "Are you trying to say you don't know what a buster is?" he demanded incredulously. "You can carry an ivory-tower pose too far, you know!"

"All right, tell me what it is," Aylward snapped.

Angus rolled his eyes, but shrugged and complied. "Nobody knows what they are—exactly. They're lumps of matter that apparently drop from nowhere. Radar doesn't show them till they're well within detector range, and they think this may have something to do with the fact that they're fuller of high-number radioactives than a pudding is of plums."

"Oh, yes!" Aylward said. "Of course I've heard of them! But there haven't been any for some time, have there? What are they like?"

"Turn your screen on, and you'll see one. Captain Rusch had the 'scope image piped in for everyone to look at."

Alyward did so. The screen lit with a knife-sharp picture of a roughly spherical object, scarred across by the sweep of the high-powered laser beam. It was approximately a hundred feet in diameter. Lights from the ship were playing on it now, and made it gleam against the black depths of space.

"I wonder how much we'll get," Angus said in an awed tone.

"Come again?"

"These things contain fabulous riches!" Angus gave him a supercilious glance. "So your ignorance doesn't show too much, listen and I'll give you the background.

"The first one was found by the *Aurora* about six years ago. They couldn't believe their eyes when they saw it drop out of nowhere—a hundred-foot ball of concentrated wealth. They got thousands of tons of platinum out of it, gold, silver, uranium, and so many diamonds they practically bankrupted the commercial manufacturers. All the rest—there've been forty-five to date—have been cast in the same mold. The precious metals have more or less flooded the market, but the demand for radioactives is still high, and everyone who's found a buster has become rich for life.

"After the *Aurora* case there was a gold rush to the asteroid belt—no, don't interrupt, let me finish! But you don't seem to find busters with the ordinary planetoids. They

showed up all over the System. And another odd thing—this is the first to be discovered in some years, although at one time they were being found at the rate of about two a month. Of course, this is probably a statistical accident; they're virtually undetectable until you're right on top of them."

Aylward said, "All right, all right! I remember now. They predicted chaos. But in the event we absorbed the impact pretty well."

"So well you don't seem to have noticed it at all," Angus commented dryly.

Aylward ignored the jab. "Just a second," he said. He was frowning, for no reason Angus could think if. "If forty-five were found, and they were coming at an average two per month, the rush lasted two years. You don't know the dates of the first and last reported findings, do you?"

"Huh?" Angus blinked. "Well, the *Aurora* got the first on twenty-seventh April, eight-six—uh—and the *Capella* got the forty-fifth some time in March of eighty-eight. Middle of March—I think the seventeenth. Why?"

Aylward said, "And it's ninety-two now!" He began frantically unstrapping himself from his chair.

"Hey! Where are you off to in such a hurry?"

Aylward looked grim. "Not being a seasoned space-traveler," he said, "I was a bit worried before making this trip about the number of ships that have been lost lately. I looked into it fairly closely to make sure I had a statistical chance of getting home."

"What's that got to do with—?"

"Since you have such a good memory for dates, you can tell me when the current run of losses started. They said thirty had gone missing in the past four years—more than in the preceeding two decades!"

Bewildered, Angus said, "Sure I can tell you. The *Dubhe* was lost on the Venus run some time between tenth March and first April of eighty-eight."

"And the next ship to go?"

"The *Lucifer*. She vanished—" He broke off and bit his lip."

"About two weeks later," Aylward said, kicking himself through the door. Angus hung where he was for a moment; then he gave a gasp and dived in the other's wake.

III

The door of the bridge slid back with a squeal of complaint.

Rusch turned. When he saw who the intruder was, he frowned. It was all very well to say that young Aylward was potentially the greatest living authority on theoretical astrophysics; it was all very well for him to want to make surveys distant from the sun—but on simple principle Rusch disapproved of non-service personnel shipping on anything other than a proper passenger liner.

However, the rosy glow attendant on the discovery of a buster had mellowed him to the point at which he did not even ask brusquely who had authorized Aylward to trespass on the bridge. He merely said, "Yes, Mr. Aylward? What do you want?"

"Angus tells me you've located what they call a buster." Aylward said. His face was pale, and his eyes were very wide behind his glasses.

"Yes, we have," Rusch agreed. A thought struck him, and he called to Gabrilov on the other side of the room. "I forgot to order 'splice the mainbrace', Mr. Gabrilov! I imagine the men are expecting it."

"Aye-aye, sir!"

"Captain!" Aylward said desperately. Rusch turned a frosty eye on him; he had jumped to the obvious conclusion.

"Don't worry, Mr. Aylward. There's enough valuable material in that thing out there to keep all of us in comfort for the rest of our natural lives. And spatial law provides that non-service personnel are entitled to two-thirds of a crewman's share. All we can do right now is stake our claim, of course, and with luck tow it into orbit at our destination. But we'll start the mining as soon as—"

"Captain, if I were you I'd be very chary even of staking a claim, let along mining that thing!" Aylward regretted that force of habit had made him draw his feet down to the floor, because the captain was floating a foot off it, and so looked a long way down at him.

There was a frigid silence. At last Rusch said, "Would you like to explain yourself, Mr. Aylward? If you can, that is."

"Well, it seems to me—" Aylward hesitated: how to make

this clear? Then he plunged on. "Isn't it a fact that no buster has been reported for four years, though there was a positive spate of them before that? And didn't the start of the current run of ships lost in space—thirty known vessels and who knows how many others belonging to prospectors and freebooters—didn't this coincide with the end of the stream of reported busters?"

"By God, that's right!" The exclamation came from Gabrilov. "I'm sorry, sir," he added to Rusch. "But the *Dubhe* was the first to go since they perfected atomics. And I have every reason to remember that she vanished about a fortnight after the forty-fifth buster—the *Capella*'s. I was due to be aboard, but I was held back by an ear infection."

"The odds against this are tremendous," Aylward said. He saw that Gabrilov's interruption had impressed Rusch, and was in haste to seize his momentary advantage. "Which is why I think it would be terribly dangerous to come too close to the buster. Uh—what exactly is involved in what you call 'staking a claim'?"

"Just a moment!" Rusch said. "Are you envisaging that the buster might be unstable and blow up?"

"Well . . ." Aylward looked at the floor. "There's an awful lot of reactive material in it, they tell me."

"Hmph! It can't be very sensitive, then. We spectroanalyzed it with a laser beam intense enough to boil some of its surface off. What do you think, Gabrilov?"

Gabrilov was silent for a few seconds. At length he said, "Well, sir—we don't lose anything by being careful. To stake our claim, we'd normally match velocities and coast in close, wouldn't we? We're still calculating whether we have enough reaction mass to take the thing in tow. But I don't think we have, so we'll have to send someone over and plant an identification beacon—but much of the surface will be hot. I see several reasons why we should stand well off and take time out to program a remote-controlled missile to act as a marker."

Rusch pondered. "Yes, it'd be cutting things fine to try and get something that massive into orbit at the end of this trip. I was working on the assumption that all we could do would be to mark her with a long-life beacon and come back under no load to fetch her . . . Very well, Mr. Aylward. I'll arrange to send out an unmanned lifeboat with the beacon in it. There's enough iron in the buster for

electromagnets to get a grip. And to satisfy your qualms, we'll keep our distance."

"Thank you, Captain," Aylward said. He was surprised to find, now that he'd made his point, that he was shaking all over and his forehead was slippery with sweat.

They tied the lifeboat controls directly in to the pilot board on the bridge, and Gabrilov took charge. On the screen was a split-image projection: one screen showed the view from the lifeboat itself, the other the picture from the side of the ship as the lifeboat curved outwards towards the buster.

Almost a quarter of an hour crept by on leaden feet as Gabrilov delicately maneuvered the tiny lifeboat closer and closer to the buster. Abruptly a tiny buzzer on the control board beeped and kept on beeping.

"A hundred miles," Gabrilov said, not looking away from the screen in which the buster had grown progressively from a mere spot of light to a sizeable globe. "The homer has picked it up. Shall I just let it go its own way now?"

"How far above the surface will the magnets take charge?"

"From about ten miles they ought to give a soft enough landing for the beacon to survive undamaged."

"Then try and match velocities with the lifeboat about ten miles off."

Gabrilov raised an eyebrow and looked worried, but he moved the main jet control slightly. The image of the lifeboat in the other half of the screen showed a spurt of reaction mass.

More time limped by.

At last Gabrilov gave a precisely timed touch to the braking jet control, and sat back. "Very nice," Rusch said under his breath. "Yes, she's going down."

Aylward wondered if his heartbeats were audible to those around him; he was almost deaf with the rush of blood in his ears, and he was breathing fast and urgently. On the screen, the buster grew to moon size, Earth size, and still larger; by now the lifeboat and the buster could no longer be seen separately from the ship without high magnification. The beeping grew to an intolerable unbroken buzz and stopped short.

"Well, she's down," Gabrilov said unnecessarily. "And it looks as though—"

He got no further. On both halves of the screen there

was suddenly an eruption of incredible, sun-like light, as though a miniature star had been born.

"Crew's getting restive, sir," Gabrilov said, putting back the phone. "That was the MO with the casualty statement. One man was watching through binoculars. He's going to need new eyes when we land, and a man in the nav section was looking down a 'scope, and he'll need one new retina. The radar tech who first spotted it has gone hysterical and needed sedation, and we have at least half a dozen cases of radiation sickness incipient."

Rusch grunted. He had been more affected by their narrow escape that he wanted to reveal. He said, "It seems to me some of us joined the service for no better reason than the chance of sharing in a buster! The thing would have blown us to glory if we'd gone much closer. Tell 'em they're lucky to be alive. Did the thing leave any debris, by the way?"

"Not a scrap," said Gabrilov gloomily. "Oh, there's probably some dust hell-bent for the stars, but nothing big enough to pick up."

"It can't have been a total-conversion reaction!" The idea seemed to hit Rusch like a physical blow.

"No—or even at this distance, we wouldn't have survived to talk about it." Gabrilov drew himself down to a chair and formed his body into a posture as though resting on the seat. After a moment, he said, "Lieutenant Ahmed was talking about space-mines. Weapons of war. At first I thought he was just suffering from the after-effects of seeing his dreams of riches go bang. But the more I reflect, the more I'm inclined to wonder."

Rather unwillingly, Rusch looked across the room at Aylward. "What do you think?" he demanded.

Aylward shook his head seriously. "I don't think it's war. I mean—well, we haven't suffered much material damage. It's cost us thirty or so ships, but we have three and a half thousand in regular service. The loss of experienced space personnel is probably more serious, but still it's a fleabite. And besides, why should . . . *someone* who can afford to disguise a mine with thousands of tons of metal, and induce a reaction as efficient as the one we saw, waste effort on sowing a few mines randomly in space? They could so easily make a job of it by launching a few into orbits intersecting Earth's. No, I don't think we have to invoke an

enemy. My guess is that the busters are inherently unstable, being composed of such heavy elements. Conceivably they don't even belong in our order of space-time. Alteration of the vicinity of a large and massive object, such as a spaceship—might upset their not very good equilibrium and blow them back into the continuum from which they came." He frowned deeply. "And yet this leaves so many questions unanswered. Why, for instance, were many of them safely brought into orbits around human-occupied worlds? I had it in the back of my mind that they might be contraterrene, but since some of them were—uh—hooked, this is out of the question. I think I'm going to give this matter some further investigation."

"Well, we can't do much here," Rusch said heavily. "We have sick men on board who need planetside medical care, but even if we hadn't I'd order immediate planetfall. This news about busters is too urgent to keep to ourselves. Gabrilov!"

"Sir?"

"Get the nav section to program us an orbit that will take us in radio range of a government station as soon as possible, and then home. Have the men strap down for a turning maneuver. And you'd better have the MO issue decelerine, too. We're in a hurry!"

IV

Martinu looked regretfully at his empty glass, and realized as he did so that the gentle voice of Professor Aylward had stopped. With an effort he brought himself back to the present, eyeing the other with curiosity. One would never have taken him for such a damned good story-teller.

"So that was how it all began," he said after a pause.

Aylward was tying knots now in his length of tubing. He nodded. "Mark you," he said, "it wasn't easy to convince the authorities. I say, I'm sorry to have to ask you, but would you do me a favor?"

"Of course."

"Well, I'd like another drink, and I don't feel up to fetching one."

"Oh, certainly!" Martinu pulled himself to his feet. His muscles complained a little, but he adjusted after a moment or two and walked off with their glasses to find a waiter again. He was feeling a little superior by the time he

got back. After all, Aylward enjoyed at least some gravity most of his life, whereas a spaceman like himself had to cope with the change from no gravity at all to one full gee every time he landed on Earth.

Handing Aylward his new drink, Martinu wondered whether it was genuine devotion to duty or some defect of personality which made the tubby man hide himself away on the far side of the moon. He suspected the latter, now he came to think about it. What a shame—to be so outstanding in one narrow field, and yet basically incompetent in the most important field of all, that of being an ordinary person.

With disconcerting insight Aylward said, "There's no need to be sorry for me, you know."

Martinu choked on a mouthful of his drink and began to make frantic denials. Aylward ignored him. Staring at the dancers inexhaustibly whirling around the floor, he went on, "I pity you as much as you pity me, and both of us ought to pity the people here. Like mice, when the cat's away."

Was he going to become maudlin, for heaven's sake? Martinu decided to change the subject as quickly as possible. He said, "You were saying something about convincing the authorities, professor."

"Was I?" Aylward blinked; the alcohol was taking effect on him. "Ah, so I was! Yes, I remember a blockheaded idiot named Machin—a bureaucrat if ever there was one—who tried to make out that we'd concocted a plot to filch all future busters away from their rightful owners. Like most people, he needed to have his nose rubbed in the truth before he'd accept it. But for him, we could have saved the *Sirius*."

"I remember the *Sirius!*" Martinu said. "I had friends on her. She found a buster within radio range of Luna Port—"

"And because of Machin and his like," Aylward interrupted, "it went right in to grab it, and was blown up with eight hundred people aboard. Too many people saw it happen with their own eyes, and went blind like the crewmen of the *Algol*, for that affair to be hushed up.

"So they fell over backwards to make amends. I was given facilities for taking proper equipment to the spot when the next buster appeared. By the time the fifth or sixth one showed up, I'd worked out the theoretical pattern of the Field. They try and tell me it was difficult to do, but don't

you believe it. The math is simple enough. What did give trouble was getting the generating equipment down to portable size. But we managed it in the end, made it a commercial proposition—and busters held no more terrors; we could stabilize them in our space-time long enough to cut them up and separate out the radioactives." His s's were getting the least bit slurred, and he was staring at his fingers as though unsure quite how many he could see.

"Angus tells me," he went on after a pause, "that it might have been a very bad thing. It was the direct cause of the vast inflation we underwent—when?—oh, thirteen or fourteen years ago, because the market for precious metals was saturated. It's the cause of prices like five bucks for a cup of coffee and two hundred for a taxi ride. I remember I used to dream of having a million dollars. Now where would it get you? I bet Angus is spending a million on this party!" He waved to include the whole of the gaiety around them. Distantly in the background a theremin was playing a solo in imitation of a trumpet. Martinu nodded pontifically.

"But of course it also cured us of the tendency to place arbitrary values on things," Aylward finished. "Now we prize only work invested as a backing for currency, and the uranium from the busters made cheap fission-power possible, so maybe the trade was a good one. Ah!"

A waiter in search of empty glasses entered the alcove, and Aylward signaled to him. "Get the captain another!" he instructed. "And one of the same for me."

Martinu hesitated, then shrugged. "Slivovitz," he told the waiter, who nodded and hurried away. A man and a girl, holding hands, looked in to see if the alcove was unoccupied, and on finding it wasn't moved away. The waiter returned with the fresh glasses.

"Foof!" Aylward said, having gulped at his. "That's rather good." He lowered the glass cautiously beside him, then leaned back, sleepily half-closing his eyes.

"Look at them," he said. "Three thousand million blind mice. Who'll bell the cat?"

Martinu, whose own wits were apparently slipping a little, said foggily, "I beg your pardon?"

"I said, 'Three thousand million blind mice. Who'll bell the cat?' " repeated Aylward with dignity. "Though there isn't a cat, that I know of. For 'Who'll bell the cat?' read 'The mouse ran up the clock'."

No, it was no good. Martinu didn't try to follow that one.

Aylward finished his drink with an appreciative belch, and said, "I suppose mice don't do so badly, really. What were we talking about?"

"Mice, apparently," Martinu said.

"I was talking about mice," Aylward corrected. "We were talking about busters. This can't last, you know."

"What can't last?"

"All this!" said Aylward largely. He gestured. "Not just this party—everything else too. All unconscious of their doom the little victims play. Tell me, do you think the human race is master of its fate, or do you believe, like some people, that we're property?"

Martinu was relieved to hear a fairly sensible remark for a change. He considered the question. "That's one of Fort's speculations, isn't it? I—well, I don't know."

"I'll tell you," Aylward promised. "Do you think you're of value to anyone but yourself?"

"Well, no."

"You're lucky. So am I. Just think of all the poor people who think they do matter. How disappointed they'll be when they find they don't!"

"When will that be?" Martinu said, feeling it was expected.

"Oh, definitely some time. Do you know what a buster is? I mean, what it's for?"

Martinu was finding this a little tedious. He wished he had taken Angus's advice. "Tell me," he requested resignedly.

"I warn you, you won't believe me. Angus doesn't, and he's a typical hard-headed individual. None of the other people I've told has believed me either. Anyway, I'll tell you. You said you didn't know if we were property or not. Well, we aren't property. Because we aren't worth owning. We're just one hell of a nuisance. Did you ever find yourself bothered with mice?"

Sheer politeness, nothing else, drove Martinu to bring to bear what concentration he had left. "When I was a kid," he said finally, "I recall my mother had a house full of them. But they never bothered me. I rather liked them—except for the stink."

"How did your mother get rid of them?"

"Well, I guess we tried trapping them first. That didn't work for long—the cunning so-and-so's soon learned to avoid the traps. So in the end we poisoned them."

Another couple appeared at the entrance of the alcove

with their arms round each other. They were too absorbed to notice that anyone else was present, and walked past the seat where Aylward and Martinu were towards the curtains hanging behind it. Glad of some distraction, Martinu glanced over his shoulder and saw that they had drawn one of the curtains back to reveal an open window; they were leaning on the sill and staring at the stars. He envied them.

"All right," Aylward said. "Now if you wanted to do something like that to men, what would you use for baiting your traps?"

"I'm sorry?" Martinu came back with a start. Aylward repeated the question.

"Well," Martinu said, humoring him, "I'd use something either useful or precious."

"Exactly. And you'd lay some groundbait first, to lure the unsuspecting victims to the traps when they were put down."

Suddenly Martinu got it. He wondered why it had taken him so long, he said disgustedly. But after a moment he saw the amusing side of it—and after all, Angus had warned him!

He chuckled. "So they're mousetraps, and we're the mice!" he said. "What an idea! But aren't you overlooking one thing in your analogy? How about the poison?"

"I was coming to that," said Aylward with equanimity. "And so, I judge, are the 'people' who planned the busters. When the mice started dodging the traps, did your mother latch on at once?"

"No, we kept right on setting them for a while. It was only when they became a real pest we turned to poison."

"Pre-cisely!" Aylward looked pleased. "I imagine that they —whoever they are—will decide that their traps aren't working any more. Then someone will find a super-large, stable buster and bring it to Earth, and—that will be that."

A cold chill moved down Martinu's spine. Trying to ascribe it to the open window behind him, he said slowly, "Haven't you heard?"

"Heard what?"

"Mohammed Abdul in the *Vega* just brought in the first stable buster since the *Capella's!* Parked it in orbit today! And—and it's an outsize one, a giant!"

Aylward's face, all of a sudden, went pasty-pale. He looked at Martinu and tried to speak, but couldn't.

Behind them, the girl looking out the window said in a tone of puzzlement, "Honey, what's the time?"

"Three o'clock. Why?" said her companion.

"I thought it wasn't dawn yet. And that isn't even the east over there. But look how red the sky is getting!"

LONG DAY IN COURT

JONATHAN BRAND

The wakey-wakey played *Earth Is Where My Heart Is* and Mark Hassall sat up with a pounding heart. Every simulated morning for the last simulated three weeks he had woken to the gentle sound of *Earth Is Where My Heart Is.* But whatever you set the wakey-wakey to play, he reflected sadly, after a time it gave you a cold sweat to hear it. For any signal which brings you to life in the morning after the mental death of sleep becomes associated with that shock to the system. The fear of death is nothing, compared to the fear of life.

He flicked on the sound transmission of his telephone and left the visual pickup off. "Yup," he groaned into it.

The telephone built up the unblushing image of Marylou, Transit Station J's nubile communications expert.

"Marco," she cooed. "You're sitting up in bed."

"You're damn right I am," he said. "But not any more!" And he curled himself modestly up in his electric blanket. "Anyway how in hell would you know? I've got the visual off."

"I've eyes in the back of my head."

"You just might have at that," he answered. For a communications expert on a Transit Station is considerably more than a mere switchboard girl.

"Why don't you get dressed?" said Marylou.

"I'll really try and remember to do that before I go on

duty," said Mark, rolling towards the shower. "But I don't promise I'll get the time."

"You just find the time," she said. When she heard the shower start she leaned forward across the control panel and turned the knob that accentuated the yellow register. She was a connoisseur about the performance of her telephone and loved it best of all her instruments.

"I saw that," said Mark, just to keep her on her toes.

"I was only turning up the yellow," said Marylou. "It was a little low. That's all."

"You're a liar. You wanted to show off your pretty yellow hair."

Marylou pouted a little. "Just because you're being so tiresome this morning I'll tell you now why I called you."

"Oh, God, no! You couldn't do that," he said from under the shower. "Not before breakfast."

"You've got no time for breakfast. It's sim-0545 now. At sim-0615 you've got a case."

"Oh, boy. Oh, boy," he moaned. "In the good old days bringers of bad news got killed. I'm surprised you dare. Why in space does this trial have to happen in the middle of the sim-night?"

"Colonel's orders, Marco. He says a summary trial will impress the natives."

The colonel of Transit Station J was Colonel Prince Banerji of Haipur, and his ideas of discipline were inherited from an ancestor who once personally beheaded 409 English people, including 14 women and 27 children, back in his home state of Haipur on his home planet Earth, because he thought the English residents were becoming insubordinate. When the British soldiers came to take vengeance he told them that he had been no more severe with their late compatriots than he would be with his own people, and this was doubtless true.

His descendant carried on the tradition by such endearing maneuvers as holding the monthly Emergency Evacuation Drill at sim-1100, the morning hour that is consecrated throughout the civilized universe to a pull at the Venusian drug-weed and a cup of coffee. "Constant and Effortful Vigilance" was his motto for his Transit Station. It was rumored that he never slept. Nobody had ever called him on the telephone without finding him immaculately uniformed and sitting at his desk.

It was clear to Mark that he had been picked for the Station's most unpleasant job this sim-morning, probably for some good reason like Banerji had seen him smile or heard him whistle the sim-day before. The Station's most unpleasant job, of course, was sitting in on trials. Every Earthman on the Station, from the colonel to Roderick MacMack, the junior engineer, and Mark Hassall, the junior transport controller, held a commissioned rank in the Space Police, and under the terms of the Re-Foundation of Government in 2085, an officer in the Space Police had to be ready and trained to act the role of congressman, detective, judge, lawyer or jailer on demand.

This happy sim-morning Mark Hassall had been chosen for judge. Standing Orders said that every dispute on the Station must be attended by an Earth officer. This Order meant, for instance, that Mark had once been forced to sit for 14 sim-hours in total silence alone in the courtroom with two tankfuls of Aldeberan-4 creatures while they thrashed out what they alleged was a theological dispute. The Alds are the interpreters of the universe, and they had said that the subject matter of their dispute was ineffable. "And if ineffable," they added, "then untranslatable." Mark hadn't even dared peruse a novel, for though no one but Alds could tell when Alds were having a break, the colonel, if he cared to look in, would know if Mark was.

"This isn't my lucky sim-day," said Mark to Marylou while he brushed his teeth.

"It could be much worse, friend," said the delectable communicator. "It's only an intra-species affair."

In those days the difference between intra-species law and inter-species law really meant something. Intra-species litigation was purgatorial, but inter-species litigation was hellish. In those days all cases were technically settled by Earth law, and in every judgment the judge had to produce a complicated formula reconciling his Earth-derived settlement with the law and practice of the relevant alien race. If two alien races were involved in a dispute, then the unhappy magistrate had to wrestle with a three-way compromise.

With some sense of relief Mark turned on the visuals and gave Marylou a sight of his shining morning face.

"What's the rap?" he asked, airing a bit of jargon he had picked up watching old television films in the Station library. (The Station had half a million books, many of them genuine

antiques like the "Perry Mason" series he was quoting from.)

"Wait for it," said Marylou roguishly, and brightened the contrast control to show off her roguish dimples. "Wife beating."

"Oh, for God's sake! Only a tenth of them have arms to beat with! And only a tenth of *them* have wives."

"Well, one in a hundred's a wife-beater."

"I've heard it all. What could be next?"

"It Could Be You, Mark darling," said Marylou.

"Kindly remember your place," he said with mock roughness, and leaned forward as unobtrusively as he could in order to turn down the red register. "The Court at sim-0615 then."

"Good luck, Marco," said the Station's sole communications expert and sole Earth woman, and switched off.

"Thank you, honeychile," said Mark meditatively into the gray screen. "Thank you."

When he got to the courtroom and took his place on the Tribunal the trial was already set up. Beside him on the table was his water carafe, and about a quart of the Station's complement of Aldeberan-4 people in their aquarium-like traveling quarters, with earphone pickups already connected. Mark put on the earphones.

"Good morning, sir," said an electronically produced voice. "This is the Court Interpreter."

"Good morning, Alds," he said.

"Miss Marylou said to tell you that your container of body-fluid includes a toxic additive."

Mark looked inside the vacuum flask which held water for the Judge and found it full of steaming black coffee.

"Thank you, Alds. Convey my thanks to Miss Marylou. Sorry to see so many of you here this morning."

The Alds made no answer. About two-thirds of the Station's complement of Alds had turned up that sim-morning. They always sent to court just as many individuals as could cope with the complexity of the case as they saw it. They seldom misjudged. To see so many of them at once was a bad omen.

He looked around the Court. Below him, in what they called the dock, were two bedraggled Fomalhaut-9s, one male, one female. He had no idea what the female Fomalhaut was doing there. The only wheeled race known at

the time, they were circling round each other in the gyration labeled by the Ethological Handbook for their race "Repose without joy," and which MacMack had rechristened "constant and effortful vigilance" after the tyrannous Banerji's watchword. Beyond them, in the position technically known as "Counsel for the Defense," was the Station's senior lieutenant, Gil Mulrooney, a thickset, grizzled veteran of the Last Trans-Stellar War. Beside him sat his opposite number, counsel for the prosecution, in the person of the Station's dapper Administrative Adjutant, Jules Monterey.

The titles they bore for the occasion dated from a time when the government was divided into many separate departments—like judiciary, administration, police, army or the Bar. But by the end of the 21st century, government was government and no longer a species of public debate or carnival tug-of-war, and any government officer could take any role. The two counsels' jobs were roughly to list the points on two opposing sides, and Mark's was to pronounce judgment.

But all government is of course implicit in each individual. Next time they would probably trade jobs.

Beyond the court itself ranged the tiered compartments reserved for spectators. Each compartment was adapted to the physique of one of the 25 trans-stellar races living on the Station, with the front row reserved for Earthmen and Martians, whose solar system the Station happened to be in. Most of the compartments had someone inside. It looked to Mark as if an average number of every race had come to see the fun. You had to say "average" because the actual number of individuals of any race which constituted a quorum varied so much. For instance, there was a quart of Alds on his desk: that would be around 150,000,000 individuals. There were around 400 Loon-birds sparsely roosting in their three-dimensional knitting safely (of course) behind glass. There were three Earthmen in the court, all in official capacities. There was one Leprechaun with his eye extruded. And, luckily, there was no Phoenix-cloud within a billion miles of the Station. There is only one Phoenix-cloud known, but that one can be dangerous enough to a lonely Transit Station.

It is the job of a Station to offer shelter and to offer sustenance—but not if the first bite is the Station itself.

"Thanks be for small mercies, anyway," thought Mark. Aloud he said, "We'll begin."

On the recording strip sunk into the desk at the right of his chair he saw the words "The Court sits" appear. This was also the work of the Alds, who activated the official court record. The difference between languages and the difference between two styles in one language were both the same difference to them. So far as they knew it was all translation. So whatever one said in court in English was minced up by their infallible brain-curcuitry and emerged on the record in the sort of legal jargon with which lawyers have baffled laymen since the invention of justice.

All around the court bodies relaxed in the way appropriate to their physique.

"What gives in this case?" said Mark.

"Set forth the Plaint," said the record.

Gil Mulrooney got up slowly. "That's not hard," he said. "I was on Station watch this sim-morning. At sim-0149 I got a call from the automatic monitor on 9th level, at the intersection of the Fomalhaut avenue and 12th Freeway, a call of 'believed disturbance'. I immediately went down by chute in person."

"Leaving the watch monitor active in the guardroom," Mark put in.

"Of course," said Gil. "Activating the watch monitor." This would look right in the record. It wasn't that Mark doubted that Gil had taken this simple precaution, just that he might have forgotten to say so. It was Mark's job to keep the record straight and, more than that, to keep the colonel sweet.

"Go on," said Mark.

"The corridor monitor was quite correct. There was considerable disturbance coming from cell 34 on the Fomalhaut avenue, the cell assigned to Mr. and Mrs. Daap-daap. I could hear great clouts against the partition wall and a squealing that could be heard four blocks away. I thought at least a band of Loon-birds had got loose in there."

Mark shuddered at the picture. "Sounds bad. What did you do then?"

"I activated the calling circuits and I was let in."

"Immediately? You made me think all Hell was let loose in there."

"Well, it calmed down the moment I keyed the calling circuit. Almost as if they'd been waiting for me."

"That doesn't sound very likely," said Mark, "if the noise was as bad as you say."

"The noise was very bad," said Mulrooney, grimacing. "One wouldn't be mistaken about a noise like that."

"Well, it was a sleep-period," said Monterey from the other counsel's box.

"I don't see the relevance," said Mulrooney slowly. "The Fomalhauts don't sleep. You know that."

"I do," said Monterey, conscientiously needling his opposite number as a good Counsel should. "But Earthmen do sleep. I call the judge's attention to that."

"You're claiming I dreamt it, then," shouted Mulrooney furiously.

"You were probably as bleary as a gigolo on Sunday morning," answered Monterey.

The record paused for a few seconds, then produced this impartial translation. "I submit that Lieutenant Mulrooney was suffering from disorientation of the reality-sense brought on by cultural shock, the cultural shock being due in this case to his foregoing a fundamental Earth custom, namely that of undergoing a period of unconsciousness between sim-0001 and sim-0801."

"Nonsense," said Mark hurriedly. "Gil's a policeman, for God's sake."

The Alds printed: "Objection formally noted. The judgment of this court in this is that, firstly, the Earth race is exceptionally immune to cultural shock, and, secondly, vigilance during the sleep-period is an old and honored custom of the Earth police subculture and would thus be entirely natural to Lieutenant Mulrooney." It looked damn good.

"This is all off the point," said Mark. "Whatever interpretation we may put upon it, the court accepts that the Fomalhauts in question stopped quarreling and let you in. Then what?"

"On gaining entrance I found the defendant, Fomalhaut-male Daap-daap, holding in one tentacle a carved Fomalhaut food-pipe some 90 cms long (Exhibit A), and the co-defendant Fomalhaut-female Mrs. Daap-daap—"

"Oh, for God's sake!" said Mark, interrupting. "(Strike that from the Record.) I thought this was a wife-beating case. Tell me whose wife was beaten, and if Mrs. Daap-daap was the victim, why does she appear as co-defendant? Or isn't that Fomalhaut-female down there Mrs. Daap-daap?"

"Well, Mrs. Daap-daap did get beaten," said Gil. "And she appears as co-defendant at her own request. And that is

her in the dock. To tell the truth, this case is a daddy-o."

"Certain features of this case render it unusually complex," typed the Record.

"Yes, but is anybody going to explain it to me?" said Mark.

"Honestly, I'd rather you thrash it out with the defendants themselves. This court's already too full of mouthpieces." And Mulrooney favored the tank of Alds with a mournful Bronx cheer, which they forebore, as near as Mark could see, to translate. "I talked with both Daap-daaps, of course, and the facts are clear enough, but I haven't the faintest idea what their plea is."

"I'll confirm that, Judge," said Monterey. "Will you take over?"

"Right," said Mark. "Don't go to sleep, though."

Mulrooney glared at him, but the tactful Alds cut out the sleep metaphor and confined their Record to, "Maintain, however, general surveillance, Counsels." Mark signed to the two Fomalhauts to hook themselves to the direct Interpreter's Link.

He addressed Mrs. Daap-daap. "I see that your front wheel is gravely contused, to the extent that you are resting it on a surgical trolley. Is that the result of a fight this sim-morning?"

"Yes, sir," came the reply.

"Witness?" said Mark.

"Deposition of doctor," said the Alds, acting as his remembrancer. "Exhibit B."

They were right as usual. Mark found the document in one of the slits under the Record. Its signer was an Asclepiad, a mid-gravity race with a speciality in biophysics, who had been the Galaxy's doctors long before Man came on the scene. It certified that when he attended Mrs. Daap-daap at 0310 that morning she had been suffered from widespread surface contusions, and from a fractured bearing-joint in her front ankle—all caused within 2 sim-hours of the treatment time.

Mark addressed Mr. Daap-daap. "Did you do this to your wife?" he asked.

"I did," he answered. He evidently did not want to hide it, for the Alds on the Record had added "(Relaxedly; without hesitation)."

"Well, that's frank. And why did you hit her?"

"Because I did wrong."

"And why should you hit her when you do wrong?"

"Because it is the duty of wives to suffer punishment for what their husbands do wrong."

"I see. But why is she too in the dock?"

"Because it is the duty of wives to suffer punishment for what their husbands do wrong."

To the Alds, Mark said, "Come on. You're a question behind. I'm asking now why Mrs. Daap-daap is in the dock."

"Unquote," said the Alds to show they were talking in their, or its, proper person. "The defendant's answer was as it appears in the Record."

"But that can't be the answer to both questions!" Mark protested.

"Unquote is that a statement or a question? To the defendants or to the interpreter?"

"Well, don't let's waste breath," said Mark, knowing that the Alds enjoyed a good idiom. "If you know the answer, you tell."

"Unquote I know why the defendant's wife is in the dock. You will remember that the reason is in the Fomalhaut Ethology Handbook paragraph 975." (The Alds, being the only purely intellectual life form in the universe, could never conceive the difference between a memory and a reference book. They meant Mark could look the information up in the Fomalhaut Ethology. The advantage of their ignorance was that the colonel would never know that Mark hadn't remembered the information for himself, because the paragraph number would merely appear in the Alds' record as a reference.)

Mark flipped over the pages of the Ethology. Para 975 was in Part II ("Social Behavior"), Chapter 17 ("Justice"), item 9a ("Punishment"). It said:

> "Punishment for wrong-doing is customarily inflicted on the females—wife, or, if unavailable, mother, or, if unavailable, female guardian. The accepted forms of punishment are physical chastisement or deprival of nutriment (see paras 304-356)—both these can be inflicted by Earth officials—and deprival of Joy (see para 2)—which cannot."

"Joy" was obviously pretty basic, judging by its paragraph number, but this wasn't the time for looking it up.

"I've got that sewn up, Alds," said Mark, laying the

idioms on thick to gain time. "I'm right in there with you regarding why Daap-daap's little girl is in the dock. Now you give with the info why he was hitting her this sim-morning."

"Roger," said the Alds, never at a loss how to beat interlocutors at their own game. "Can do, skipper. He was beating her then 'cos he just dun wrong. You will remember the same para."

"I see that," said Mark. "That explains why he was beating *her,* and the note on methods of punishment explains why he was *beating* her, but I still don't know why he was beating her."

There was a pause, and then the Alds produced another line on the Record. It said: "Defendant: Because I had done wrong according to Earth code. My wife must suffer punishment for that."

"I see," said Mark. Daap-daap was of course technically quite right. Transit Station J had its legal existence under an archaic type of agreement known as a "lease." This meant basically that under a reciprocal benefit agreement drawn up according to the law of Jupiter (in whose orbit the Station hung) the Earth Government controlled the area covered by the Station's orbit. The agreement specifically added that unless 17 sim-months (a Jupiter time-span) notice were given to the contrary, Earth law should be observed by all organic matter aboard.

So much was true enough. But there were some Earth laws which some organic matter simply had to break, particularly (he glanced wryly at the 400 or so Loon-birds—by God, there were now about a thousand of them—swarming in the Spectators' area) the organic matter aboard his Station. And in their setup an individual could make trouble quicker by citing the letter of the law than any other way short of opening both doors of the airlock simultaneously. With something like anxiety in the corner of his mind, he said, "And what Earth law did you break?"

"A law concerning Grievous Bodily Harm and Assault. I was beating my wife."

"You acted quite rightly. That sort of thing could land you up in the courts," said Mark judiciously.

"It has landed me up in court," said Daap-daap—"(sternly)," according to the Record. "And my wife has already paid the penalty."

For a couple of heartbeats Mark spun dizzily in the no-

space of the Fomalhauts' moral metaphysics. Then he was back in command. "This is the situation, then," he said ("sternly"). No organic matter, wheeled or otherwise, in the Station would fool him. "You admit to beating your wife, and recognize that this is illegal under Earth law. Your defense against the charge of Assault is Justification within Racial Mores, and within your code of mores the justification is that your act of Assault was a legitimate punishment for a wrong which you had committed, or, at least, for an act which was illegal according to the laws of your domicile place; that wrong being that same act of Assault. The situation so far is simple." (He would show them who was master.) "However, your explanation is unsatisfactory in this particular, that under Earth law punishment may not be inflicted before the crime is committed. Therefore the same act cannot be both crime and punishment."

"We deny that punishment was inflicted before the crime was committed. Nor was it inflicted afterwards. It was simultaneous."

"Oh. I see."

"Is our reasoning satisfactory? Did we do right in doing what we did? Will you acquit us?"

"The court will adjourn for sim-60-minutes to consider judgment."

The human beings in the Court stood up. The Fomalhauts formed themselves into the Obeisance Pattern and the Loonbirds—there were now thousands of them in their sealed cubicle—rose in a humming cloud. Mark stepped swiftly round the back of his Tribunal and closed behind him the door of the small robing-room. He found his hands shaking as he sat at the bare desk in the small robing-room, and he suddenly realized that the trial had started a whole row of alarm bells shrieking in his mind.

Analyzing what those alarm bells were, he came first and inevitably to the thought of the colonel. Everyone in the Station knew from experience what the colonel's repayment for a clumsy judgment could be—something nasty, like a tour of the exit vents of the air system, or patrol in the high-grav sector. But the colonel, though savage, was fair. Mark was pretty sure he had done as well so far as could be expected. Anyway, there wasn't a moment of the sim-day when he wasn't scared of Banerji.

The next thought he came to was "put-up job." The story of how they had stopped fighting the moment Mulrooney

called them was suspicious enough. And then there was no denying that they had him pretty well tied up. He could acquit them by accepting a plea of justification. But if Daap-daap was to be excused for hitting his wife, then he had done no wrong—and justification no longer applied. For how could he justificably be hitting his wife if he had nothing for which to punish her? You get in the same mess, only the other way round, Mark thought, if you find them guilty. He was familiar with such paradoxes on paper, but he was very unhappy indeed to meet one in the flesh.

His last thought, the worst of all, was, "This isn't just a Fomalhaut family quarrel. The whole Station's in on this."

The spectators' benches had been filling up ever since the start of the trial. Reviewing in his mind's eye the patchwork of color which had been his view from the Tribunal, he came to the conclusion that every race in the mid-grav sector had sent at least one representative. For that matter, all the Loon-birds in the Station were in there—the Loon-birds, the emotional carrion-eaters of the universe who congregated where there was trouble, the Loon-birds whom the Earth government employed as military personnel only. It was a bad omen when Loon-birds gathered. But one corner of his mental view-screen was blank. Which race might have been there but wasn't?

Of course. He knew which: the Murrays.

A few of them often came to court, particularly to hear a family quarrel. None had come today. If he could locate the blind spot in the Murrays' psychology which had kept them away today, he would have an insight into the real nature of today's case, and into what it meant to the inhabitants of the Station. For they had mostly known each other long before they had known Man, and they hadn't gotten the habit of confiding in Man.

He called up the Alds (who have no hates or loves, no prejudices or dislikes—just intellect). "What's with the Murrays?"

"You will remember the Murray Ethology para 4. They are the only known life-form parasitic on an object smaller than themselves."

"No. Try again."

"You will remember page xiv of the Introduction. They were discovered by Arthur Murray, later one of the victims of the sensational Heat-death Murders."

"No, *no*. Something to do with this case."

"How will you not remember paras 112-117? Surely those pages of your memory are not missing? They deal with the control of Murray behavior. Murrays cannot be taught to do anything except those actions specified in the Ethology, nor can they be prevented in any way from doing those actions if the appropriate signal has been given. Thus their behavior fails completely to be plastic, and thus they have not the conception of wrong, guilt, punishment or law."

All trials deal implicitly with wrongs, guilt, punishment and law, and the fact that the Murrays had stayed away showed that these were not just implicit in this case but explicit. No point of conduct was on trial; the system itself was on trial. This was a testcase to decide if Earth law should continue to hold on the Station. It was as if one were to feed a certain problem into a computer, not to get an answer but to test the computer. Only this problem, he was pretty sure, included a proposition which damaged the computer itself.

In the ordinary course of things, if a trial starts going sour you consult the law further until gradually the tangle comes clear. But in this case the very statement of the charge and the defense tampered with the structure of the law itself. Any further recourse to the same machine could only send it into a positive feedback, which at each cycle would take it further into absurdity.

There was, of course, Mark reflected, one further technique he could use if native wit could not sort out the Fomalhauts' disingenuous pleas. He could go above the law, to the mechanism designed for dealing with treason, to that body of brutal fact known as "martial law." But was he a Banerji, who would force a decision by merciless insistence instead of trying reasonable discussion? All the same he called the Alds, and together they refreshed his memory on the use of extra-legal coercion in settling disputes. And he began to run over in his mind, not the Perry Mason series but the equally old and famous Mickey Spillane adventures.

When the hour was up Mark took his place with as much calmness as he could.

"Trial resumes," he said. The audience settled back into their seats, perches, hovering-heights or floating-depths. "Have the principals anything further to say before judgment be delivered?"

"We wish the charge set aside," said the Fomalhauts.

"We have been mistaken on a point of law and a point of ethics."

Mark heaved a secret sigh. "We are glad that you should agree," he answered in a satisfactorily judicious tone. "What is the cause of your change of mind?"

"We have a custom, one custom only, that corresponds to your 'law'. It is this: 'To each and from each according as he is'. This is the whole of our law. For instance, it is right for a Fomalhaut being to obey Fomalhaut custom; for an Earth being to obey Earth custom. Thus for us there exist many versions of 'right'. There is Earth 'right', there is Fomalhaut 'right', there is Aldeberan 'right' and so on." Mark nodded happily. "Now, it is Fomalhaut-right for a Fomalhaut to obey Fomalhaut custom. It is Fomalhaut-right for an Earth man to obey Earth custom. But here we are troubled. For it is no part of Fomalhaut-right to determine the right of Earth according to Fomalhaut thinking. Thus in no way may we who are Fomalhauts either approve or disapprove the workings of an Earth court. All talk of justice here is meaningless. We will withdraw now."

Then the truth was on the table. Not only was the problem one to break the machine, but it said right there in the packet, "This problem breaks the machine."

He felt a prickle of apprehension run down his spine, for he observed the Fomalhauts in the dock and in the spectators' benches melting and weaving into the hollow square of Active Hostility.

"Wait a minute before you go," he said, smiling. Heck, he thought, this is insane. Surely if he could only think on his feet long enough he could solve this whole absurd problem. If this sordid family bickering was the revolt flag of half a universe, then this was a universe populated solely by dumb blonde mothers-in-law and vicars in the wood. He started talking. "Can we be sure there is a case to answer here? I mean, beating one's wife is one of the few honest and innocent pleasures in this over-civilized universe, and I imagine beating one's husband is too. And if this pastime may not be innocently indulged in, what do we all go through marriage for?"

Surprisingly, the Alds said in his ear, "Is that a joke?"

"I suppose it is."

"A moment, please. Jokes take a little longer." Mark paused. He had taught the Station Alds to have a sense of humor because he liked to have someone around to con-

struct new stories for him to tell—bizarre as the Alds' jokes usually were. And he had been most gratified to discover from them—probably the first Earth man to do so—that most of the trans-stellars had an analogue of sense of humor too. So presumably the Alds meant to amuse the whole Station with his feeble quip. They might well have a tough time, for the races which composed the audience had no fixed sexual organization which would make such a joke comprehensible. There were examples in front of him of gyniphagy (wife-eating) and of metazygy-with-stomach-sharing (sexual union of Siamese twins) and of endosomatogamy (where an individual chooses his mate not merely from within his own tribe but from among the cells of his own body) and many others.

There was a silence. Then apparently the Alds said something to the Asclepiad group, and they answered. Then the Alds spoke simultanously to every group in the room.

With a lift of the heart Mark realized that his job was done. Like the wind over a plain of grass a change ran over the room. The Loon-birds empurpled, whistled with disappointment and zipped out through their ventilator. The Wood-weevils swallowed each other up until they had reassembled their single persona. The Leprechaun opened its eye, drew its ear down into it, closed the eye on the ear and shut both in its mouth. All round the room it was the same. Everyone reckoned the case was happily resolved. Even the original culprits, or plaintiffs (whichever they were), the Fomalhauts, who before had sulked over the wrong they had suffered or been detected in inflicting (whichever it was), relaxed their hollow square into the interlocking circle of Quiet Pleasure.

A soft answer turneth indeed away wrath, thought Mark. Aloud he said:

"Okay, that's it."

The Record printed: "Court adjourns sine die."

Mark sat watching the assembled creatures leave in their own way. When they were gone he said confidentially to the Alds, "How did you do it?"

"It was nothing," answered the Alds. "I made to each group the same basic suggestion, that, if performed with a life-partner (and I use the word in a punning sense, indicating thereby both cohabitors and commensals), actions which normally produce aversive stimuli actually produce reinforcing ones. And, with the permission of the Asclepiads,

I cited certain contusions and abrasions for which they had to treat Miss Marylou."

Mark was appalled. After a moment he asked, "And that wouldn't be a joke if something about someone and Miss Marylou wasn't supposed to be a secret?"

"No, sir."

"You know, you'll end on the gallows."

"Yes, sir."

"A joke's hardly a joke if it's a joke on you, is it?"

"We wouldn't care to answer that, sir."

"Good morning to you then. Thank you for your help."

Back in his quarters, Mark changed his shirt and reflected grimly that the whole trial, including the Alds' version of a joke, would be on the Record, and the Record would very likely be at this moment in the colonel's hands. The now menacing tones of *Earth Is Where My Heart Is* interrupted his gloomy musings.

Marylou appeared on the telephone. "Get your tie straight!" she shouted without preamble. "You're to see the colonel."

"Oh, boy. Heap big trouble. This paleface is up the totem for sure this time."

"This is no time for joking," she shouted agonizedly. "This is real trouble. He wants to see you *in person!*"

She knew what she was talking about. The last time the colonel had met anyone officially in person was at the trial of an Earth man for murder—at his execution.

"Man, I'm gone!" shouted Mark, and ran down the corridor towards the colonel's office, buttoning his cuffs as he went. He knocked once and heard the colonel's "Come in" before he dropped his hand.

Inside the colonel sat at his desk, hard, strong, young-looking and ruthlessly efficient as he had often appeared on the telephone. His smooth coppery face was set as usual in an unrelenting expression of contemptuous dislike.

"Sit down, Mark. I won't hurt you," he said surprisingly.

Mark did so.

"Look, Mark, this is my last command. I shall never make the little hop back to Earth and to my own country, let alone see other countries on other stars as you will. Why? Because I'm old. Not in appearance, perhaps. But inside each cell totes up its own time-reckoning and there's nothing we can do to put the clock back. If you want to know the

truth, this body's 103 years old. But I'm skillful at my job, and my job is to command you. And part of my skill is in knowing how to look when I command. You rarely see me. You know that. But do you know that when I telephone you, the words are mine but the speaker is an electronic face-voice simulacrum cooked up by Marylou? And when I have to appear in person I spend half a day down in the Asclepiads' stinking surgery, where the walls were lined with the pickled limbs of half the creatures of the galaxy and where the death-tubes are loaded with the day's quota? For in the morning I wake an old man, and no one may see me until my physician has remade me as the beautiful and terrible Indian prince. I'll show you something."

Banerji leant forward and slowly unbuttoned his creaseless tunic. Inside Mark saw with a sudden sick horror that it was thickly and artfully padded. Underneath, his chest was the chest of an old man. Sharp edges of bone seemed ready to pierce the dry, wrinkled skin, and below his immaculate neckline the surface of his body was an ugly patchwork of brown and purple and fungoid white.

"Now you know," said Banerji in his uncannily youthful voice. "And now I think you will understand that this Station is maintained and kept in order not by any mass of rules in a rulebook but by personal command. And that command is exercised by me. By my commanding words and by my commanding body. I am telling you this so that you will understand what you did today. You exercised command as I would do. Not perhaps in the way I would have done, but choosing your own method, imposing order on disorder, bringing submission out of revolt."

"Why do you tell me this, sir?" asked Mark.

"Because soon I shall go to my fathers, and you will go to take up a command of your own. And for that reason you must learn everything I have to teach."

Mark was honestly proud that the colonel should thus treat him as an equal, but secretly he protested that he would never have to act the slave-driver in front of his own crew.

"You are smiling now," said Banerji, "because you know that you will never have to use the proud airs and sordid subterfuges that I use. But I leave you with one thought. Your genius for command comes out in an admirably frank comradeliness, in a charming and self-deprecating gift of humor. It is the gift of your American heritage. But if as

time goes on and your responsibility for the Government of your fellow beings becomes ever wider and greater, sometimes, in the privacy of your quarters, you need to practice and rehearse your charmingly spontaneous good humor —then do not be ashamed."

They sat for many moments in silence, and then the Indian said, "Back to your duties, Lieutenant. Constant and effortful vigilance."

"Constant and effortful vigilance, sir," Mark snapped and was gone.

Back in his office he switched to the Alds.

"Alds," he said in a phoney Australian accent. "You tell black-fellow Fomalhaut that white man savvy good-good make black fellow and black-fellow-woman chum-chum."

After a pause the adaptable Alds whined back, "Fair dinkum, cobber."

"Cheerioh, old matey," said Mark, and switched to Marylou's channel. "Hiya handsome," he breathed intimately. "How about I take you over to the Mess and we stop all this Deprival of Joy?"

Her face lit up. "Sure thing, Marco-boy. As soon as you like."

"Five sim-minutes, then," he said and grinned boyishly at her. As she faded he buried his face in his hands. When you take up government, he thought, you take up a load as massy as the galaxy itself. He felt a thousand years old.

But if that crazy old wreck Banerji can take it, so can Mark Hassall!

He got up, loosened his tie, tousled his hair and set out whistling for the Mess.

TRICK OR TREATY

KEITH LAUMER

A large green-yolked egg splattered across the flexglas panel as it slammed behind Retief. Across the long, narrow lobby, under a glare-sign reading HOSTELRY RITZ-KRUDLU, the Gaspierre room clerk looked up, then came quickly around the counter, long-bodied, short-legged, an expression as of one detecting a bad odor on his flattened, leathery-looking face. He spread six of the eight arms attached to his narrow shoulders like a set of measuring spoons, twitching the other two in a cramped shrug.

"The hotel, he is fill!" he wheezed. "To some other house you convey your custom, yes?"

"Stand fast," Retief said to the four Terrans who had preceded him through the door. "Hello, Strupp," he nodded to the agitated clerk. "These are friends of mine. See if you can't find them a room."

"As I comment but now, the rooms, he is occupy!" Strupp pointed to the door. "Kindly facilities provide by management to place selves back outside use!"

A narrow panel behind the registration desk popped open; a second Gaspierre slid through, took in the situation, emitted a sharp hiss. Strupp whirled, his arms semaphoring an unreadable message.

"Never mind that, Strupp," the newcomer snapped in ac-

centless Terran. He took out a strip of patterned cloth, mopped under the breathing orifices set in the sides of his neck, looked at the group of Terrans, and then back at Retief. "Ah, something I can do for you, Mr. Retief?"

"Evening, Hrooze," Retief said. "Permit me to introduce Mr. Julius Mulvihill, Miss Suzette La Flamme, Wee Willie and Professor Fate, just in from out-system. There seems to be a room shortage in town. I thought perhaps you could accommodate them."

Hrooze eyed the door through which the Terrans had entered, twitched his nictating eyelids in a nervous gesture.

"You know the situation here, Retief!" he said. "I have nothing against Terries personally, of course, but if I rent to these people—"

"I was thinking you might fix them up with free rooms, just as a sort of good-will gesture."

"If we these Terries to the Ritz-Krudlu admit, the repercussions political out of business us will put!" Strupp expostulated.

"The next ship out is two days from now," Retief said. "They need a place to stay until then."

Hrooze looked at Retief, mopped his neck again. "I owe you a favor, Retief," he said. "Two days, though, that's all!"

"But—" Strupp began.

"Silence!" Hrooze sneezed. "Put them in twelve-oh-three and four!"

He drew Retief aside as a small bell-hop in a brass-studded harness began loading baggage on his back.

"How does it look?" he inquired. "Any hope of getting that squadron of Peace Enforcers to stand by out-system?"

"I'm afraid not; Sector HQ seems to feel that might be interpreted by the Krultch as a war-like gesture."

"Certainly it would! That's exactly what the Krultch can understand—"

"Ambassador Sheepshorn has great faith in the power of words," Retief said soothingly. "He has a reputation as a great verbal karate expert; the Genghis Khan of the conference table."

"But what if you lose? The cabinet votes on the Krultch treaty tomorrow! If it's signed, Gaspierre will be nothing but a fueling station for the Krultch battle fleet! And you Terries will end up slaves!"

"A sad end for a great oral athlete," Retief said. "Let's hope he's in good form tomorrow."

In the shabby room on the twelfth level, Retief tossed a thick plastic coin to the baggage slave, who departed emitting the thin squeaking that substituted in his species for a jaunty whistle. Mulvihill, a huge man with a handlebar mustache, looked around, plumped his vast, bulging suitcase to the thin carpet, and mopped at the purple-fruit stain across his red plastiweve jacket.

"I'd like to get my hands on the Gasper that threw that," he growled in a bullfrog voice.

"That's a mean crowd out there," said Miss La Flamme, a shapely redhead with a tattoo on her left biceps. "It was sure a break for us the Ambassador changed his mind about helping us out. From the look the old sourpuss gave me when I kind of bumped up against him, I figured he had ground glass where his red corpuscles ought to be."

"I got a sneaking hunch Mr. Retief swung this deal on his own, Suzie," the big man said. "The Ambassador's got bigger things on his mind than out-of-work variety acts."

"This is the first time the Marvelous Merivales have ever been flat out of luck on tour," commented a whiskery little man no more than three feet tall, dressed in an old-fashioned frock coat and a checkered vest, in a voice like the yap of a Pekinese. "How come we got to get mixed up in politics?"

"Shut up, Willie," the big man said. "It's not Mr. Retief's fault we came here."

"Yeah," the midget conceded. "I guess you fellows in the CDT got it kind of rough too, trying to pry the Gaspers outa the Krultch's hip pocket. Boy, I wish I could see the show tomorrow when the Terry Ambassador and the Krultch brass slug it out to see whose side the Gasper'll be neutral on."

"Neutral, ha!" the tall, cadaverous individual looming behind Wee Willie snorted. "I caught a glimpse of that ferocious war vessel at the port, openly flying the Krultch battle-flag! It's an open breach of interworld custom—"

"Hey, Professor, leave the speeches to the CDT," the girl said.

"Without free use of Gaspierre ports, the Krultch plans for expansion through the Gloob cluster would come to naught. A firm stand—"

"Might get 'em blasted right off the planet," the big man growled. "The Krultch play for keeps."

"And the Gaspers aim to be on the winning side," the

midget piped. "And all the smart money is on the Krultch battle-wagon to put up the best argument."

"Terries are fair game around here, it looks like, Mr. Retief," Mulvihill said. "You better watch yourself going back."

Retief nodded. "Stay close to your rooms; if the vote goes against us tomorrow, we may all be looking for a quick way home."

II

Outside on the narrow elevated walkway that linked the gray slab-like structures of the city, thin-featured Gaspierre natives shot wary looks at Retief, some skirting him widely, others jostling him as they crowded past. It was a short walk to the building where the Terrestrial delegation occupied a suite. As Retief neared it, a pair of Krultch sailors emerged from a shop, turned in his direction. They were short-coupled centauroid quadrupeds, with deep, narrow chests, snouted faces with businesslike jaws and fringe beards, dressed in the red-striped livery of the Krultch Navy, complete with side-arms and short swagger sticks.

Retief altered course to the right to give them passing room; they saw him, nudged each other, and spaced themselves to block the walk. Retief came on without slowing, started between them. The Krultch closed ranks. Retief stepped back, started around the sailor on the left. The creature sidled, still blocking his path.

"Oh-hoh, Terry loose in street," he said in a voice like sand in a gear-box. "You lost, Terry?"

The other Krultch crowded Retief against the rail. "Where you from, Terry? What you do—?"

Without warning, Retief slammed a solid kick to the shin of the Krultch before him, simultaneously wrenched the stick from the alien's grip, cracked it down sharply across the wrist of the other sailor as he went for his gun. The weapon clattered, skidded off the walk and was gone. The one whom Retief had kicked was hopping on three legs, making muffled sounds of agony. Retief stepped quickly to him, jerked his gun from its holster, aimed it negligently at the other Krultch.

"Better get your buddy back to the ship and have that leg looked at," he said. "I think I broke it."

A ring of gaping Gaspierre had gathered, choking the walk. Retief thrust the pistol into his pocket, turned his back on the Krultch, pushed through the locals. A large coarsehided Gaspierre policeman made as if to block his way; Retief rammed an elbow in his side, chopped him across the side of the neck as he doubled up, thrust him aside and kept going. A mutter was rising from the crowd behind him.

The Embassy was just ahead now. Retief turned off toward the entry; two yellow-uniformed Gaspierre moved into sight under the marquee, eyed him as he came up.

"Terran, have you not heard of the curfew?" one demanded in shrill but accurate Terran.

"Can't say that I have," Retief replied. "There wasn't any, an hour ago."

"There is now!" the other snapped. "You Terries are not popular here. If you insist in inflaming the populace by walking abroad, we cannot be responsible for your safety —" He broke off as he saw the Krultch pistol protruding from Retief's pocket.

"Where did you get that?" he demanded in Gaspierran, then switched to pidgin Terran: "Where you-fella catch um bang-bang?"

"A couple of lads were playing with it in the street," Retief said in the local dialect. "I took it away from them before someone got hurt." He started past them.

"Hold on there," the policeman snapped. "We're not finished with you yet, fellow. We'll tell you when you can go. Now . . ." He folded his upper elbows. "You're to go to your quarters at once. In view of the tense interplanetary situation, you Terries are to remain inside until further notice. I have my men posted on all approaches to, ah, provide protection."

"You're putting a diplomatic mission under arrest?" Retief inquired mildly.

"I wouldn't call it that. Let's just say that it wouldn't be safe for foreigners to venture abroad."

"Threats too?"

"This measure is necessary in order to prevent unfortunate incidents!"

"How about the Krultch? They're foreigners; are you locking them in their bedrooms?"

"The Krultch are old and valued friends of the Gaspierre," the police captain said stiffly. "We—"

"I know; ever since they set an armed patrol just outside

Gaspierran atmosphere, you've developed a vast affection for them. Of course, their purchasing missions help too."

The captain smirked. "We Gaspierre are nothing if not practical." He held out his claw-like two-fingered hand. "You will now give me the weapon."

Retief handed it over silently.

"Come; I will escort you to your room," the cop said.

Retief nodded complacently, followed the Gaspierre through the entry cubicle and into the lift.

"I'm glad you've decided to be reasonable," the cop said. "After all, if you Terries *should* convince the cabinet, it will be much nicer all around if there have been no incidents."

"How true," Retief murmured.

He left the car at the 20th floor.

"Don't forget, now," the cop said, watching Retief key his door. "Just stay inside and all will yet be well." He signaled to a policeman standing a few yards along the corridor.

"Keep an eye on the door, Klosta."

Inside, Retief picked up the phone, dialed the Ambassador's room number. There was a dry buzz, no answer. He looked around the room. There was a tall, narrow window set in the wall opposite the door with a hinged section that swung outward. Retief opened it, leaned out, looked down at the dizzying stretch of blank facade that dropped sheer to the upper walkway seventy yards below. Above, the wall extended up twenty feet to an overhanging cornice. He went to the closet, yanked a blanket from the shelf, ripped it in four wide strips, knotted them together, and tied one end to a chair which he braced below the window.

Retief swung his legs outside the window, grasped the blanket-rope, and slid down.

The window at the next level was closed and shuttered. Retief braced himself on the skill, delivered a sharp kick to the panel; it shattered with an explosive sound. He dropped lower, reached through, released the catch, pulled the window wide, knocked the shutter aside, and scrambled through into a darkened room.

"Who's there?" a sharp voice barked. A tall, lean man in a ruffled shirt with an unknotted string tie hanging down the front gaped at Retief from the inner room.

"Retief! How did you get here? I understood that none of the staff were to be permitted—that is, I agreed that protective custody—er, it seems . . ."

"The whole staff is bottled up here in the building, Mr. Ambassador. I'd guess they mean to keep us here until after the Cabinet meeting. It appears the Krultch have the fix in."

"Nonsense! I have a firm commitment from the Minister that no final commitment will be made until we've been heard—"

"Meanwhile, we're under house arrest—just to be sure we don't have an opportunity to bring any of the cabinet around to our side."

"Are you suggesting that I've permitted illegal measures to be taken without a protest?" Ambassador Sheepshorn fixed Retief with a piercing gaze which wilted, and slid aside. "The place was alive with armed gendarmes," he sighed. "What could I do?"

"A few shrill cries of outrage might have helped," Retief pointed out. "It's not too late. A fast visit to the Foreign Office—"

"Are you out of your mind? Have you observed the temper of the populace? We'd be torn to shreds!"

Retief nodded. "Quite possibly; but what do you think our chances are tomorrow, after the Gaspierre conclude a treaty with the Krultch?"

Sheepshorn made two tries, then swallowed hard. "Surely, Retief, you don't—"

"I'm afraid I do," Retief said. "The Krultch need a vivid symbol of their importance—and they'd also like to involve the Gaspierre in their skulduggery, just to insure their loyalty. Packing a clutch of Terry diplomats off to the ice mines would do both jobs."

"A great pity," the Ambassador sighed. "And only nine months to go till my retirement."

"I'll have to be going now," Retief said. "There may be a posse of annoyed police along at any moment, and I'd hate to make it too easy for them."

"Police? You mean they're not even waiting until after the Cabinet's decision?"

"Oh, this is just a personal matter; I damaged some Krultch Naval property and gave a Gaspierre cop a pain in the neck."

"I've warned you about your personality, Retief," Sheepshorn admonished. "I suggest you give yourself up, and ask for clemency; with luck, you'll get to go along to the mines with the rest of us. I'll personally put in a good word!"

"That would interfere with my plans, I'm afraid," Retief said. He went to the door. "I'll try to be back before the Gaspierre do anything irrevocable. Meanwhile hold the fort here. If they come for you, quote regulations at them; I'm sure they'll find that discouraging."

"Plans? Retief, I positively forbid you to—"

Retief stepped through the door and closed it behind him, cutting off the flow of Ambassadorial wisdom. A flat policeman, posted a few feet along the corridor, came to the alert.

"All right, you can go home now," Retief said in brisk Gaspierran. "The chief changed his mind; he decided violating a Terran Embassy's quarters was just asking for trouble. After all, the Krultch haven't won yet."

The cop stared at him, then nodded. "I wondered if this wasn't kind of getting the rickshaw before the coolie . . ." He hesitated. "But what do *you* know about it?"

"I just had a nice chat with the captain, one floor up."

"Well, if he let you come down here, I guess it's all right."

"If you hurry, you can make it back to the barracks before the evening rush begins." Retief waved airily and strolled away along the corridor.

III

Back at ground level, Retief went along a narrow service passage leading to the rear of the building, stepped out into a deserted-looking courtyard. There was another door across the way. He went to it, followed another hall to a street exit. There were no cops in sight. He took the sparsely peopled lower walkway, set off at a brisk walk.

Ten minutes later, Retief surveyed the approaches to the Hostelry Ritz-Krudlu from the shelter of an inter-level connecting stair. There was a surging crowd of Gaspierre blocking the walkway, with a scattering of yellow police uniforms patrolling the edge of the mob. Placards lettered TERRY GO HOME and KEEP GASPIERRE BROWN bobbed above the sea of flattened heads. Off to one side, a heavily braided Krultch officer stood with a pair of age-tarnished locals, looking on approvingly.

Retief retraced his steps to the debris-littered ground level twenty feet below the walkway, found an eighteen-inch

wide airspace leading back between buildings. He inched along it, came to a door, found it locked. Four doors later, a latch yielded to his touch.

He stepped inside, made out the dim outlines of an empty storage room. The door across the room was locked. Retief stepped back, slammed a kick against it at latch level; it bounced wide.

After a moment's wait for the sound of an alarm which failed to materialize, Retief moved off along the passage, found a rubbish-heaped stair. He clambered over the debris, and started up.

At the twelfth level, he emerged into the corridor. There was no one in sight. He went quickly along to the door numbered 1203, tapped lightly. There was a faint sound from inside; then a bass voice rumbled, "Who's there?"

"Retief. Open up before the house dick spots me."

Bolts clattered and the door swung wide; Julius Mulvihill's mustached face appeared; he seized Retief's hand and pumped it.

"Cripes, Mr. Retief, we were worried about you. Right after you left, old Hrooze called up here and said there was a riot starting up!"

"Nothing serious; just a few enthusiasts out front putting on a show for the Krultch."

"What's happened?" Wee Willie chirped, coming in from the next room with lather on his chin. "They throwing us out already?"

"No, you'll be safe enough right here. But I need your help."

The big man nodded, flexed his hands.

Suzette La Flamme thrust a drink into Retief's hand. "Sit down and tell us about it."

"Glad you came to us, Retief," Wee Willie piped.

Retief took the offered chair, sampled the drink, then outlined the situation.

"What I have in mind could be dangerous," he finished.

"What ain't?" Willie demanded.

"It calls for a delicate touch and some fancy footwork," Retief added.

The professor cleared his throat. "I am not without a certain dexterity—" he started.

"Let him finish," the redhead said.

"And I'm not even sure it's possible," Retief stated.

The big man looked at the others. "There's a lot of

things that look impossible—but the Marvelous Merivales do 'em anyway. That's what's made our act a wow on a hundred and twelve planets."

The girl tossed her red hair. "The way it looks, Mr. Retief, if somebody doesn't do something, by this time tomorrow this is going to be mighty unhealthy territory for Terries."

"The ones the mob don't get will be chained to an oar in a Krultch battle-wagon," Willie piped.

"With the Mission pinned down in their quarters, the initiative appears to rest with us," Professor Fate intoned. The others nodded.

"If you're all agreed then," Retief said, "here's what I have in mind . . ."

The corridor was empty when Retief emerged, followed by the four Terrans.

"How are we going to get out past that crowd out front?" Mulvihill inquired. "I've got a feeling they're ready for something stronger than slogans."

"We'll try the back way."

There was a sudden hubbub from the far end of the corridor; half a dozen Gaspierre burst into view, puffing hard from a fast climb. They hissed, pointed, and started for the Terrans at a short-legged trot. At the same moment, a door flew wide at the opposite end of the hallway; more locals popped into view, closed in.

"Looks like a neck-tie party," Wee Willie barked. "Go get 'em, Juliel" He put his head down and charged. The oncoming natives slowed, skipped aside. One, a trifle slow, bounced against the wall as the midget rammed him at knee level. The others whirled, grabbing at Wee Willie as he skidded to a halt. Mulvihill roared, took three giant steps, caught two Gaspierre by the backs of their leathery necks, lifted them and tossed them aside.

The second group of locals, emitting wheezes of excitement, dashed up, eager for the fray. Retief met one with a straight right, knocked two more aside with a sweep of his arm, sprinted for the door through which the second party of locals had appeared. He looked back to see Mulvihill toss another Gaspierre aside, pluck Wee Willie from the melee.

"Down here, Juliel" the girl called. "Come on, Professor!"

The tall, lean Terran, backed against the wall by three hissing locals, stretched out a yard-long arm, flapped his hand. A large white pigeon appeared, fluttered, squawk-

ing and snorting. Professor Fate plunged through them, grabbed the bird by the legs as he passed, dashed for the door where Retief and the girl waited.

There was a sound of pounding feet from the stairwell; a fresh contingent of locals came charging into view on stub legs. Retief took two steps, caught the leader full in the face with a spread hand, sent him among his followers, as Mulvihill appeared, Wee Willie over his shoulder yelling and kicking.

"There's more on the way," Retief called. "We'll have to go up."

The girl nodded, started up, three steps at a time. Mulvihill dropped the midget, who scampered after her. Professor Fate tucked his bird away, disappeared up the stairs in giant strides, Mulvihill and Retief behind him.

On the roof, Retief slammed the heavy door, shot the massive bolt. It was late evening now; cool blue air flowed across the unrailed deck; faint crowd-sounds floated up from the street twenty stories below.

"Willie, go secure that other door," Mulvihill commanded. He went to the edge of the roof, looked down, shook his head, started across toward another side. The redhead called to him.

"Over here, Julie . . ."

Retief joined Mulvihill at her side. A dozen feet down and twenty feet distant across a narrow street was the slanted roof of an adjacent building. A long ladder was clamped to brackets near the ridge.

"Looks like that's it," Mulvihill nodded. Suzette unlimbered a coil of light line from a clip at her waist, gauged the distance to a projecting ventilator intake, swung the rope, and let it fly. The broad loop spread, slapped the opposite roof, and encircled the target. With a tug, the girl tightened the noose, quickly whipped the end around a four-inch stack. She stopped, pulled off her shoes, tucked them in her belt, tried the taut rope with one foot.

"Take it easy, baby," Mulvihill muttered. She nodded, stepped out on the taut, down-slanting cable, braced her feet, spread her arms, and in one smooth swoop, slid along the line and stepped off the far end, turned and executed a quick curtsey.

"This is no time to ham it up," Mulvihill boomed.

"Just habit," the girl said. She went up the roof, freed the ladder, released the catch that caused an extensible sec-

tion to slide out, then came back to the roof's edge, deftly raised the ladder to a vertical position.

"Catch!" She let it lean toward Mulvihill and Retief; as it fell both men caught it, lowered it the last foot.

"Hey, you guys," Willie called, "I can't get this thing locked!"

"Never mind that now," Mulvihill rumbled. "Come on, Prof," he said to the lean prestidigitator. "You first."

The professor's Adam's apple bobbed as he swallowed. He peered down at the street far below, then threw his shoulders back, clambered up onto the ladder, and started across on all fours.

"Don't look down, Professor," Suzie called. "Look at me."

"Let's go, Willie!" Mulvihill called over his shoulder. He freed the rope, tossed it across, then stepped up on the ladder, started across, one small step at a time. "This isn't my strong suit," he muttered, teeth together. The professor had reached the far side. Mulvihill was half way. There was a sudden yelp from Willie. Retief turned. The midget was struggling against a door which was being forced open from inside.

"Hey!" Mulvihill boomed. Suzie squealed. Retief sprinted for the embattled midget, caught him as he was hurled backward as the door flew open, disgorging three Gaspierre who staggered for balance, and went down as Retief thrust out a foot. He thrust Wee Willie aside, picked up the nearest native, pitched him back inside, followed with the other two, then slammed the door, and tried the bolt.

"It's sprung," he said. "Let's go, Willie!" He caught up the small man, ran for the ladder where Mulvihill still stood, halfway across.

"Come on, Julie!" the girl cried. "It won't hold both of you!"

There were renewed breathy yells from the site of the scuffle. The door had burst open and more Gaspierre were spilling from it. Mulvihill snorted, finished the crossing in two jumps, scrambled for footing on the slanting roof. Retief stepped out on the limber ladder, started across, Willie under his arm.

"Look out!" Suzette said sharply. The rungs jumped under Retief's feet. He reached the roof, dropped the midget, and turned to see a huddle of Gaspierre tugging at the ladder. One, rendered reckless in his zeal, started across. Re-

tief picked up the end of the ladder, shook it; the local squeaked, scrambled back. Retief hauled the ladder in.

"Up here," the girl called. Retief went up the slope, looked down at an open trap door in the opposite slope. He followed the others down through it into a musty loft, latched it behind him. The loft door opened into an empty hall. They followed it, found a lift, rode it down to ground level. Outside in a littered alley, the crowd noises were faint.

"We appear to have outfoxed the ruffians," Professor Fate said, adjusting his cuffs.

"The Gaspers ain't far behind," Wee Willie shrilled. "Let's make tracks."

"We'll find a spot and hide out until dark," Retief said. "Then we'll make our try."

IV

A faint gleam from Gaspierre's three bright-star-sized moons dimly illuminated the twisting alley along which Retief led the four Terrans.

"The port is half a mile from the city wall," he said softly to Mulvihill at his side. "We can climb it between watch-towers, and circle around and hit the ramp from the east."

"They got any guards posted out there?" the big man asked.

"Oh-oh, here's the wall . . ." The barrier loomed up, twelve feet high. Suzette came forward, looked it over.

"I'll check the top," she said. "Give me a boost, Julie." He lifted her, raised her to arm's length. She put a foot on the top of his head, stepped up.

Mulvihill grunted. "Watch out some Gasper cop doesn't spot you."

"Coast is clear." She pulled herself up. "Come on, Willie, I'll give you a hand." Mulvihill lifted the midget, who caught the girl's hand, and scrambled up. Mulvihill bent over, and Retief stepped in his cupped hands, then to the big man's shoulders, and reached the top of the wall. The girl lowered her rope for Mulvihill. He clambered up, swearing softly, with Retief's help hoisted his bulk to the top of the wall. A moment later the group was moving off quietly across open ground toward the south edge of the port.

Lying flat at the edge of the ramp, Retief indicated a looming, light-encrusted silhouette.

"That's her," he said. "Half a million tons, crew of three hundred."

"Big enough, ain't she?" Wee Willie chirped.

"Hsst! There's a Krultch!" Mulvihill pointed.

Retief got to his feet. "Wait until I get in position behind that fuel monitor." He pointed to a dark shape crouching fifty feet distant. "Then make a few suspicious noises."

"I better go with you, Retief," Mulvihill started, but Retief was gone. He moved forward silently, reached the shelter of the heavy apparatus, watched the Krultch sentinel move closer, stepping daintily as a deer on its four sharp hooves. The alien had reached a point a hundred feet distant when there was a sharp ping! from behind Retief. The guard halted; Retief heard the snick of a power gun's action. The Krultch turned toward him. He could hear the cli-clack, cli-clack of the hooves now. At a distance of ten feet, the quadruped slowed, came to a halt. Retief could see the vicious snout of the gun aimed warily into the darkness. There was another sound from Mulvihill's position. The guard plucked something from the belt rigged across his chest, and started toward the source of the sound. As he passed Retief he shied suddenly, and grabbed for his communicator. Retief leaped, landed a haymaker on the bony face, and caught the microphone before it hit the pavement. The Krultch, staggering back from the blow, went to his haunches and struck out with knife-edged forefeet. Retief ducked aside, chopped hard at the collar bone. The Krultch collapsed with a choked cry. Mulvihill appeared at a run, seized the feebly moving guard, pulled off the creature's belt, trussed his four legs together, and then, using other straps to bind the hands, he gagged the powerful jaws.

"Now what?" Wee Willie inquired. "You gonna cut his throat?"

"Shove him back of the monitor," Mulvihill said.

"Now let's see how close we can get to the ship without getting spotted," Retief said.

The mighty Krultch war vessel, a black column towering into the night, was ablaze with varicolored running and navigation lights. Giant floods mounted far up on the ship's sleek sides cast puddles of blue-white radiance on the tarmac; from the main cabin amidships, softer light gleamed through wide view windows.

"All lit up like a party," Mulvihill growled.

"A tough party to crash," Wee Willie said, looking up the long slant of the hull.

"I think I see a route, Mr. Retief," the girl said. "What's that little square opening up there, just past the gun emplacement?"

"It looks as though it might be a cargo hatch. It's not so little, Miss La Flamme! it's a long way up—"

"You reckon I could get through it?"

Retief nodded, looking up at the smooth surface above. "Can you make it up there?"

"They used to bill me as the human lady-bug. Nothing to it."

"If you get in," Retief said, "try to find your way back down into the tube compartment. If you can open one of these access panels, we're in."

Suzette nodded, took out her rope, tossed a loop over a projection fifteen feet above, and clambered quickly up the landing jack to its junction with the smooth metal of the hull. She put her hands flat against the curving, slightly inslanting wall before her, planted one crepe-soled shoe against a tiny weld seam and started up the sheer wall.

Ten minutes passed. From the deep shadow at the ship's stern, Retief watched as the slim girl inched her way up, skirting a row of orange glare panels spelling out the name of the vessel in blocky Krultch ideographs, taking advantage of a ventilator outlet for a minute's rest, then going on up, up, thirty feet now, forty, forty-five . . .

She reached the open hatch, raised her head cautiously for a glance inside, then swiftly pulled up and disappeared through the opening.

Julius Mulvihill heaved a sign of relief. "That was as tough a climb as Suzie ever made," he rumbled.

"Don't get happy yet," Wee Willie piped up. "Her troubles is just starting."

"I'm sure she'll encounter no difficulty," Professor Fate said anxiously. "Surely there'll be no one on duty aft, here in port."

More minutes ticked past. Then there was a rasp of metal, a gentle clatter. A few feet above ground, a panel swung out: Suzie's face appeared, oil streaked.

"Boy, this place needs a good scrubbing," she breathed. "Come on; they're all having a shindig up above, sounds like."

Inside the echoing, gloomy vault of the tube compartment, Retief studied the layout of equipment, the placement of giant cooling baffles, and the contour of the bulkheads.

"This is a Krultch-built job," he said. "But it seems to be a pretty fair copy of an old Concordiat cruiser of the line. That means the controls are all the way forward."

"Let's get started!" Wee Willie went to the wide-runged catwalk designed for goat-like Krultch feet, started up. The others followed. Retief glanced around, reached for the ladder. As he did, a harsh Krultch voice snapped, "Halt where you are, Terrans!"

Retief turned slowly. A dirt-smeared Krultch in baggy coveralls stepped from the concealment of a massive ion-collector, a grim-looking power gun aimed. He waited as a second and third sailor followed him, all armed.

"A nice catch, Udas," one said admiringly in Krultch. "The captain said we'd have Terry labor to do the dirty work on the run back, but I didn't expect to see 'em volunteering."

"Get 'em down here together, Jesau," the first Krultch barked. His partner came forward, motioned with the gun.

"Retief, you savvy Fustian?" Mulvihill muttered.

"Uh-huh," Retief answered.

"You hit the one on the left; I'll take the bird on the right. Professor—"

"Not yet," Retief said.

"No talk!" the Krultch barked in Terran. "Come down!"

The Terrans descended to the deck, stood in a loose group.

"Closer together!" the sailor said; he poked the girl with the gun to emphasize the command. She smiled at him sweetly. "You bat-eared son of a goat, just wait till I get a handful of your whiskers!"

"No talk!"

Professor Fate edged in front of the girl. He held out both hands toward the leading Krultch, flipped them over to show both sides, then twitched his wrists, fanned two sets of playing cards. He waved them under the astounded nose of the nearest gunman, and with a flick they disappeared.

The two rearmost sailors stepped closer, mouths open. The professor snapped his fingers; flame shot from the tip of each pointed forefinger. The Krultch jumped. The tall Terran waved his hands, whipped a gauzy blue handkerchief from nowhere, swirled it around; now it was red. He snapped it sharply, and a shower of confetti scattered

around the dumbfounded Krultch. He doubled his fists, popped them open; whoofed into the aliens' faces. A final wave, and a white bird was squawking in the air.

"Now!" Retief said, and took a step, uppercut the leading sailor; the slender legs buckled as the creature went down with a slam. Mulvihill was past him, catching Krultch number two with a roundhouse swipe. The third sailor made a sound like tearing sheet metal, brought his gun to bear on Retief as Wee Wiille, hurtling forward, hit him at the knees. The shot melted a furrow in the wall as Mulvihill floored the hapless creature with a mighty blow.

"Neatly done," Professor Fate said, tucking things back into his cuffs. "Almost a pity to lose such an appreciative audience."

With the three Krultch securely strapped hand and foot in their own harnesses, Retief nudged one with his foot.

"We have important business to contract in the control room," he said. "We don't want to disturb anyone, Jesau, so we'd prefer a nice quiet approach via the back stairs. What would you suggest?"

The Krultch made a suggestion.

Retief said, "Professor, perhaps you'd better give him a few more samples."

"Very well." Professor Fate stepped forward, waved his hands; a slim-bladed knife appeared in one. He tested the edge with his thumb, which promptly dripped gore. He stroked the thumb with another finger; the blood disappeared. He nodded.

"Now, fellow," he said to the sailor. "I've heard you rascals place great store by your beards; what about a shave?" He reached—

The Krultch made a sound like glass shattering. "The port catwalk!" he squalled. "But you won't get away with this!"

"Oh, no?" The professor smiled gently, made a pass in the air, plucked a small cylinder from nowhere.

"I doubt if anyone will be along this way for many hours," he said. "If we fail to return safely in an hour, this little device will detonate with sufficient force to distribute your component atoms over approximately twelve square miles." He placed the object by the Krultch, who rolled horrified eyes at it.

"Oh—on second thought, try the service catwalk behind the main tube," he squeaked.

"Good enough," Retief said. "Let's go."

V

The sounds of Krultch revelry were loud in the cramped passage.

"Sounds like they're doing a little early celebrating for tomorrow's big diplomatic victory," Mulvihill said. "You suppose most of them are in there?"

"There'll be a few on duty," Retief said. "But that sounds like a couple of hundred out of circulation for the moment —until we trip something and give the alarm."

"The next stretch is all right," Professor Fate said, coming back dusting off his hands. "Then I'm afraid we shall have to emerge into the open."

"We're not far from the command deck now," Retief said. "Another twenty feet, vertically, ought to do it."

The party clambered on up, negotiated a sharp turn, came to an exit panel. Professor Fate put his ear against it.

"All appears silent," he said. "Shall we sally forth?"

Retief came to the panel, eased it open, glanced out; then he stepped through, motioned the others to follow. It was quieter here; there was a deep-pile carpeting underfoot, an odor of alien food and drug-smoke in the air.

"Officers' country," Mulvihill muttered.

Retief pointed toward a door marked with Krultch lettering. "Anybody read that?" he whispered.

There were shakes of the head and whispered negatives.

"We'll have to take a chance." Retief went to the door, gripped the latch, and yanked it suddenly wide. An obese Krultch in uniform belt but without his tunic looked up from a brightly colored magazine on the pages of which Retief glimpsed glossy photos of slender-built Krultch mares flirting saucy derrieres at the camera.

The alien stuffed the magazine in a desk slot, came to his feet, gaping, then whirled and dived for a control panel across the narrow passage in which he was posted. He reached a heavy lever and hauled it down just as Retief caught him with a flying tackle. Man and Krultch hit the deck together; Retief's hand chopped; the Krultch kicked twice and lay still.

"That lever—you suppose—" Wee Willie started.

"Probably an alarm," Retief said, coming to his feet. "Come on!" He ran along the corridor; it turned sharply to the right. A heavy door was sliding shut before him. He leaped to it, wedged himself in the narrowing opening, braced against the thrust of the steel panel. It slowed, with a groaning of machinery. Mulvihill charged up, grasped the edge of the door and heaved. Somewhere, metal creaked. There was a loud *clunk!* and a clatter of broken mechanism.

The door slid freely back.

"Close," Milvihill grunted. "For a minute there—" He broke off at a sound from behind him. Ten feet back along the passage a second panel had slid noiselessly out, sealing off the corridor. Mulvihill jumped to it, heaved against it.

Ahead, Retief saw a third panel, this one standing wide open. He plunged through it; skidded to a halt. A braided Krultch officer was waiting, a foot-long purple cigar in his mouth, a power gun in each hand. He kicked a lever near his foot. The door whooshed shut behind Retief.

"Ah, welcome aboard, Terran," the captain grated. "You can be the first of your kind to enjoy Krultch hospitality.

"I have been observing your progress on my inspection screen here." The captain nodded toward a small panel which showed a view of the four Terrans pushing fruitlessly against the doors that had closed to entrap them.

"Interesting," Retief commented.

"You are surprised at the sophistication of the equipment we Krultch can command?" the captain puffed out smoke, showed horny gums in a smile-like grimace.

"No, anybody who can steal the price can buy a Groaci spy-eye system," Retief said blandly. "But I find it interesting that you had to spend all that cash just to keep an eye on your crew. Not too trustworthy, eh?"

"What? Any of my crew would die at my command!"

"They'll probably get the chance, too," Retief nodded agreement. "How about putting one of the guns down—unless you're afraid of a misfire."

"Krultch guns never misfire." The captain tossed one pistol aside. "But I agree: I am overprotected against the paltry threat of a single Terran."

"You're forgetting—I have friends."

The Krultch made a sound like fingernails on a blackboard. "They are effectively immobilized," he said. "Now,

tell me, what did you hope to accomplish by intruding here?"

"I intend to place you under arrest," Retief said. "Mind if I sit down?"

The Krultch captain made laughing noises resembling a flawed drive bearing; he waved a two fingered claw-hand.

"Make yourself comfortable—while you can," he said. "Now, tell me, how did you manage to get your equipment up to my ship without being seen? I shall impale the slackers responsible, of course."

"Oh, we have no equipment," Retief said breezily. He sniffed. "That's not a Lovenbroy cigar, is it?"

"Never smoke anything else," the Krultch said. "Care for one?"

"Don't mind if I do," Retief admitted. He accepted an eighteen-inch stogie, lit up.

"Now, about the equipment," the captain persisted. "I assume you used fifty-foot scaling ladders, though I confess I don't see how you got them onto the port—"

"Ladders?" Retief smiled comfortably. "We Terrans don't need ladders; we just sprouted wings."

"Wings?"

"Oh, we're versatile, we Terries."

The captain was wearing an expression of black disapproval now. "If you had no ladders, I must conclude that you breached my hull at ground level," he snapped. "What did you use? It would require at least a fifty K-T-Second power input to penetrate two inches of flint-steel—"

Retief shook his head, puffing out scented smoke. "Nice," he said. "No, we just peeled back a panel bare-handed. We Terrans—"

"Blast you Terrans! Nobody could." The captain clamped his jaws, puffed furiously. "Just outside, in the access-control chamber you sabotaged the closure mechanism. Where is the hydraulic jack you used for this?"

"As I said, we Terrans—"

"You entered the secret access passage almost as soon as you boarded my vessel!" the captain screeched. "My men are inoculated against every talk-drug known! What did you use on the traitor who informed you!"

Retief held up a hand. "We Terrans can be very persuasive, Captain. At this very moment, you yourself, for example, are about to be persuaded of the futility of trying to out-maneuver us."

The Krultch commander's mouth opened and closed. "*Me!*" he burst out. "You think that you can divert a Krultch officer from the performance of his duty?"

"Sure," a high voice piped from above and behind the captain. "Nothing to it."

The Krultch's hooves clattered as he whirled, froze at the sight of Wee Willie's small, round face smiling down at him from the ventilator register above the control panel. In a smooth motion, Retief cracked the alien across the wrist, and twitched the gun from his nerveless hand.

"You see?" he said as the officer stared from him to the midget and back. "Never underestimate us Terrans."

The captain drooped in his chair, mopping at his face with a polka-dotted hanky provided by Wee Willie.

"This interrogation is a gross illegality!" he groaned. "I was assured that all your kind did was talk—"

"We're a tricky lot," Retief conceded. "But surely a little innocent deception can be excused, once you understand our natures. We love strife, and this seemed to be the easiest way to stir up some action."

"Stir up action?" the Krultch croaked.

"There's something about an apparently defenseless nincompoop that brings out the opportunist in people," Retief said. "It's a simple way for us to identify troublemakers, so they can be dealt with expeditiously. I think you Krultch qualify handsomely. It's convenient timing, because we have a number of new planet-wrecking devices we've been wanting to field-test."

"You're bluffing!" the Krultch bleated.

Retief nodded vigorously. "I have to warn you, but you don't have to believe me. So if you still want to try conclusions—"

There was a sharp buzz from the panel; a piercing yellow light blinked rapidly. The captain's hand twitched as he eyed the phone.

"Go ahead, answer it," Retief said. "But don't say anything that might annoy me. We Terrans have quick tempers."

The Krultch flipped a key.

"Exalted one," a rapid Krultch voice babbled from the panel. "We have been assassinated by captives! I mean, captivated by assassins! There were twelve of them—or perhaps twenty! Some were as high as a hundred-year Fufu tree,

and others smaller than hoof-nits! One had eyes of live coals, and flames ten feet long shot from his hands, melting all they touched, and another—"

"Silence!" the captain roared. "Who are you? Where are you? What in the name of the Twelve Devils is going on here!" He whirled on Retief. "Where are the rest of your commandos? How did they evade my surveillance system? What—"

"Ah-ah," Retief clucked. "I'm asking the questions now. First, I'll have the names of all Gaspierre officials who accepted your bribes."

"You think I would betray my compatriots to death at your hands?"

"Nothing like that; I just need to know who the cooperative ones are so I can make them better offers."

A low brackk! sounded; this time a baleful blue light winked. The Krultch officer eyed it warily.

"That's my outside hot line to the Foreign Office," he said. "When word reaches the Gaspierre government of the piratical behavior you allegedly peaceful Terries indulged in behind the facade of diplomacy—"

"Go ahead, tell them," Retief said. "It's time they discovered they aren't the only ones who understand the fine art of the triple-cross."

The Krultch lifted the phone. "Yes?" he snapped. His expression stiffened. He rolled an eye at Retief, then at Wee Willie.

"What's that?" he barked into the communicator. "Flew through the air? Climbed where? What do you mean, giant white birds!"

"Boy," Wee Willie exclaimed. "Them Gaspers sure exaggerate!"

The captain eyed the tiny man in horror, comparing his height with Retief's six-three.

He shuddered.

"I know," he said into the phone.

"They're already here . . ." He dropped the instrument back on its hook, glanced at his panel, idly reached—

"That reminds me," Retief said. He pointed the gun at the center of the captain's chest. "Order all hands to assemble amidships," he said.

"They—they're already there," the Krultch said unsteadily, his eyes fixed on the gun.

"Just make sure."

The captain depressed a key, cleared his throat.

"All hands to the central feeding area, on the double," he said.

There was a moment's pause. Then a Krultch voice came back: "All except the stand-by crews in power section and armaments, I guess you mean, Exalted One."

"I said all hands, damn you!" the officer snarled. He flipped off the communicator. "I don't know what you think you'll accomplish with this," he barked. "I have three hundred fearless warriors aboard this vessel; you'll never get off this ship alive!"

Two minutes passed. The communicator crackled. "All hands assembled, sir."

"Willie, you see that big white lever?" Retief said mildly. "Just pull it down, and the next one to it."

The captain made as if to move. The gun jumped at him. Willie went past the Krultch, wrestled the controls down. Far away, machinery rumbled. A distinct shock ran through the massive hull, then a second.

"What was that?" Willie asked.

"The disaster bulkheads, sliding shut," Retief said. "The three hundred fearless warriors are nicely locked in between them."

The captain slumped, looking stricken. "How do you know so much about the operation of my vessel?" he demanded. "It's classified . . ."

"That's the result of stealing someone else's plans; the wrong people may have been studying them. Now, Willie, go let Julius and the rest of the group in; then I think we'll be ready to discuss surrender terms."

"This is a day that will live in the annals of treachery," the captain grated hollowly.

"Oh, I don't think it needs to get into the annals," Retief said. "Not if we can come to a private understanding, just between gentlemen."

VI

It was an hour past sunrise when the emergency meeting of the Gaspierre Cabinet broke up. Ambassador Sheepshorn, emerging from the chamber deep in amiable conversation with an uncomfortable-looking Krultch officer in elaborate full dress uniform, halted as he spied Retief.

"Ah, there, my boy! I was a trifle concerned when you failed to return last evening; but, as I was just pointing out to the Captain here, it was really all just a dreadful misunderstanding. Once the Krultch position was made clear —that they really preferred animal husbandry and folk dancing to any sort of war-like adventure—the Cabinet was able to come to a rapid and favorable decision on the Peace-and-Friendship Treaty, giving Terrans full Most Favored Nation status."

"I'm glad to hear that, Mr. Ambassador," Retief said, nodding to the stony-faced Krultch commander. "I'm sure we'd all rather engage in friendly competition than have to demonstrate our negotiating ability any further."

There was a stir at the end of the corridor; a harried-looking Krultch officer with a grimy Krultch yeoman in tow appeared, came up to the captain, and saluted.

"Exalted One, this fellow has just escaped from some sort of magical paralysis."

"It was that one," the sailor indicated Retief. "Him and the others." He looked reproachfully at Retief. "That was a dirty trick, telling us that was a bomb you were planting; we spent a rough night before we found out it was just a dope-stick."

"Sorry," Retief said.

"Look, Exalted One," the sailor went on in a stage whisper. "What I wanted to warn you about, that Terry—the long one, with the pointed tail and the fiery breath; he's a warlock; he waves his hands and giant white flying creatures appear—"

"Silence, idiot!" the captain bellowed. "Have you no powers of observation? They don't merely *produce* birds; any fool could do *that!* They transform themselves! Now get out of my sight! I plan to enter a monastery as soon as we

return home, and I want to get started on my meditating!" He nodded curtly and clattered away.

"Odd sort of chap," Sheepshorn commented. "I wonder what he was talking about?"

"Just some sort of in-group joke, I imagine," Retief said. "By the way, about that group of distressed Terrans I mentioned to you—"

"Yes. I may have been a bit abrupt with them, Retief; but of course I was busy planning my strategy for today's meeting. Perhaps I was hasty. I hereby authorize you to put in a good word for them."

"I took the liberty of going a little farther than that," Retief said. "Since the new treaty calls for Terran cultural missions, I signed a six months contract with them to put on shows here on Gaspierre."

Sheepshorn frowned. "You went a bit beyond your authority, Retief," he snapped. "I'd thought we might bring in a nice group or two to read classic passages from the Congressional Record, or perform some of the new silent music; and I had half-way promised the Garoci Minister I'd have one of his nose-flute troupes—"

"I thought it might be a good idea to show Terran solidarity, just at this juncture," Retief pointed out. "Then, too, a demonstration of sword-swallowing, prestidigitation, fire-eating, juggling, tight-rope walking, acrobatics and thaumaturgics might be just the ticket for dramatizing versatility."

Sheepshorn considered with pursed lips, then nodded. "You may have a valuable point there, my boy; we Terrans *are* a versatile breed. Speaking of which, I wish you'd been there to see my handling of the negotiation this morning! One moment I was all fire and truculence; the next, as smooth as Yill silk."

"A brilliant performance, I daresay, Mr. Ambassador."

"Yes, indeed." Sheepshorn rubbed his hands together, chuckling. "In a sense, Retief, diplomacy itself might be thought of as a branch of show business, eh? Thus, these performers might be considered colleagues of a sort."

"True, but I wouldn't mention it when they're within earshot."

"Yes, it might go to their heads. Well, I'm off, Retief. My report on this morning's work will become a classic study of Terran diplomatic subtlety."

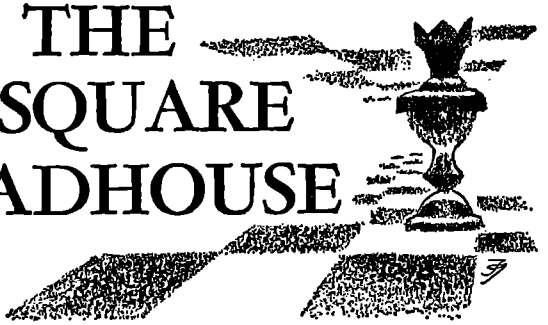
He hurried away. A Gaspierre with heavy bifocal lenses edged up to Retief.

"I'm with the *Gaspierre Morning Exhalation,*" he wheezed. "Is it true, sire, that you Terries can turn into fire-breathing dragons at will?"

A second reporter closed in. "I heard you read minds," he said. "And about this ability to walk through walls—"

"Just a minute, boys." Retief held up a hand. "I wouldn't want to be quoted on this, of course, but just between you and me, here's what actually happened: As soon as the Ambassador had looked into his crystal ball . . ."

THE 64-SQUARE MADHOUSE



FRITZ LEIBER

Silently, so as not to shock anyone with illusions about well dressed young women, Sandra Lea Grayling cursed the day she had persuaded the *Chicago Space Mirror* that there would be all sorts of human interest stories to be picked up at the first international grandmaster chess tournament in which an electronic computing machine was entered.

Not that there weren't enough humans around; it was the interest that was in doubt. The large hall was crammed with energetic dark-suited men of whom a disproportionately large number were bald, wore glasses, were faintly untidy and indefinably shabby, had Slavic or Scandinavian features, and talked foreign languages.

They yakked interminably. The only ones who didn't were scurrying individuals with the eager-zombie look of officials.

Chess sets were everywhere—big ones on tables, still bigger diagram-type electric ones on walls, small peg-in sets dragged from side pockets and manipulated rapidly as part of the conversational ritual and still smaller folding sets in which the pieces were the tiny magnetized disks used for playing in free-fall.

There were signs featuring largely mysterious combinations of letters: FIDE, WBM, USCF, USSF, USSR and UNESCO. Sandra felt fairly sure about the last three.

The many clocks, bedside table size, would have struck a familiar note except that they had little red flags and wheels sprinkled over their faces and they were all in pairs, two clocks to a case. That Siamese-twin clocks should be essential to a chess tournament struck Sandra as a particularly maddening circumstance.

Her last assignment had been to interview the pilot pair riding the first American manned circum-lunar satellite—and the five alternate pairs who hadn't made the flight. This tournament hall seemed to Sandra much further out of the world.

Overheard scraps of conversation in reasonably intelligible English were not particularly helpful. Samples:

"They say the Machine has been programmed to play nothing but pure Barcza System and Indian Defenses—and the Dragon Formation if anyone pushes the King Pawn."

"Hah! In that case . . ."

"The Russians have come with ten trunkfuls of prepared variations and they'll gang up on the Machine at adjournments. What can one New Jersey computer do against four Russian grandmasters?"

"I heard the Russians have been programmed—with hypnotic cramming and somno-briefing. Votbinnik had a nervous breakdown."

"Why, the Machine hasn't even a *Haupturnier* or an intercollegiate won. It'll over its head be playing."

"Yes, but maybe like Capa at San Sebastian or Morphy or Willie Angler at New York. The Russians will look like potzers."

"Have you studied the scores of the match between Moon Base and Circum-Terra?"

"Not worth the trouble. The play was feeble. Barely Expert Rating."

Sandra's chief difficulty was that she knew absolutely nothing about the game of chess—a point that she had slid over in conferring with the powers at the *Space Mirror*, but that now had begun to weigh on her. How wonderful it would be, she dreamed, to walk out this minute, find a quiet bar and get pie-eyed in an evil, ladylike way.

"Perhaps mademoiselle would welcome a drink?"

"You're durn tootin' she would!" Sandra replied in a rush, and then looked down apprehensively at the person who had read her thoughts.

It was a small sprightly elderly man who looked like a

somewhat thinned down Peter Lorre—there was that same impression of the happy Slavic elf. What was left of his white hair was cut very short, making a silvery nap. His pince-nez had quite thick lenses. But in sharp contrast to the somberly clad men around them, he was wearing a pearl-gray suit of almost exactly the same shade as Sandra's—a circumstance that created for her the illusion that they were fellow conspirators.

"Hey, wait a minute," she protested just the same. He had already taken her arm and was piloting her toward the nearest flight of low wide stairs. "How did you know I wanted a drink?"

"I could see that mademoiselle was having difficulty swallowing," he replied, keeping them moving. "Pardon me for feasting my eyes on your lovely throat."

"I didn't suppose they'd serve drinks here."

"But of course." They were already mounting the stairs. "What would chess be without coffee or schnapps?"

"Okay, lead on," Sandra said. "You're the doctor."

"Doctor?" He smiled widely. "You know, I like being called that."

"Then the name is yours as long as you want it—Doc."

Meanwhile the happy little man had edged them into the first of a small cluster of tables, where a dark-suited jabbering trio was just rising. He snapped his fingers and hissed through his teeth. A white-aproned waiter materialized.

"For myself black coffee," he said. "For mademoiselle rhine wine and seltzer?"

"That'd go fine." Sandra leaned back. "Confidentially, Doc, I *was* having trouble swallowing . . . well, just about everything here."

He nodded. "You are not the first to be shocked and horrified by chess," he assured her. "It is a curse of the intellect. It is a game for lunatics—or else it creates them. But what brings a sane and beautiful young lady to this 64-square madhouse?"

Sandra briefly told him her story and her predicament. By the time they were served, Doc had absorbed the one and assessed the other.

"You have one great advantage," he told her. "You know nothing whatsoever of chess—so you will be able to write about it understandably for your readers." He swallowed half his demitasse and smacked his lips. "As for the Machine—you *do* know, I suppose, that it is not a humanoid metal

robot, walking about clanking and squeaking like a late medieval knight in armor?"

"Yes, Doc, but . . ." Sandra found difficulty in phrasing the question.

"Wait." He lifted a finger. "I think I know what you're going to ask. You want to know why, if the Machine works at all, it doesn't work perfectly, so that it always wins and there is no contest. Right?"

Sandra grinned and nodded. Doc's ability to interpret her mind was as comforting as the bubbly, mildly astringent mixture she was sipping.

He removed his pince-nez, massaged the bridge of his nose and replaced them.

"If you had," he said, "a billion computers all as fast as the Machine, it would take them all the time there ever will be in the universe just to play through all the possible games of chess, not to mention the time needed to classify those games into branching families of wins for White, wins for Black and draws, and the additional time required to trace out chains of key-moves leading always to wins. So the Machine can't play chess like God. What the Machine can do is examine all the likely lines of play for about eight moves ahead—that is, four moves each for White and Black—and then decide which is the best move on the basis of capturing enemy pieces, working toward checkmate, establishing a powerful central position and so on."

"That sounds like the way a man would play a game," Sandra observed. "Look ahead a little way and try to make a plan. You know, like getting out trumps in bridge or setting up a finesse."

"Exactly!" Doc beamed at her approvingly. "The Machine *is* like a man. A rather peculiar and not exactly pleasant man. A man who always abides by sound principles, who is utterly incapable of flights of genius, but who never makes a mistake. You see, you are finding human interest already, even in the Machine."

Sandra nodded. "Does a human chess player—a grandmaster, I mean—ever look eight moves ahead in a game?"

"Most assuredly he does! In crucial situations, say where there's a chance of winning at once by trapping the enemy king, he examines many more moves ahead than that—thirty or forty even. The Machine is probably programmed to recognize such situations and do something of the same sort, though we can't be sure from the information World Busi-

ness Machines has released. But in most chess positions the possibilities are so very nearly unlimited that even a grandmaster can only look a very few moves ahead and must rely on his judgment and experience and artistry. The equivalent of those in the Machine is the directions fed into it before it plays a game."

"You mean the programming?"

"Indeed yes! The programming is the crux of the problem of the chess-playing computer. The first practical model, reported by Bernstein and Roberts of IBM in 1958 and which looked four moves ahead, was programmed so that it had a greedy worried tendency to grab at enemy pieces and to retreat its own whenever they were attacked. It had a personality like that of a certain kind of chess-playing dub—a dull-brained woodpusher afraid to take the slightest risk of losing material—but a dub who could almost always beat an utter novice. The WBM machine here in the hall operates about a million times as fast. Don't ask me how, I'm no physicist, but it depends on the new transistors and something they call hypervelocity, which in turns depends on keeping parts of the Machine at a temperature near absolute zero. However, the result is that the Machine can see eight moves ahead and is capable of being programmed much more craftily."

"A million times as fast as the first machine, you say, Doc? And yet it only sees twice as many moves ahead?" Sandra objected.

"There is a geometrical progression involved there," he told her with a smile. "Believe me, eight moves ahead is a lot of moves when you remember that the Machine is errorlessly examining every one of thousands of variations. Flesh-and-blood chess masters have lost games by blunders they could have avoided by looking only one or two moves ahead. The Machine will make not such oversights. Once again, you see, you have the human factor, in this case working for the Machine."

"Savilly, I have been looking allplace for you!"

A stocky, bull-faced man with a great bristling shock of black, gray-flecked hair had halted abruptly by their table. He bent over Doc and began to whisper explosively in a guttural foreign tongue.

Sandra's gaze traveled beyond the balustrade. Now that she could look down at it, the central hall seemed less confusedly crowded. In the middle, toward the far end, were

five small tables spaced rather widely apart and with a chessboard and men and one of the Siamese clocks set out on each. To either side of the hall were tiers of temporary seats, about half of them occupied. There were at least as many more people still wandering about.

On the far wall was a big electric scoreboard and also, above the corresponding tables, five large dully glassy chessboards, the White squares in light gray, the Black squares in dark.

One of the five wall chessboards was considerably larger than the other four—the one above the Machine.

Sandra looked with quickening interest at the console of the Machine—a bank of keys and some half-dozen panels of rows and rows of tiny telltale lights, all dark at the moment. A thick red velvet cord on little brass standards ran around the Machine at a distance of about ten feet. Inside the cord were only a few gray-smocked men. Two of them had just laid a black cable to the nearest chess table and were attaching it to the Siamese clock.

Sandra tried to think of a being who always checked everything, but only within limits beyond which his thoughts never ventured, and who never made a mistake . . .

"Miss Grayling! May I present to you Igor Jandorf." She turned back quickly with a smile and a nod.

"I should tell you, Igor," Doc continued, "that Miss Grayling represents a large and influential Midwestern newspaper. Perhaps you have a message for her readers."

The shock-headed man's eyes flashed. "I most certainly do!" At that moment the waiter arrived with a second coffee and wine-and-seltzer. Jandorf seized Doc's new demitasse, drained it, set it back on the tray with a flourish and drew himself up.

"Tell your readers, Miss Grayling," he proclaimed, fiercely arching his eyebrows at her and actually slapping his chest, "That I, Igor Jandorf, will defeat the Machine by the living force of my human personality! Already I have offered to play it an informal game blindfold—I, who have played 50 blindfold games simultaneously! Its owners refuse me. I have challenged it also to a few games of rapid-transit—an offer no true grandmaster would dare ignore. Again they refuse me. I predict that the Machine will play like a great oaf—at least against *me*. Repeat: I, Igor Jandorf, by the living force of my human personality, will defeat the Machine. Do you have that? You can remember it?"

"Oh yes," Sandra assured him, "but there are some other questions I very much want to ask you, Mr. Jandorf."

"I am sorry, Miss Grayling, but I must clear my mind now. In ten minutes they start the clocks."

While Sandra arranged for an interview with Jandorf after the day's playing session, Doc reordered his coffee.

"One expects it of Jandorf," he explained to Sandra with a philosophic shrug when the shock-headed man was gone. "At least he didn't take your wine-and-seltzer. Or did he? One tip I have for you: don't call a chess master Mister, call him Master. They all eat it up."

"Gee, Doc, I don't know how to thank you for everything. I hope I haven't offended Mis—Master Jandorf so that he doesn't—"

"Don't worry about that. Wild horses couldn't keep Jandorf away from a press interview. You know, his rapid-transit challenge was cunning. That's a minor variety of chess where each player gets only ten seconds to make a move. Which I don't suppose would give the Machine time to look three moves ahead. Chess players would say that the Machine has a very slow sight of the board. This tournament is being played at the usual international rate of 15 moves an hour, and—"

"Is that why they've got all those crazy clocks?" Sandra interrupted.

"Oh, yes. Chess clocks measure the time each player takes in making his moves. When a player makes a move he presses a button that shuts his clock off and turns his opponent's on. If a player uses too much time, he loses as surely as if he were checkmated. Now since the Machine will almost certainly be programmed to take an equal amount of time on successive moves, a rate of 15 moves an hour means it will have 4 minutes a move—and it will need every second of them! Incidentally, it was typical Jandorf bravado to make a point of a blindfold challenge—just as if the Machine weren't playing blindfold itself. Or *is* the Machine blindfold? How do you think of it?"

"Gosh, I don't know. Say, Doc, is it really true that Master Jandorf has played 50 games at once blindfolded? I can't believe that."

"Of course not!" Doc assured her. "It was only 49 and he lost two of those and drew five. Jandorf always exaggerates. It's in his blood."

"He's one of the Russians, isn't he?" Sandra asked. "Igor?"

Doc chuckled. "Not exactly," he said gently. "He is originally a Pole and now he has Argentinian citizenship. You have a program, don't you?"

Sandra started to hunt through her pocketbook, but just then two lists of names lit up on the big electric scoreboard.

THE PLAYERS
William Angler, USA
Bela Grabo, Hungary
Ivan Jal, USSR
Igor Jandorf, Argentina
Dr. S. Krakatower, France
Vassily Lysmov, USSR
The Machine, USA (programmed by Simon Great)
Maxim Serek, USSR
Moses Sherevsky, USA
Mikhail Votbinnik, USSR
Tournament Director: Dr. Jan Vanderhoef

FIRST ROUND PAIRINGS
Sherevski vs. Serek
Jal vs. Angler
Jandorf vs. Votbinnik
Lysmov vs. Krakatower
Grabo vs. Machine

"Cripes, Doc, they all sound like they were Russians," Sandra said after a bit. "Except this Willie Angler. Oh, he's the boy wonder, isn't he?"

Doc nodded. "Not such a boy any longer, though. He's . . . Well, speak of the Devil's children . . . Miss Grayling, I have the honor of presenting to you the only grandmaster ever to have been *ex*-chess-champion of the United States while still technically a minor—Master William Augustus Angler."

A tall, sharply-dressed young man with a hatchet face pressed the old man back into his chair.

"How are you, Savvy, old boy old boy?" he demanded. "Still chasing the girls, I see."

"Please, Willie, get off me."

"Can't take it, huh?" Angler straightened up somewhat. "Hey waiter! Where's that chocolate malt? I don't want it *next* year. About that *ex*-, though. I was swindled, Savvy. I was robbed."

"Willie!" Doc said with some asperity. "Miss Grayling is a journalist. She would like to have a statement from you as to how you will play against the Machine."

Angler grinned and shook his head sadly. "Poor old Machine," he said. "I don't know why they take so much trouble polishing up that pile of tin just so that I can give it a hit in the head. I got a hatful of moves it'll burn out all its tubes trying to answer. And if it gets too fresh, how about you and me giving its low-temperature section the hotfoot, Savvy? The money WBM's putting up is okay, though. That first prize will just fit the big hole in my bank account."

"I know you haven't the time now, Master Angler," Sandra said rapidly, "but if after the playing session you could grant me—"

"Sorry, babe," Angler broke in with a wave of dismissal. "I'm dated up for two months in advance. Waiter! I'm here, not there!" And he went charging off.

Doc and Sandra looked at each other and smiled.

"Chess masters aren't exactly humble people, are they?" she said.

Doc's smile became tinged with sad understanding. "You must excuse them, though," he said. "They really get so little recognition or recompense. This tournament is an exception. And it takes a great deal of ego to play greatly."

"I suppose so. So World Business Machines is responsible for this tournament?"

"Correct. Their advertising department is interested in the prestige. They want to score a point over their great rival."

"But if the Machine plays badly it will be a black eye for them," Sandra pointed out.

"True," Doc agreed thoughtfully. "WBM must feel very sure . . . It's the prize money they've put up, of course, that's brought the world's greatest players here. Otherwise half of them would be holding off in the best temperamental-artist style. For chess players the prize money is fabulous—$35,000, with $15,000 for first place, and all expenses paid for all players. There's never been anything like it. Soviet Russia is the only country that has ever supported and rewarded her best chess players at all adequately. I think the Russian players are here because UNESCO and FIDE (that's *Federation Internationale des Echecs*—the international chess organization) are also backing the tournament. And perhaps because the Kremlin is hungry for a little prestige now that its space program is sagging."

"But if a Russian doesn't take first place it will be a black eye for them."

Doc frowned. "True, in a sense. *They* must feel very sure . . . Here they are now."

Four men were crossing the center of the hall, which was clearing, toward the tables at the other end. Doubtless they just happened to be going two by two in close formation, but it gave Sandra the feeling of a phalanx.

"The first two are Lysmov and Votbinnik," Doc told her. "It isn't often that you see the current champion of the world —Votbinnik—and an ex-champion arm in arm. There are two other persons in the tournament who have held that honor—Jal and Vanderhoef the director, way back."

"Will whoever wins this tournament become champion?"

"Oh no. That's decided by two-player matches—a very long business—after elimination tournaments between leading contenders. This tournament is a round robin: each player plays one game with every other player. That means nine rounds."

"Anyway there *are* an awful lot of Russians in the tournament," Sandra said, consulting her program. "Four out of ten have USSR after them. And Bela Grabo, Hungary—that's a satellite. And Sherevsky and Krakatower are Russian-sounding names."

"The proportion of Soviet to American entries in the tournament represents pretty fairly the general difference in playing strength between the two countries," Doc said judiciously. "Chess mastery moves from land to land with the years. Way back it was the Moslems and the Hindus and Persians. Then Italy and Spain. A little over a hundred years ago it was France and England. Then Germany, Austria and the New World. Now it's Russia—including of course the Russians who have run away from Russia. But don't think there aren't a lot of good Anglo-Saxon types who are masters of the first water. In fact, there are a lot of them here around us, though perhaps you don't think so. It's just that if you play a lot of chess you get to looking Russian. Once it probably made you look Italian. Do you see that short bald-headed man?"

"You mean the one facing the Machine and talking to Jandorf?"

"Yes. Now that's one with a lot of human interest. Moses Sherevsky. Been champion of the United States many times. A very strict Orthodox Jew. Can't play chess on Fridays or

on Saturdays before sundown." He chuckled. "Why, there's even a story going around that one rabbi told Sherevsky it would be unlawful for him to play against the Machine because it is technically a *golem*—the clay Frankenstein's monster of Hebrew legend."

Sandra asked, "What about Grabo and Krakatower?"

Doc gave a short scornful laugh. "Krakatower! Don't pay any attention to *him*. A senile has-been; it's a scandal he's been allowed to play in this tournament! He must have pulled all sorts of strings. Told them that his lifelong services to chess had won him the honor and that they had to have a member of the so-called Old Guard. Maybe he even got down on his knees and cried—and all the time his eyes on that expense money and the last-place consolation prize! Yet dreaming schizophrenically of beating them all! Please, don't get me started on Dirty Old Krakatower."

"Take it easy, Doc. He sounds like he would make an interesting article. Can you point him out to me?"

"You can tell him by his long white beard with coffee stains. I don't see it anywhere, though. Perhaps he's shaved it off for the occasion. It would be like that antique womanizer to develop senile delusions of youthfulness."

"And Grabo?" Sandra pressed, suppressing a smile at the intensity of Doc's animosity.

Doc's eyes grew thoughtful. "About Bela Grabo (Why are three out of four Hungarians named Bela?) I will tell you only this: That he is a very brilliant player and that the Machine is very lucky to have drawn him as its first opponent."

He would not amplify his statement. Sandra studied the scoreboard again.

"This Simon Great who's down as programming the Machine. He's a famous physicist, I suppose?"

"By no means. That was the trouble with some of the early chess-playing machines—they were programmed by scientists. No, Simon Great is a psychologist who at one time was a leading contender for the world's chess championship. I think WBM was surprisingly shrewd to pick him for the programming job. Let me tell you— No, better yet—"

Doc shot to his feet, stretched an arm on high and called out sharply, "Simon!"

A man some four tables away waved back and a moment later came over.

"What is it, Savilly?" he asked. "There's hardly any time, you know."

The newcomer was of middle height, compact of figure and feature, with graying hair cut short and combed sharply back.

Doc spoke his piece for Sandra.

Simon Great smiled thinly. "Sorry," he said, "but I am making no predictions and we are giving out no advance information on the programming of the Machine. As you know, I have had to fight the Players' Committee tooth and nail on all sorts of points about that and they have won most of them. I am not permitted to re-program the Machine at adjournments—only between games. (I did insist on that and get it!) And if the Machine breaks down during a game, its clock keeps running on it. My men are permitted to make repairs—if they can work fast enough."

"That makes it very tough on you," Sandra put in. "The Machine isn't allowed any weaknesses."

Great nodded soberly. "And now I must go. They've almost finished the count-down, as one of my technicians keeps on calling it. Very pleased to have met you, Miss Grayling—I'll check with our PR man on that interview. Be seeing you, Savvy."

The tiers of seats were filled now and the central space almost clear. Officials were shooing off a few knots of lingerers. Several of the grandmasters, including all four Russians, were seated at their tables. Press and company cameras were flashing. The four smaller wallboards lit up with the pieces in the opening position—white for White and red for Black. Simon Great stepped over the red velvet cord and more flash bulbs went off.

"You know, Doc," Sandra said, "I'm a dog to suggest this, but what if this whole thing were a big fake? What if Simon Great were really playing the Machine's moves? There would surely be some way for his electricians to rig—"

Doc laughed happily—and so loudly that some people at the adjoining tables frowned.

"Miss Grayling, that is a wonderful idea! I will probably steal it for a short story. I still manage to write and place a few in England. No, I do not think that is at all likely. WBM would never risk such a fraud. Great is completely out of practice for actual tournament play, though not for chess-thinking. The difference in style between a computer and a man would be evident to any expert. Great's own style is remembered and would be recognized—though, come to think of it, his style was often described as being machine-

like . . ." For a moment Doc's eyes became thoughtful. Then he smiled again. "But no, the idea is impossible. Vanderhoef as Tournament Director has played two or three games with the Machine to assure himself that it operates legitimately and has grandmaster skill."

"Did the Machine beat him?" Sandra asked.

Doc shrugged. "The scores weren't released. It was very hush-hush. But about your idea, Miss Grayling—did you ever read about Maelzel's famous chessplaying automaton of the 19th Century? That one too was supposed to work by machinery (cogs and gears, not electricity) but actually it had a man hidden inside it—your Edgar Poe exposed the fraud in a famous article. In *my* story I think the chess robot will break down while it is being demonstrated to a millionaire purchaser and the young inventor will have to win its game for it to cover up and swing the deal. Only the millionaire's daughter, who is really a better player than either of them . . . yes, yes! Your Ambrose Bierce too wrote a story about a chessplaying robot of the clickety-clank-grr kind who murdered his creator, crushing him like an iron grizzly bear when the man won a game from him. Tell me, Miss Grayling, do you find yourself imagining this Machine putting out angry tendrils to strangle its opponents, or beaming rays of death and hypnotism at them? I can imagine . . ."

While Doc chattered happily on about chessplaying robots and chess stories, Sandra found herself thinking about him. A writer of some sort evidently and a terrific chess buff. Perhaps he was an actual medical doctor. She'd read something about two or three coming over with the Russian squad. But Doc certainly didn't sound like a Soviet citizen.

He was older than she'd first assumed. She could see that now that she was listening to him less and looking at him more. Tired, too. Only his dark-circled eyes shone with unquenchable youth. A useful old guy, whoever he was. An hour ago she'd been sure she was going to muff this assignment completely and now she had it laid out cold. For the umpteenth time in her career Sandra shied away from the guilty thought that she wasn't a writer at all or even a reporter, she just used dime-a-dozen female attractiveness to rope a susceptible man (young, old, American, Russian) and pick his brain . . .

She realized suddenly that the whole hall had become very quiet.

Doc was the only person still talking and people were again looking at them disapprovingly. All five wallboards were lit up and the changed position of a few pieces showed that opening moves had been made on four of them, including the Machine's. The central space between the tiers of seats was completely clear now, except for one man hurrying across it in their direction with the rapid yet quiet, almost tip-toe walk that seemed to mark all the officials. *Like morticians' assistants,* she thought. He rapidly mounted the stairs and halted at the top to look around searchingly. His gaze lighted on their table, his eyebrows went up, and he made a beeline for Doc. Sandra wondered if she should warn him that he was about to be shushed.

The official laid a hand on Doc's shoulder. "Sir!" he said agitatedly. "Do you realize that they've started your clock, Dr. Krakatower?"

Sandra became aware that Doc was grinning at her. "Yes, it's true enough, Miss Grayling," he said. "I trust you will pardon the deception, though it was hardly one, even technically. Every word I told you about Dirty Old Krakatower is literally true. Except the long white beard—he never wore a beard after he was 35—that part was an out-and-out lie! Yes, yes! I will be along in a moment! Do not worry, the spectators will get their money's worth out of me! And WBM did not with its expense account buy my soul—that belongs to the young lady here."

Doc rose, lifted her hand and kissed it. "Thank you, mademoiselle, for a charming interlude. I hope it will be repeated. Incidentally, I should say that besides . . . (Stop pulling at me, man!—there can't be five minutes on my clock yet!) . . . that besides being Dirty Old Krakatower, grandmaster emeritus, I am also the special correspondent of the *London Times.* It is always pleasant to chat with a colleague. Please do not hesitate to use in your articles any of the ideas I tossed out, if you find them worthy—I sent in my own first dispatch two hours ago. Yes, yes, I come! Au revoir, mademoiselle!"

He was at the bottom of the stairs when Sandra jumped up and hurried to the balustrade.

"Hey, Doc!" she called.

He turned.

"Good luck!" she shouted and waved.

He kissed his hand to her and went on.

People glared at her then and a horrified official came hurrying. Sandra made big brightened eyes at him, but she couldn't quite hide her grin.

IV

Sitzfleisch (which roughly means endurance—"sitting flesh" or "buttock meat") is the quality needed above all others by tournament chess players—and their audiences.

After Sandra had watched the games (the players' faces, rather—she had a really good pair of zoomer glasses) for a half hour or so, she had gone to her hotel room, written her first article (interview with the famous Dr. Krakatower), sent it in and then come back to the hall to see how the games had turned out.

They were still going on, all five of them.

The press section was full, but two boys and a girl of highschool age obligingly made room for Sandra on the top tier of seats and she tuned in on their whispered conversation. The jargon was recognizably related to that which she'd gotten a dose of on the floor, but gamier. Players did not sacrifice pawns, they sacked them. No one was ever defeated, only busted. Pieces weren't lost but blown. The Ruy Lopez was the Dirty Old *Rooay*—and incidentally a certain set of opening moves named after a long-departed Spanish churchman, she now discovered from Dave, Bill and Judy, whose sympathetic help she won by frequent loans of her zoomer glasses.

The four-hour time control point—two hours and 30 moves for each player—had been passed while she was sending in her article, she learned, and they were well on their way toward the next control point—an hour more and 15 moves for each player—after which unfinished games would be adjourned and continued at a special morning session. Sherevsky had had to make 15 moves in two minutes after taking an hour earlier on just one move. But that was nothing out of the ordinary, Dave had assured her in the same breath, Sherevsky was always letting himself get into "fantastic time-pressure" and then wriggling out of it brilliantly. He was apparently headed for a win over Serek. *Score one for the USA over the USSR,* Sandra thought proudly.

Votbinnik had Jandorf practically in *Zugzwang* (his

pieces all tied up, Bill explained) and the Argentinian would be busted shortly. Through the glasses Sandra could see Jandorf's thick chest rise and fall as he glared murderously at the board in front of him. By contrast Votbinnik looked like a man lost in reverie.

Dr. Krakatower had lost a pawn to Lysmov but was hanging on grimly. However, Dave would not give a plugged nickel for his chances against the former world's champion, because "those old ones always weaken in the sixth hour."

"You for-get the bio-logical mir-acle of Doc-tor Las-ker," Bill and Judy chanted as one.

"Shut up," Dave warned them. An official glared angrily from the floor and shook a finger. Much later Sandra discovered that Dr. Emanuel Lasker was a philosopher-mathematician who, after holding the world's championship for 26 years, had won a very strong tournament (New York 1924) at the age of 56 and later almost won another (Moscow 1935) at the age of 67.

Sandra studied Doc's face carefully through her glasses. He looked terribly tired now, almost a death's head. Something tightened in her chest and she looked away quickly.

The Angler-Jal and Gravo-Machine games were still ding-dong contests, Dave told her. If anything, Grabo had a slight advantage. The Machine was "on the move," meaning that Grabo had just made a move and was waiting the automaton's reply.

The Hungarian was about the most restless "waiter" Sandra could imagine. He twisted his long legs constantly and writhed his shoulders and about every five seconds he ran his hands back through his unkempt tassle of hair.

Once he yawned selfconsciously, straightened himself and sat very compactly. But almost immediately he was writhing again.

The Machine had its own mannerisms, if you could call them that. Its dim, unobtrusive telltale lights were winking on and off in a fairly rapid, random pattern. Sandra got the impression that from time to time Grabo's eyes were trying to follow their blinking, like a man watching fireflies.

Simon Great sat impassively behind a bare table next to the Machine, his five gray-smocked technicians grouped around him.

A flushed-faced, tall, distinguished-looking elderly gentleman was standing by the Machine's console. Dave told

Sandra it was Dr. Vanderhoef, the Tournament Director, one-time champion of the world.

"Another old potzer like Krakatower, but with sense enough to know when he's licked," Bill characterized harshly.

"Youth, ah, un-van-quish-able youth," Judy chanted happily by herself. "Flashing like a meteor across the chess firma-ment. Morphy, Angler, Judy Kaplan . . ."

"Shut up! They really will throw us out," Dave warned her and then explained in whispers to Sandra that Vanderhoef and his assistants had the nervous-making job of feeding into the Machine the moves made by its opponent, "so everyone will know it's on the level, I guess." He added, "It means the Machine loses a few seconds every move, between the time Grabo punches the clock and the time Vanderhoef gets the move fed into the Machine."

Sandra nodded. The players were making it as hard on the Machine as possible, she decided with a small rush of sympathy.

Suddenly there was a tiny movement of the gadget attached from the Machine to the clocks on Grabo's table and a faint *click*. But Grabo almost leapt out of his skin.

Simultaneously a red castle-topped piece (one of the Machine's rooks, Sandra was informed) moved four squares sideways on the big electric board above the Machine. An official beside Dr. Vanderhoef went over to Grabo's board and carefully moved the corresponding piece. Grabo seemed about to make some complaint, then apparently thought better of it and plunged into brooding cogitation over the board, elbows on the table, both hands holding his head and fiercely massaging his scalp.

The Machine let loose with an unusually rapid flurry of blinking. Grabo straightened up, seemed again about to make a complaint, then once more to repress the impulse. Finally he moved a piece and punched his clock. Dr. Vanderhoef immediately flipped four levers on the Machine's console and Grabo's move appeared on the electric board.

Grabo sprang up, went over to the red velvet cord and motioned agitatedly to Vanderhoef.

There was a short conference, inaudible at the distance, during which Grabo waved his arms and Vanderhoef grew more flushed. Finally the latter went over to Simon Great and said something, apparently with some hesitancy. But Great smiled obligingly, sprang to his feet, and in turn spoke to

his technicians, who immediately fetched and unfolded several large screens and set them in front of the Machine, masking the blinking lights. *Blindfolding it,* Sandra found herself thinking.

Dave chuckled. "That's already happened once while you were out," he told Sandra. "I guess seeing the lights blinking makes Grabo nervous. But then *not* seeing them makes him nervous. Just watch."

"The Machine has its own mysterious pow-wow-wers," Judy chanted.

"That's what you think," Bill told her. "Did you know that Willie Angler has hired Evil Eye Bixel out of Brooklyn to put the whammy on the Machine? S'fact."

". . . pow-wow-wers unknown to mere mortals of flesh and blood—"

"Shut up!" Dave hissed. "Now you've done it. Here comes old Eagle Eye. Look, I don't know you two. I'm with this lady here."

Bela Grabo was suffering acute tortures. He had a winning attack, he knew it. The Machine was counter-attacking, but unstrategically, desperately, in the style of a Frank Marshall complicating the issue and hoping for a swindle. All Grabo had to do, he knew, was keep his head and *not blunder*—not throw away a queen, say, as he had to old Vanderhoef at Brussels, or overlook a mate in two, as he had against Sherevsky at Tel Aviv. The memory of those unutterably black moments and a dozen more like them returned to haunt him. Never if he lived a thousand years would he be free of them.

For the tenth time in the last two minutes he glanced at his clock. He had fifteen minutes in which to make five moves. He wasn't in time-pressure, he must remember that. He mustn't make a move on impulse, he mustn't let his treacherous hand leap out without waiting for instructions from its guiding brain.

First prize in this tournament meant incredible wealth—transportation money and hotel bills for more than a score of future tournaments. But more than that, it was one more chance to blazon before the world his true superiority rather than the fading reputation of it. ". . . Bela Grabo, brilliant but erratic . . ." Perhaps his last chance.

When, in the name of Heaven, was the Machine going to make its next move? Surely it had already taken more than

four minutes! But a glance at its clock showed him that hardly half that time had gone by. He decided he had made a mistake in asking again for the screens. It was easier to watch those damned lights blink than have them blink in his imagination.

Oh, if chess could only be played in intergalactic space, in the black privacy of one's thoughts. But there had to be the physical presence of the opponent with his (possibly deliberate) unnerving mannerisms—Lasker and his cigar, Capablanca and his red necktie, Nimzowitsch and her nercous contortions (very like Bela Grabo's, though the latter did not see it that way). And now this ghastly flashing, humming, stinking, button-banging metal monster!

Actually, he told himself, he was being asked to play two opponents, the Machine and Simon Great, a sort of consultation team. It wasn't fair!

The Machine hammered its button and rammed its queen across the electric board. In Grabo's imagination it was like an explosion.

Grabo held onto his nerves with an effort and plunged into a maze of calculations.

Once he came to, like a man who has been asleep, to realize that he was wondering whether the lights were still blinking behind the screens while he was making his move. Did the Machine really analyze at such times or were the lights just an empty trick? He forced his mind back to the problems of the game, decided on his move, checked the board twice for any violent move he might have missed, noted on his clock that he'd taken five minutes, checked the board again very rapidly and then put out his hand and made his move—with the fiercely suspicious air of a boss compelled to send an extremely unreliable underling on an all-important errand.

Then he punched his clock, sprang to his feet, and once more waved for Vanderhoef.

Thirty seconds later the Tournament Director, very red-faced now, was saying in a low voice, almost pleadingly, "But Bela, I cannot keep asking them to change the screens. Already they have been up twice and down once to please you. Moving them disturbs the other players and surely isn't good for your own peace of mind. Oh, Bela, my dear Bela—"

Vanderhoef broke off. Grabo knew he had been going to say something improper but from the heart, such as, "For

God's sake don't blow this game out of nervousness now that you have a win in sight"—and this sympathy somehow made the Hungarian furious.

"I have other complaints which I will make formally after the game," he said harshly, quivering with rage. "It is a disgrace the way that mechanism punches the time-clock button. It will crack the case! The Machine never stops humming! And it stinks of ozone and hot metal, as if it were about to explode!"

"It *cannot* explode, Bela. Please!"

"No, but it threatens to! And you know a threat is always more effective than an actual attack! As for the screens, they must be taken down at once, I demand it!"

"Very well, Bela, very well, it will be done. Compose yourself."

Grabo did not at once return to his table—he could not have endured to sit still for the moment—but paced along the line of tables, snatching looks at the other games in progress. When he looked back at the big electric board, he saw that the Machine had made a move although he hadn't heard it punch the clock. He rushed back and studied the board without sitting down. Why, the Machine had made a *stupid* move, he saw with a rush of exultation. At that moment the last screen being folded started to fall over, but one of the gray-smocked men caught it deftly. Grabo flinched and his hand darted out and moved a piece.

He heard someone gasp. Vanderhoef.

It got very quiet. The four soft clicks of the move being fed into the Machine were like the beat of a muffled drum.

There was a buzzing in Grabo's ears. He looked down at the board in horror.

The Machine blinked, blinked once more and then, although barely twenty seconds had elapsed, moved a rook.

On the glassy gray margin above the Machine's electric board, large red words flamed on:

CHECK! AND MATE IN THREE

Up in the stands Dave squeezed Sandra's arm. "He's done it! He's let himself be swindled."

"You mean the Machine has beaten Grabo?" Sandra asked.

"What else?"

"Can you be sure? Just like that?"

"Of cour . . . Wait a second . . . Yes, I'm sure."

"Mated in three like a potzer," Bill confirmed.

"The poor old boob," Judy sighed.

Down on the floor Bela Grabo sagged. The assistant director moved toward him quickly. But then the Hungarian straightened himself a little.

"I resign," he said softly.

The red words at the top of the board were wiped out and briefly replaced, in white, by:

THANK YOU FOR A GOOD GAME

And then a third statement, also in white, flashed on for a few seconds:

YOU HAD BAD LUCK

Bela Grabo clenched his fists and bit his teeth. Even *the Machine* was being sorry for him!

He stiffly walked out of the hall. It was a long, long walk.

V

Adjournment time neared. Serek, the exchange down but with considerable time on his clock, sealed his forty-sixth move against Sherevsky and handed the envelope to Vanderhoef. It would be opened when the game was resumed at the morning session. Dr. Krakatower studied the position on his board and then quietly tipped over his king. He sat there for a moment as if he hadn't the strength to rise. Then he shook himself a little, smiled, got up, clasped hands briefly with Lysmov and wandered over to watch the Angler-Jal game.

Jandorf had resigned his game to Votbinnik some minutes ago, rather more surlily.

After a while Angler sealed a move, handing it to Vanderhoef with a grin just as the little red flag dropped on his clock, indicating he'd used every second of his time.

Up in the stands Sandra worked her shoulders to get a kink out of her back. She'd noticed several newsmen hurrying off to report in the Machine's first win. She was thankful that her job was limited to special articles.

"Chess is a pretty intense game," she remarked to Dave.

He nodded. "It's a killer. I don't expect to live beyond forty myself."

"Thirty," Bill said.

"Twenty-five is enough time to be a meteor," said Judy.

Sandra thought to herself: *the Unbeat Generation.*

Next day Sherevsky played the Machine to a dead-level ending. Simon Great offered a draw for the Machine (over an unsuccessful interfering protest from Jandorf that this constituted making a move for the Machine) but Sherevsky refused and sealed his move.

"He wants to have it proved to him that the Machine can play end games," Dave commented to Sandra up in the stands. "I don't blame him."

At the beginning of today's session Sandra had noticed that Bill and Judy were following each game in a very new-looking book they shared jealously between them. *Won't look new for long,* Sandra had thought.

"That's the 'Bible' they got there," Dave had explained. "MCO—*Modern Chess Openings.* It lists all the best open-moves in chess, thousands and thousands of variations. That is, what masters *think* are the best moves. The moves that have won in the past, really. We chipped in together to buy the latest edition—the 13th—just hot off the press," he had finished proudly.

Now with the Machine-Sherevsky ending the center of interest, the kids were consulting another book, one with grimy, dog-eared pages.

"That's the 'New Testament'—*Basic Chess Endings,*" Dave said when he noticed her looking. "There's so much you must know in endings that it's amazing the Machine can play them at all. I guess as the pieces get fewer it starts to look deeper."

Sandra nodded. She was feeling virtuous. She had got her interview with Jandorf and then this morning one with Grabo ("How it Feels to Have a Machine Out-Think You"). The latter had made her think of herself as a real vulture of the press, circling over the doomed. The Hungarian had seemed in a positively suicidal depression.

One newspaper article made much of the Machine's "psychological tactics," hinting that the blinking lights were designed to hypnotize opponents. The general press coverage was somewhat startling. A game that in America normally rated only a fine-print column in the back sections of

a very few Sunday papers was now getting boxes on the front page. The defeat of a man by a machine seemed everywhere to awaken nervous feelings of insecurity, like the launching of the first sputnik.

Sandra had rather hesitantly sought out Dr. Krakatower during the close of the morning session of play, still feeling a little guilty from her interview with Grabo. But Doc had seemed happy to see her and quite recovered from last night's defeat, though when she had addressed him as "Master Krakatower" he had winced and said, "Please, not that!" Another session of coffee and wine-and-seltzer had resulted in her getting an introduction to her first Soviet grandmaster, Serek, who had proved to be unexpectedly charming. He had just managed to draw his game with Sherevsky (to the great amazement of the kibitzers, Sandra learned) and was most obliging about arranging for an interview.

Not to be outdone in gallantry, Doc had insisted on escorting Sandra to her seat in the stands—at the price of once more losing a couple of minutes on his clock. As a result her stock went up considerably with Dave, Bill and Judy. Thereafter they treated anything she had to say with almost annoying deference—Bill especially, probably in penance for his thoughtless cracks at Doc. Sandra later came to suspect that the kids had privately decided that she was Dr. Krakatower's mistress—probably a new one because she was so scandalously ignorant of chess. She did not disillusion them.

Doc lost again in the second round—to Jal.

In the third round Lysmov defeated the Machine in 27 moves. There was a flaring of flashbulbs, a rush of newsmen to the phones, jabbering in the stands and much comment and analysis that was way over Sandra's head—except she got the impression that Lysmov had done something tricky.

The general emotional reacton in America, as reflected by the newspapers, was not too happy. One read between the lines that for the Machine to beat a man was bad, but for a Russian to beat an American machine was worse. A widely-read sports columnist, two football coaches, and several rural politicians announced that chess was a morbid game played only by weirdies. Despite these thick-chested he-man statements, the elusive mood of insecurity deepened.

Besides the excitement of the Lysmov win, a squabble

had arisen in connection with the Machine's still-unfinished end game with Sherevsky, which had been continued through one morning session and was now headed for another.

Finally there were rumors that World Business Machines was planning to replace Simon Great with a nationally famous physicist.

Sandra begged Doc to try to explain it all to her in kindergarten language. She was feeling uncertain of herself again and quite subdued after being completely rebuffed in her efforts to get an interview with Lysmov, who had fled her as if she were a threat to his Soviet virtue.

Doc on the other hand was quite vivacious, cheered by his third-round draw with Jandorf.

"Most willingly, my dear," he said. "Have you ever noticed that kindergarten language can be far honester than the adult tongues? Fewer fictions. Well, several of us hashed over the Lysmov game until three o'clock this morning. Lysmov wouldn't, though. Neither would Votbinnik or Jal. You see, I have my communication problems with the Russians too.

"We finally decided that Lysmov had managed to guess with complete accuracy both the depth at which the Machine is analyzing in the opening and middle game (ten moves ahead instead of eight, we think—a prodigious achievement!) and also the main value scale in terms of which the Machine selects its move.

"Having that information, Lysmov managed to play into a combination which would give the Machine a maximum plus value in its value scale (win of Lysmov's queen, it was) after ten moves but a checkmate for Lysmov on his second move *after* the first ten. A human chess master would have seen a trap like that, but the Machine could not, because Lysmov was maneuvering in an area that did not exist for the Machine's perfect but limited mind. Of course the Machine changed its tactics after the first three moves of the ten had been played—it could see the checkmate then—but by that time it was too late for it to avert a disastrous loss of material. It was tricky of Lysmov, but completely fair. After this we'll all be watching for the opportunity to play the same sort of trick on the Machine.

"Lysmov was the first of us to realize fully that *we are not playing against a metal monster but against a certain kind of programming.* If there are any weaknesses we can spot in that programming, we can win. Very much in the

same way that we can again and again defeat a flesh-and-blood player when we discover that he consistently attacks without having an advantage in position or is regularly over-cautious about launching a counter-attack when he himself is attacked without justification."

Sandra nodded eagerly. "So from now on your chances of beating the Machine should keep improving, shouldn't they? I mean as you find out more and more about the programming."

Doc smiled. "You forget," he said gently, "that Simon Great can change the programming before each new game. Now I see why he fought so hard for that point."

"Oh. Say, Doc, what's this about the Sherevsky end game?"

"You are picking up the language, aren't you?" he observed. "Sherevsky got a little angry when he discovered that Great had the Machine programmed to analyze steadily on the next move after an adjournment until the game was resumed next morning. Sherevsky questioned whether it was fair for the Machine to 'think' all night while its opponent had to get some rest. Vanderhoef decided for the Machine, though Sherevsky may carry the protest to FIDE.

"Bah— I think Great wants us to get heated up over such minor matters, just as he is happy (and oh so obliging!) when we complain about how the Machine blinks or hums or smells. It keeps our minds off the main business of trying to outguess his programming. Incidentally, that is one thing we decided last night—Sherevsky, Willie Angler, Jandorf, Serek, and myself—that we are all going to have to learn to play the Machine without letting it get on our nerves and without asking to be protected from it. As Willie puts it, 'So suppose it sounds like a boiler factory even—okay, you can think in a boiler factory.' Myself, I am not so sure of that, but his spirit is right."

Sandra felt herself perking up as a new article began to shape itself in her mind. She said, "And what about WBM replacing Simon Great?"

Again Doc smiled. "I think, my dear, that you can safely dismiss that as just a rumor. I think that Simon Great has just begun to fight."

VI

Round Four saw the Machine spring the first of its surprises.

It had finally forced a draw against Sherevsky in the morning session, ending the long second-round game, and now was matched against Votbinnik.

The Machine opened Pawn to King Four, Votbinnik replied Pawn to King Three.

"The French Defense, Binny's favorite," Dave muttered and they settled back for the Machine's customary four-minute wait.

Instead the Machine moved at once and punched its clock.

Sandra, studying Votbinnik through her glasses, decided that the Russian grandmaster looked just a trifle startled. Then he made his move.

Once again the Machine responded instantly.

There was a flurry of comment from the stands and a scurrying-about of officials to shush it. Meanwhile the Machine continued to make its moves at better than rapid-transit speed, although Votbinnik soon began to take rather more time on his.

The upshot was that the Machine made eleven moves before it started to take time to 'think' at all.

Sandra clamored so excitedly to Dave for an explanation that she had two officials waving at her angrily.

As soon as he dared, Dave whispered, "Great must have banked on Votbinnik playing the French—almost always does—and fed all the variations of the French into the Machine's 'memory' from MCO and maybe some other books. So long as Votbinnik stuck to a known variation of the French, why, the Machine could play from memory without analyzing at all. Then when a strange move came along—one that wasn't in its memory—only on the twelfth move yet!—the Machine went back to analyzing, only now it's taking longer and going deeper because it's got more time—six minutes to move, about. The only thing I wonder is why Great didn't have the Machine do it in the first three games. It seems so obvious."

Sandra ticketed that in her mind as a question for Doc. She slipped off to her room to write her "Don't Let a Robot Get Your Goat" article (drawing heavily on Doc's observa-

tions) and got back to the stands twenty minutes before the second time-control point. It was becoming a regular routine.

Votbinnik was a knight down—almost certainly busted, Dave explained.

"It got terrifically complicated while you were gone," he said. "A real Votbinnik position."

"Only the Machine out-binniked him," Bill finished.

Judy hummed Beethoven's "Funeral March for the Death of a Hero."

Nevertheless Votbinnik did not resign. The Machine sealed a move. Its board blacked out and Vanderhoef, with one of his assistants standing beside him to witness, privately read the move off a small indicator on the console. Tomorrow he would feed the move back into the Machine when the play was resumed at the morning session.

Doc sealed a move too although he was two pawns down in his game against Grabo and looked tired to death.

"They don't give up easily, do they?" Sandra observed to Dave. "They must really love the game. Or do they hate it?"

"When you get to psychology it's all beyond me," Dave replied. "Ask me something else."

Sandra smiled. "Thank you, Dave," she said. "I will."

Come the morning session, Votbinnik played on for a dozen moves, then resigned.

A little later Doc managed to draw his game with Grabo by perpetual check. He caught sight of Sandra coming down from the stands and waved to her, then made the motions of drinking.

Now he looks almost like a boy, Sandra thought as she joined him.

"Say, Doc," she asked when they had secured a table, "why is a rook worth more than a bishop?"

He darted a suspicious glance at her. "That is not your kind of question," he said sternly. "Exactly what have you been up to?"

Sandra confessed that she had asked Dave to teach her how to play chess.

"I knew those children would corrupt you," Doc said somberly. "Look, my dear, if you learn to play chess you won't be able to write your clever little articles about it. Besides, as I warned you the first day, chess is a madness.

Women are ordinarily immune, but that doesn't justify you taking chances with your sanity."

"But I've kind of gotten interested, watching the tournament," Sandra objected. "At least I'd like to know how the pieces move."

"Stop!" Doc commanded. "You're already in danger. Direct your mind somewhere else. Ask me a sensible, down-to-earth journalist's question—something completely irrational!"

"Okay, why didn't Simon Great have the Machine set to play the openings fast in the first three games?"

"Hah! I think Great plays Lasker-chess in his programming. He hides his strength and tries to win no more easily than he has to, so he will have resources in reserve. The Machine loses to Lysmov and immediately starts playing more strongly—the psychological impression made on the other players by such tactics is formidable."

"But the Machine isn't ahead yet?"

"No, of course not. After four rounds Lysmov is leading the tournament with 3½–½, meaning 3½ in the win column and ½ in the loss column . . ."

"How do you half win a game of chess? Or half lose one?" Sandra interrupted.

"By drawing a game—playing to a tie. Lysmov's 3½–½ is notational shorthand for three wins and a draw. Understand? My dear, I don't usually have to explain things to you in such detail."

"I just didn't want you to think I was learning too much about chess."

"Ho! Well, to get on with the score after four rounds, Angler and Votbinnik both have 3–1, while the Machine is bracketed at 2½–1½ with Jal. But the Machine has created an impression of strength, as if it were all set to come from behind with a rush." He shook his head. "At the moment, my dear," he said, "I feel very pessimistic about the chances of neurons against relays in this tournament. Relays don't panic and fag. But the oddest thing . . ."

"Yes?" Sandra prompted.

"Well, the oddest thing is that the Machine doesn't play 'like a machine' at all. It uses dynamic strategy, the kind we sometimes call 'Russian', complicating each position as much as possible and creating maximum tension. But that too is a matter of the programming . . ."

Doc's foreboding was fulfilled as round followed hard-fought round. In the next five days (there was a weekend recess) the Machine successively smashed Jandorf, Serek and Jal and after seven rounds was out in front by a full point.

Jandorf, evidently impressed by the Machine's flawless opening play against Votbinnik, chose an inferior line in the Ruy Lopez to get the Machine "out of the books." Perhaps he hoped that the Machine would go on blindly making book moves, but the Machine did not oblige. It immediately showed its play, "thought hard" and annihilated the Argentinian in 25 moves.

Doc commented, "The Wild Bull of the Pampas tried to use the living force of his human personality to pull a fast one and swindle the Machine. Only the Machine didn't swindle."

Against Jal, the Machine used a new wrinkle. It used a variable amount of time on moves, apparently according to how difficult it "judged" the position to be.

When Serek got a poor pawn-position the Machine simplified the game relentlessly, suddenly discarding its hitherto "Russian" strategy. "It plays like anything but a machine," Doc commented. "We know the reason all too well—Simon Great—but doing something about it is something else again. Great is hitting at our individual weaknesses wonderfully well. Though I think I could play brilliant psychological chess myself if I had a machine to do the detail work." Doc sounded a bit wistful.

The audiences grew in size and in expensiveness of wardrobe, though most of the cafe society types made their visits fleeting ones. Additional stands were erected. A hard-liquor bar was put in and then taken out. The problem of keeping reasonable order and quiet became an unending one for Vanderhoef, who had to ask for more "hushers." The number of scientists and computer men, Navy, Army and Space Force uniforms were more in evidence. Dave and Bill turned up one morning with a three-dimensional chess set of transparent plastic and staggered Sandra by assuring her that most bright young space scientists were moderately adept at this 512-square game.

Sandra heard that WBM had snagged a big order from the War Department. She also heard that a Syndicate man had turned up with a book on the tournament, taking bets

from the more heavily heeled types and that a detective was circulating about, trying to spot him.

The newspapers kept up their front-page reporting, most of the writers personalizing the Machine heavily and rather too cutely. Several of the papers started regular chess columns and "How to Play Chess" features. There was a flurry of pictures of movie starlets and such sitting at chess boards. Hollywood revealed plans for two chess movies: "They Made Her a Black Pawn" and "The Monster From King Rook Square." Chess novelties and costume jewelry appeared. The United States Chess Federation proudly reported a phenomenal rise in membership.

Sandra learned enough chess to be able to blunder through a game with Dave without attempting more than one illegal move in five, to avoid the Scholar's Mate most of the time and to be able to checkmate with two rooks though not with one. Judy had asked her, "Is *he* pleased that you're learning chess?"

Sandra had replied, "No, he thinks it is a madness." The kids had all whooped at that and Dave had said, "How right he is!"

Sandra was scraping the bottom of the barrel for topics for her articles, but then it occurred to her to write about the kids, which worked out nicely, and that led to a humorous article "Chess Is for Brains" about her own efforts to learn the game, and for the nth time in her career she thought of herself as practically a columnist and was accordingly elated.

After his two draws, Doc lost three games in a row and still had the Machine to face and then Sherevsky. His 1–6 score gave him undisputed possession of last place. He grew very depressed. He still made a point of squiring her about before the playing sessions, but she had to make most of the conversation. His rare flashes of humor were rather macabre.

"They have Dirty Old Krakatower locked in the cellar," he muttered just before the start of the next to the last round, "and now they send the robot down to destroy him."

"Just the same, Doc," Sandra told him, "good luck."

Doc shook his head. "Against a man luck might help. But against a Machine?"

"It's not the Machine you're playing, but the programming. Remember?"

"Yes, but it's the Machine that doesn't make the mistake.

And a mistake is what I need most of all today. Somebody else's."

Doc must have looked very dispirited and tired when he left Sandra in the stands, for Judy (Dave and Bill not having arrived yet) asked in a confidential, womanly sort of voice, "What do you do for him when he's so unhappy?"

"Oh, I'm especially passionate," Sandra heard herself answer.

"Is that good for him?" Judy demanded doubtfully.

"Sh!" Sandra said, somewhat aghast at her irresponsibility, and wondered if *she* were getting tournament-nerves. "Sh, they're starting the clocks."

VII

Krakatower had lost two pawns when the first time-control point arrived and was intending to resign on his 31st move when the Machine broke down. Three of its pieces moved on the electric board at once, then the board went dark and all the lights on the console went out except five which started winking like angry red eyes. The gray-smocked men around Simon Great sprang silently into action, filing around back of the console. It was the first work anyone had seen them do except move screens around and fetch each other coffee. Vanderhoef hovered anxiously. Some flash bulbs went off. Vanderhoef shook his fist at the photographers. Simon Great did nothing. The Machine's clock ticked on. Doc watched for a while and then fell asleep.

When Vanderhoef jogged him awake, the Machine had just made its next move, but the repair-job had taken 50 minutes. As a result the Machine had to make 15 moves in 10 minutes. At 40 seconds a move it played like a dub whose general lack of skill was complicated by a touch of insanity. On his 43rd move Doc shrugged his shoulders apologetically and announced mate in four. There were more flashes. Vanderhoef shook his fist again. The machine flashed:

YOU PLAYED BRILLIANTLY. CONGRATULATIONS!

Afterwards Doc said sourly to Sandra, "And *that* was one

big lie—a child could have beat the Machine with that time advantage. Oh, what an ironic glory the gods reserved for Krakatower's dotage—to vanquish a broken-down computer! Only one good thing about it—that it didn't happen while it was playing one of the Russians, or someone would surely have whispered *sabotage*. And that is something of which they do not accuse Dirty Old Krakatower, because they are sure he has not got the brains even to think to sprinkle a little magnetic oxide powder in the Machine's memory box. Bah!"

Just the same he seemed considerably more cheerful.

Sandra said guilelessly, "Winning a game means nothing to you chess players, does it, unless you really do it by your own brilliancy?"

Doc looked solemn for a moment, then he started to chuckle. "You are getting altogether too smart, Miss Sandra Lea Grayling," he said. "Yes, yes—a chess player is happy to win in any barely legitimate way he can, by an earthquake if necessary, or his opponent sickening before he does from the bubonic plague. So—I confess it to you—I was very happy to chalk up my utterly undeserved win over the luckless Machine."

"Which incidentally makes it anybody's tournament again, doesn't it, Doc?"

"Not exactly." Doc gave a wry little headshake. "We can't expect another fluke. After all, the Machine has functioned perfectly seven games out of eight, and you can bet the WBM men will be checking it all night, especially since it has no adjourned games to work on. Tomorrow it plays Willie Angler, but judging from the way it beat Votbinnik and Jal, it should have a definite edge on Willie. If it beats him, then only Votbinnik has a chance for a tie and to do that he must defeat Lysmov. Which will be most difficult."

"Well," Sandra said, "don't you think that Lysmov might just kind of let himself be beaten, to make sure a Russian gets first place or at least ties for it?"

Doc shook his head emphatically. "There are many things a man, even a chess master, will do to serve his state, but party loyalty doesn't go that deep. Look, here is the standing of the players after eight rounds." He handed Sandra a penciled list.

ONE ROUND TO GO

Player	*Wins*	*Losses*
Machine	5½	2½
Votbinnik	5½	2½
Angler	5	3
Jal	4½	3½
Lysmov	4½	3½
Serek	4½	3½
Sherevsky	4	4
Jandorf	2½	5½
Grabo	2	6
Krakatower	2	6

LAST ROUND PAIRINGS

Machine vs. Angler
Votbinnik vs. Lysmov
Jal vs. Serek
Sherevsky vs. Krakatower
Jandorf vs. Grabo

After studying the list for a while, Sandra said, "Hey, even Angler could come out first, couldn't he, if he beat the Machine and Votbinnik lost to Lysmov?"

"Could, could—yes. But I'm afraid that's hoping for too much, barring another breakdown. To tell the truth, dear, the Machine is simply too good for all of us. If it were only a little faster (and these technological improvements always come) it would outclass us completely. We are at that fleeting moment of balance when genius is almost good enough to equal mechanism. It makes me feel sad, but proud too in a morbid fashion, to think that I am in at the death of grandmaster chess. Oh, I suppose the game will always be played, but it won't ever be quite the same." He blew out a breath and shrugged his shoulders.

"As for Willie, he's a good one and he'll give the Machine a long hard fight, you can depend on it. He might conceivably even draw."

He touched Sandra's arm. "Cheer up, my dear," he said. "You should remind yourself that a victory for the Machine is still a victory for the USA."

Doc's prediction about a long hard fight was decidedly not fulfilled.

Having White, the Machine opened Pawn to King Four and Angler went into the Sicilian Defense. For the first twelve moves on each side both adversaries pushed their pieces and tapped their clocks at such lightning speed (Vanderhoef feeding in Angler's moves swiftly) that up in the stands Bill and Judy were still flipping pages madly in their hunt for the right column in MCO.

The Machine made its thirteenth move, still at blitz tempo.

"Bishop takes Pawn, check, and mate in three!" Willie announced very loudly, made the move, banged his clock and sat back.

There was a collective gasp-and-gabble from the stands.

Dave squeezed Sandra's arm hard. Then, for once forgetting that he was Dr. Caution, he demanded loudly of Bill and Judy, "Have you two idiots found that column yet? *The Machine's thirteenth move is a boner!*"

Pinning down the reference with a fingernail, Judy cried, "Yes! Here it is on page 161 in footnote (e) (2) (B). Dave, *that same thirteenth move for White is in the book!* But Black replies Knight to Queen two, not Bishop takes Pawn, check. And three moves later the book gives White a plus value."

"What the heck, it can't be," Bill asserted.

"But it *is*. Check for yourself. *That boner is in the book.*"

"Shut up, everybody!" Dave ordered, clapping his hands to his face. When he dropped them a moment later his eyes gleamed. "I got it now! Angler figured they were using the latest edition of MCO to program the Machine on openings, he found an editorial error and then he deliberately played the Machine into that variation!"

Dave practically shouted his last words, but that attracted no attention as at that moment the whole hall was the noisiest it had been throughout the tournament. It simmered down somewhat as the Machine flashed a move.

Angler replied instantly.

The Machine replied almost as soon as Angler's move was fed into it.

Angler moved again, his move was fed into the Machine and the Machine flashed:

I AM CHECKMATED. CONGRATULATIONS!

VIII

Next morning Sandra heard Dave's guess confirmed by both Angler and Great. Doc had spotted them having coffee and a malt together and he and Sandra joined them.

Doc was acting jubilant, having just drawn his adjourned game with Sherevsky, which meant, since Jandorf had beaten Grabo, that he was in undisputed possession of Ninth Place. They were all waiting for the finish of the Votbinnik-Lysmov game, which would decide the final standing of the leaders. Willie Angler was complacent and Simon Great was serene and at last a little more talkative.

"You know, Willie," the psychologist said, "I was afraid that one of you boys would figure out something like that. That was the chief reason I didn't have the Machine use the programmed openings until Lysmov's win forced me to. *I* couldn't check every opening line in MCO and the *Archives* and *Shakhmaty*. There wasn't time. As it was, we had a dozen typists and proofreaders busy for weeks preparing that part of the programming and making sure it was accurate as far as following the books went. Tell the truth now, Willie, how many friends did you have hunting for flaws in the latest edition of MCO?"

Willie grinned. "Your unlucky 13th. Well, that's my secret. Though I've always said that anyone joining the Willie Angler Fan Club ought to expect to have to pay some day for the privilege. They're sharp, those little guys, and I work their tails off."

Simon Great laughed and said to Sandra, "Your young friend Dave was pretty sharp himself to deduce what had happened so quickly. Willie, you ought to have him in the Bleeker Street Irregulars."

Sandra said. "I get the impression he's planning to start a club of his own."

Angler snorted. "That's the one trouble with *my* little guys. They're all waiting to topple me."

Simon Great said, "Well, so long as Willie is passing up Dave, I want to talk to him. It takes real courage in a youngster to question authority."

"How should he get in touch with you?" Sandra asked.

While Great told her, Willie studied them frowningly.

"Sir, are you planning to stick in this chess-programming racket?" he demanded.

Simon Great did not answer the question. "You try telling me something, Willie," he said. "Have you been approached the last couple of days by IBM?"

"You mean asking me to take over your job?"

"I said *I*BM, Willie."

"Oh." Willie's grin became a tight one. "I'm not talking."

There was a flurry of sound and movement around the playing tables. Willie sprang up.

"Lysmov's agreed to a draw!" he informed them a moment later. "The gangster!"

"Gangster because he puts you in equal first place with Votbinnik, both of you ahead of the Machine?" Great inquired gently.

"Ahh, he could have beat Binny, giving me sole first. A Russian gangster!"

Doc shook a finger. "Lysmov could also have *lost* to Votbinnik, Willie, putting you in second place."

"Don't think evil thoughts. So long, pals."

As Angler clattered down the stairs, Simon Great signed the waiter for more coffee, lit a fresh cigarette, took a deep drag and leaned back.

"You know," he said, "it's a great relief not to have to impersonate the hyperconfident programmer for a while. Being a psychologist has spoiled me for that sort of thing. I'm not as good as I once was at beating people over the head with my ego."

"You didn't do too badly," Doc said.

"Thanks. Actually, WBM is very much pleased with the Machine's performance. The Machine's flaws made it seem more real and more newsworthy, especially how it functioned when the going got tough—those repairs the boys made under time-pressure in your game, Savilly, will help sell WBM computers or I miss my guess. In fact nobody could have watched the tournament for long without realizing there were nine smart rugged men out there, ready to kill that computer if they could. The Machine passed a real test. And then the whole deal dramatizes what computers are and what they can and can't do. And not just at the popular level. The WBM research boys are learning a lot about computer and programming theory by studying how the Machine and its programmer behave under tournament stress. It's a kind of test unlike that provided by any other computer work. Just this morning, for instance, one of our

big mathematicians told me that he is beginning to think that the Theory of Games *does* apply to chess, because you can bluff and counterbluff with your programming. And *I'm* learning about human psychology."

Doc chuckled. "Such as that even human thinking is just a matter of how you program your own mind?—that we're all like the Machine to that extent?"

"That's one of the big points, Savilly. Yes."

Doc smiled at Sandra. "You wrote a nice little news-story, dear, about how Man conquered the Machine by a palpitating nose and won a victory for international amity.

"Now the story starts to go deeper."

"A lot of things go deeper," Sandra replied, looking at him evenly. "Much deeper than you ever expect at the start."

The big electric scoreboard lit up.

FINAL STANDING

Player	*Wins*	*Losses*
Angler	6	3
Votbinnik	6	3
Jal	5½	3½
Machine	5½	3½
Lysmov	5	4
Serek	4½	4½
Sherevsky	4½	4½
Jandorf	3½	5½
Krakatower	2½	6½
Grabo	2	7

"It was a good tournament," Doc said. "And the Machine has proven itself a grandmaster. It must make you feel good, Simon, after being out of tournament chess for twenty years."

The psychologist nodded.

"Will you go back to psychology now?" Sandra asked him.

Simon Great smiled. "I can answer that question honestly, Miss Grayling, because the news is due for release. No. WBM is pressing for entry of the Machine in the Interzonal Candidates' Tournament. They want a crack at the World's Championship."

Doc raised his eyebrows. "That's news indeed. But look, Simon, with the knowledge you've gained in this tourna-

ment won't you be able to make the Machine almost a sure winner in every game?"

"I don't know. Players like Angler and Lysmov may find some more flaws in its functioning and dream up some new stratagems. Besides, there's another solution to the problems raised by having a single computer entered in a grandmaster tournament."

Doc sat up straight. "You mean having more programmer-computer teams than just one?"

"Exactly. The Russians are bound to give their best players computers, considering the prestige the game has in Russia. And I wasn't asking Willie that question about IBM just on a hunch. Chess tournaments are a wonderful way to test rival computers and show them off to the public, just like cross-country races were for the early automobiles. The future grandmaster will inevitably be a programmer-computer team, a man-machine symbiotic partnership, probably with more freedom each way than I was allowed in this tournament—I mean the man taking over the play in some positions, the machine in others."

"You're making my head swim," Sandra said.

"Mine is in the same storm-tossed ocean," Doc assured her. "Simon, that will be very fine for the masters who can get themselves computers—either from their governments or from hiring out to big firms. Or in other ways. Jandorf, I'm sure, will be able to interest some Argentinian millionaire in a computer for him. While I . . . oh, I'm too old . . . still, when I start to think about it . . . But what about the Bela Grabos? Incidentally, did you know that Grabo is contesting Jandorf's win? Claims Jandorf discussed the position with Serek. I think they exchanged about two words."

Simon shrugged, "The Bela Grabos will have to continue to fight their own battles, if necessary satisfying themselves with the lesser tournaments. Believe me, Savilly, from now on grandmasters chess without one or more computers entered will lack sauce."

Dr. Krakatower shook his head and said, "Thinking gets more expensive every year."

From the floor came the harsh voice of Igor Jandorf and the shrill one of Bela Grabo raised in anger. Three words came through clearly: ". . . I challenge you . . ."

Sandra said, "Well, there's something you can't build into a machine—ego."

"Oh, I don't know about that," said Simon Great.

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