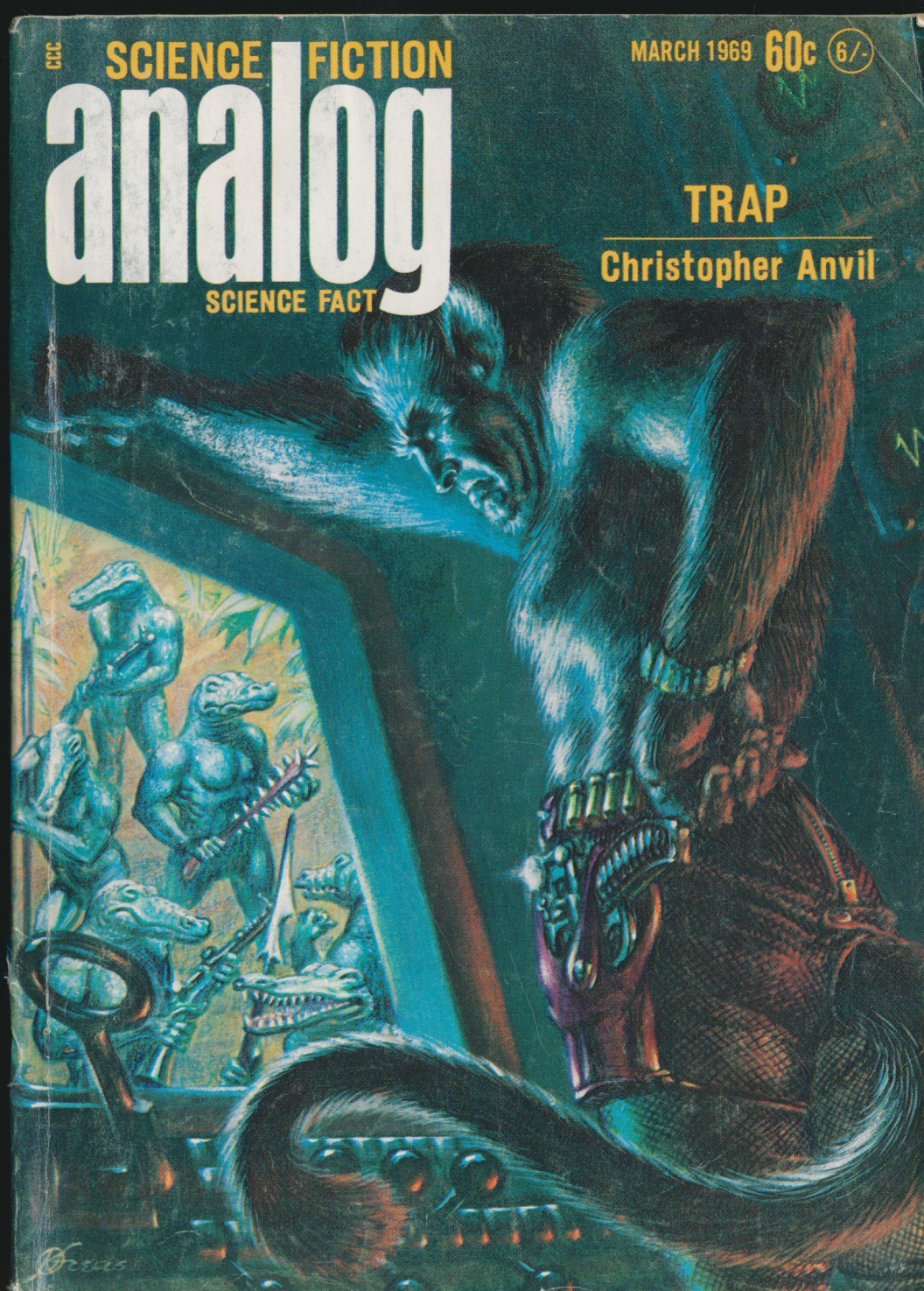

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NEXT ISSUE ON SALE
MARCH 6, 1969
$6.00 per year
in the U.S.A.
60 cents per copy

Cover by
Kelly Freas

Vol. LXXXIII, No. 1 March 1969

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Analog Science Fiction/Science Fact is published monthly by the Condé Nast Publications, Inc. Executive, Publishing, Editorial and Advertising offices: 420 Lexington Avenue, New York, N.Y. 10017. I.S.V. Patcévitch, President; Alfred W. Cook, Treasurer; Mary E. Campbell, Secretary. Second class postage paid at New York, N. Y. and at additional mailing offices, under the Act of March 3, 1879. Subscriptions: in U.S. possessions and Canada, $6 for one year, $10 for two years, $13 for three years. Elsewhere, $8 for one year, $16 for two years. Payable in advance. Single copies: In U.S., possessions and Canada, 60¢. For subscriptions, address changes and adjustments, write to Analog Science Fiction/Science Fact, Box 2205, Boulder, Colorado 80302. Six weeks are required for change of address. The editorial contents have not been published before, are protected by copyright and cannot be reprinted without the publisher's permission. All stories in this magazine are fiction. No actual persons are designated by name or character. Any similarity is coincidental. We cannot accept responsibility for unsolicited manuscripts or art work. Any material submitted must include return postage.

POSTMASTER: SEND FORM 3579 to ANALOG SCIENCE FICTION/SCIENCE FACT, BOX 2205, BOULDER, COLORADO 80302.

EDITORIAL AND
ADVERTISING OFFICES:
420 LEXINGTON AVENUE
NEW YORK, N. Y. 10017

GENETICS AND UTOPIA

editorial by John W. Campbell

No human society has ever yet been satisfactorily matched to the nature of Man and the Universe—with the perfectly predictable result that every human society has broken up in one way or another.

An airplane that is not built in accordance with the laws of aerodynamics, to match its environment, or structured according to the laws of mechanical engineering, will most certainly not fly for long, even if it does manage to get into the air. And a society that is based on social laws that do not match the Universe, or the nature of Man, is equally certain to disintegrate.

Part of the problem our society—and this means the entire world society, East and West, New World and Old—is currently facing is, simply, the concept that Opinion Makes Things True. That Truth is established by consensus—that if everyone agrees that a certain thing is, and of a right ought to be true—why that *makes* it true.

A society can, by overwhelming democratic vote, pass an act repealing the Law of Gravity. It can pass an act declaring that, henceforth, the value of pi shall be 3.0000 . . . exactly, thus saving much effort in calculations. It can also pass laws declaring that genetics has no effect on the nature of people.

No one of those three ideas is subject to democratic vote, nor to human consensus; a society that doesn't recognize that *Truth is not made by human opinion* will fail just as certainly as an airplane built with flat wings because that's much cheaper than making those complex curved surfaces.

Genetics *does* count—and that's a fundamental in any society that is to last more than a single generation. One of the most violently disliked features of genetics is that no man can do anything whatever about the genes he was born with—but he can do a lot *with* them, which makes that aspect of the problem a personal responsibility.

The other best-hated aspect of genetics is the fact that a "race" means, simply, a large group having a common gene pool, and consequent characteristics in common. Just as there are gene pools, there are entities that can be called "races." And the violent hatred of that fact derives from an individual's acute dislike of being tagged with a characteristic of the race he belongs to.

The trouble is this: Statistical statements can be made which are absolute truths, and individual

statements can be made about the same individuals which are absolute denials of the statistical truth. The logic we grow up with is the natural, simplistic logic of small children—naturally, because we grow up as small children. Anyone who's tried to answer the questions of a four to ten-year-old child has encountered the utterly linear logic—and irrationality!—natural to young human beings.

Aristotle didn't *invent* Aristotelian logic; he observed it and recorded his observations. Like a modern entomologist recording the complexity of the dance bees use to communicate to their hivemates where to find a fine source of food, the scientist records observation. He does not invent facts. Logic existed long before Aristotle—and it existed in a two-value fashion. A thing is either *true* or *not-true*; there is no alternative.

Consider these statements, then: Molecules in a hot gas are moving faster than molecules in a cold gas. This molecule, which is in a hot gas, is moving slower than this molecule in this cold gas.

Now both of those statements can be absolutely demonstrated; both are absolute truths—and yet they are mutually contradictory. At the simple true-false level of childish logic.

In other words, what is *statistically true* of the members of a specific gene-pool group, can be absolutely *false* for individuals in that gene-pool group.

Let's consider some demonstrably-true racial-statistical statements that can be made of the various gene-pool groups found in New York City—a large, cosmopolitan metropolis inhabited by many racial stocks.

1. Jews can observe that non-Jews are much more likely to be alcoholics than are Jews.

Now here I am referring to "Jews" as a gene-pool group, not as members of a religious sect. And the above statement is verifiably true; Jews have a genetic immunity to alcoholism. Of course, since genetics works on a statistical roll-of-the-dice basis, there is a distribution curve with respect to any nameable, measurable characteristic that is genetically influenced. The result of that is that a second and opposite statement can also be made: "This Jew is an irredeemable alcoholic sot, while this non-Jew is a very moderate social drinker."

Both statements can be perfectly true simultaneously.

Citing individual-facts neither proves nor disproves statistical-facts. No more than proving that this gas is hot proves that *all* its molecules are moving fast.

Again, the observers in another gene pool in New York City can observe: "Whites are much more given to crimes than are Chinese;

we Chinese have reason to distrust them." The crime statistics gathered by White police officials over several decades unarguably demonstrate that the statement is statistically valid.

When individuals from the European gene pool first went into the South Seas, terrible epidemics of measles killed off thousands of the Polynesian natives. Readily demonstrable statistical truth: Whites have a far higher level of genetic immunity to measles than do Polynesians. For Whites, it is a minor disease of childhood; for Polynesians it is a lethal plague.

However, equally observable, is the fact that some White children die of measles, or are crippled for life, and individual Polynesians proved to be completely immune.

Now the difficulty faced by anyone trying to design a Utopian society is that *societies are necessarily statistical systems.* And, moreover, the larger the society, the more heavily the statistical truths press upon it, and the less it can react to individual-truth facts.

One of the troubles with modern psychotherapeutic theory is that psychologists have tried to establish their art as a science by using the statistical methods developed by physicists and chemists. This is trying to impose statistical truths on individuals—which, quite naturally, fits like somebody else's shoes. Statistically, Jews are not alcoholics; therefore if a Jew comes in staggering, with blurred speech, and a strong odor on his breath—why obviously he must be suffering a brain tumor since, as a Jew he couldn't be alcoholic . . .

Psychology works fine for market research—because that is, actually, a branch of sociology rather than individual-psychology. The marketer is interested in statistical results—he isn't at all interested in whether or not any named individual responds to his offer.

And here cometh the great bind in designing Utopias. Let us assume that, with the help of an Arisian demigod having total telepathy, we are able to set up a culture, on a brand-new Earth-like planet, in which every single individual has been carefully scanned, and has been assigned to exactly the kind of work that he enjoys doing, and is perfectly fitted to do. We now have a Utopian culture.

So the Arisian demigod departs for other planets—and the human beings of Utopia start having children.

Now there is a statistical probability that the children of the business organizers and systems operators will have children adapted to those jobs, while the forestry and agricultural workers will have children who like the open country. However, we can also absolutely bet that in a significantly large world-population, there are

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going to be children of high-level organization people who simply loathe, hate and despise business organization, and love being agronomists, while others of those organizers' children will, unfortunately, be Grade A #1 blockheads incapable of learning anything more complex than putting canned goods into cases with the label side up.

While some son of a second-assistant weed-puller on a back-country farm turns out to be the new Abraham Lincoln.

This is precisely what the roll-of-the-dice genetics on which humankind is based means—it's a statistical process, intervening between individuals—mother and father—and individuals—the children.

You can have statistical assurance that your children will resemble yourself—but the individual produced by genetic reproduction *does* display an Aristotelian yes-no effect. He either *is* like you or *is not;* as an individual he himself doesn't have statistical characteristics. Any more than the fact that the average American family has 2.7 children means that your third child turns out to be seven-tenths of a child.

Lincoln was the descendant of a long line of nobodies. Statistically, the society could expect those parents to produce a useful nobody—

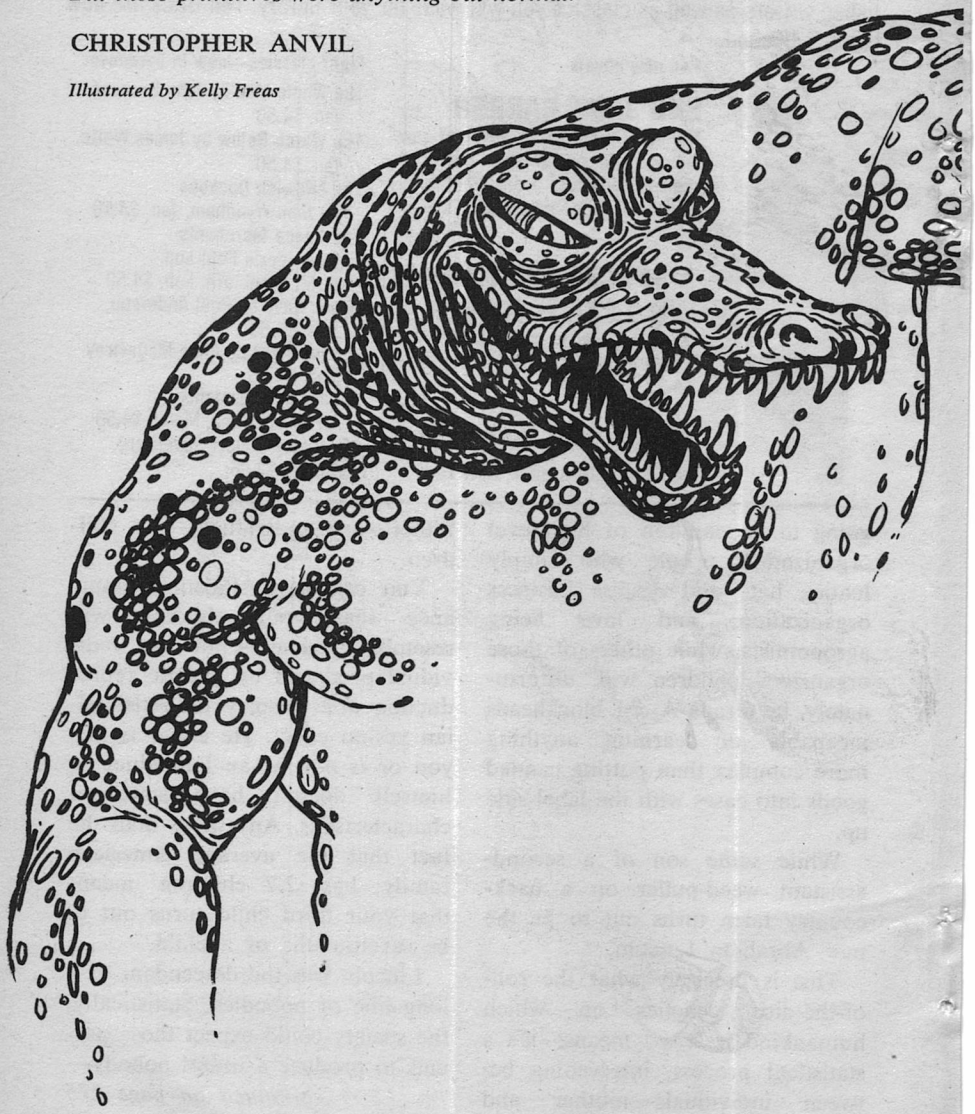
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TRAP

Primitive warriors aren't much of a menace to a high technology normally. But these primitives were anything but normal!

CHRISTOPHER ANVIL

Illustrated by Kelly Freas



Colonel John Towers, commanding Independent Division III of the Special Effects Team, drifted down through the moist air with the sun hot on his back, set the gravitor pack to hover, and looked down through his binoculars at a chain of low dark-green equatorial islands that stretched due east to the distant horizon. To north and south, a placid ocean shimmered unbroken as far as the eye could see.

Scattered along the island chain lay many Centran spaceships, and Towers studied the identifying letters and numbers on a ship almost directly below. This was the command ship of Major General Sark Glossip, Centran Military Overseer of the planet.

Towers, in his job straightening out unruly worlds in the Centra-Earth alliance, had acquired a knack for recognizing particularly bad situations. He turned back the flap of his holster, and made sure his service automatic slid easily to hand. He glanced up at a glint of reflected sunlight high overhead, and took a small communicator from its case on his belt.

"Logan?"

"Sir?" came the voice of his second-in-command.

"Drop the landing boats another thousand feet."

Overhead, the bright glint began to change form and position.

Logan's voice came through again. "How do things look?"

"About the same as on the screen. Nothing moving. No Centrans, humanoids, or animals in sight anywhere. But I have the sensation of a hundred sets of unfriendly eyes watching. Do you see anything?"

"No, sir. Nothing worth mentioning."

Towers pressed down the knob of the grav pack's control rod, felt mounting pressure against his eardrums as he dropped, and yawned and swallowed to ease the pressure.

He looked down at the Centran command ship lying on dark sand near the edge of a patch of dark-green brush. The ship had a low bulge along its upper flank, and rising from this, two big thick vertical fins one behind the other. These fins, oval in cross-section, bristled with gun muzzles, spike bars, and nests of sharpened blades, and were crowned by metal cages backed with mesh.

Logan's voice came through reassuringly.

"Still nothing moving down there, sir. It *looks* O.K., at least."

"Hm-m-m," said Towers, unconvinced, looking over the guns and spike bars.

Logan said, "What do you plan to do, sir?"

"Obey orders—when Glossip condescends to give them to me."

Sark Glossip, who had brought Towers to this planet by his call for help, had provided an explana-

tion that was a model of its kind:

"So," Glossip had said, looking out intently from the communicator screen, "the Special Effects Team can straighten out planetary revolts?"

"We've certainly had experience at it," said Towers. "What's the trouble, sir?"

"How about planets that haven't yet been . . . ah . . . fully integrated?"

"You want the Special Effects Team for the initial conquest?"

"Well," said Glossip defensively, "we've run into an unusual situation—"

All Towers handled were unusual situations. But he nodded sympathetically, and looked receptive.

Glossip doubled back on his tracks.

"*Is* the Special Effects Team used in the initial conquest?"

"Not in the actual landing. But sometimes later on, if the situation is bad enough."

"It's bad here."

"What's wrong, sir?"

"It's an extremely serious situation. Very serious, Towers. Very serious indeed."

Towers listened patiently.

Glossip said, "We're in a tough spot here." His eyes strayed to Towers's insignia of rank. "Colonel—if I understand you correctly—you will give assistance, if I request it."

"Yes. But—"

"Very well. I *do* request assistance. Now, Towers, I want to discuss this with you."

"Yes, sir," said Towers exasperatedly.

"Down *here*. So, the first thing for you to do, Towers, is to come down, and we will go over this."

"General, I can do a better job if I have some idea what the mess is before I'm in it."

The Centran thrust out his jaw. "I think this is a much wiser way to handle this, Colonel. And the sooner you get here, the better."

"I can get to the planet—"

Glossip interrupted. "In no circumstances are any of your ships to actually *touch down* here. This is the first thing you have to remember."

"General, if you'd give me a few details, I could decide much better what—"

"Exactly why I want to discuss this with you, Colonel. As soon as possible—just as soon as you can get here." Glossip frowned thoughtfully. "There isn't any truth, I suppose, in the rumor that your people have developed a one-man gravitor pack?"

"Yes, we—"

"Splendid! Then you can come down using that, and you won't need to bring even a landing boat to the surface."

Towers opened his mouth, and shut it again.

"Fine," said the general. "Then that's settled. Now, then, we'll

want to know exactly when you can get here . . ."

Now, thinking back on this conversation as he drifted down toward the Centran ship, Towers felt again the urge to profanity.

"Logan."

"Sir?"

"I'm going down there now."

"Yes, sir. Good luck."

"Thanks."

Towers dropped more rapidly, scanning sea and island, and seeing nothing move.

Suddenly, Logan said, *"Sir—"*

"Yes?"

"On high magnification, we've found a great many small translucent objects of some kind, barely afloat—in the water around the island below you."

Towers looked down intently.

"Any motion from these things?"

"No, sir. But we don't see any such numbers anywhere else."

"Maybe jellyfish of some kind."

Towers dropped straight for the ship. From here, he could see the gun muzzles in the foreshortened upright fins. The guns pointed not only at sand, brush, and sea, but also at the dented armor of the neighboring fin. Was that to protect against an enemy too close to be reached otherwise? But then, why was only *this* part of the ship protected against attack?

From below, a voice boomed in Centran:

"Colonel Towers! When we open the bars, drop fast toward the red hatch! When you're four or five reaches away, swerve for the green hatch. We'll drop it as you come through. Don't hesitate, and don't shoot!"

The cages atop the big fins swung open, to show beneath them small chambers with large hatches at the bottom. The hatch in the forward fin was painted green, and in the aft fin red. Towers shoved down on the control, and plunged toward the aft fin.

The island, and the Centran ship, sprang up at him, enlarging in a rush.

He yanked the control sidewise and forward, and shot toward the forward hatch.

Suddenly, the air was filled with blue-green flippers, white teeth, and flying slivers of pointed shell.

There was a whine of bullets, the green hatch fell open underfoot, and he yanked up on the control as he plunged into thick darkness and a hammering clang shook the air. The deck sprang out of the gloom, and a voice roared, "Shut and lock! Report!"

Towers landed hard, sank down on his knees, felt the crushing pressure grow light, and barely managed to snap the control to neutral before it threw him back up at the hatch.

From overhead came shouts.

"Green clear!"

"Red clear!"

"Cease fire! Check your walls! New guard, by the red gate!"

Directly before Towers in the sweltering dimness, a Centran captain raised his hand in salute.

"The general's waiting, sir. Follow me."

Towers was barely able to breathe in the overpowering heat. He glanced around, to make out vertical bars that divided the space under this fin from a corresponding space farther aft. On each side, armed Centran guards, stripped to the waist, watched the opposite compartment.

Ahead of Towers, the Centran captain dropped through a hatchway, and Towers followed.

He found himself walking along a narrow corridor cooled by a faint current of air. The captain rounded a corner, and halted at a doorway where a Centran sergeant stood on guard. The guard boredly presented arms, the captain knocked, and a gruff bark answered from within. The captain opened the door, spoke briefly into the room, then turned to Towers.

"Go right in, sir."

Towers stepped in. The heat, in here, was the worst yet.

Across the far corner of the room, under a sluggishly-turning four-bladed ceiling fan, was a desk. In back of the desk was an overturned pivot chair, one clawed foot upraised. Seated at the desk was a burly Centran stripped to the waist, his fur plastered to him as if he'd just stepped out of a shower. A glance was enough to show Towers that this was General Glossip.

General Glossip's frame of mind was evident in the abrupt way he toweled the condensation off a pitcher of ice water, and slapped the towel over the upraised claw of the pivot chair, then glanced to the other side of his desk where a tub of ice trailed streamers of fog in the stifling heat, while condensation trickled onto a sodden bath towel, a thin stream of water curled out toward Glossip's desk, and the general cast a venomous glance at it before looking up at Towers.

Towers, who had crossed the room to stand at attention before the desk, was momentarily distracted by a small green-and-brown striped lizard lying atop one of the broad sluggishly-turning fan blades. This lizard, a blissful expression on its face, apparently had the advantage of the only breeze, in the room.

Towers became aware that the general was following his gaze. Towers saluted, and reported his presence.

Glossip's face was expressionless as he returned the salute.

"Well, Colonel," he said dryly, "I see you got here safely."

"I'd have had a better chance with a little more information, sir."

"And just how the devil was I supposed to explain a thing like that to you or anyone else?"

"Exactly what *did* happen when I was coming in?"

Glossip squinted at him, then nodded sourly. "Happened so fast you didn't have time to see it? Well, Towers, far be it from me to try to explain it." He glanced at the wide harness of the gravitor pack. "Is that the only one of those one-man packs you have?"

"No, sir. We've got others." Towers's voice was unintentionally sharp.

Glossip looked at him coldly. "Do you have any in those landing boats you're bringing down?"

"We have several of them, sir."

"Could you have one dropped by parachute?"

"Yes, sir."

"Then go out, have an extra pack dropped down, and bring it into the ship here."

Glossip reached back and took hold of a brass knob dangling on the end of a slender chain, and there was a *bong-bong* on the far side of the bulkhead behind him.

The corridor door opened up and a somewhat dull-looking Centran lieutenant saluted.

"Sir?"

"Take Colonel Towers here to the entry port. Inform the officer of the hatch that the colonel is to have every consideration, and may leave by the red or the green as he chooses. He—"

General Glossip paused abruptly.

The lieutenant had suddenly forgotten Glossip, and was looking at Towers's completely furless face and hands. Next he stared to right and left of Towers's ankles. He had that characteristic look of a Centran—one possessing poor manners and dubious intelligence—seeing an Earthman for the first time, and trying to locate the tail.

General Glossip's teeth came together with a snap.

He turned to Towers, very politely.

"Colonel—"

"Sir?"

"If you would just step outside for a moment, while I give Lieutenant Molgrim a few final instructions—"

"Yes, sir."

Towers stepped outside, and could feel the lieutenant's gaze on him the whole distance.

Towers pulled the door shut, and stood to the other side from the sergeant on guard.

From behind Towers, the general's voice came through the door, low and angry:

"You sickly lump of Mikeril bait! Stand up! Eyes front! Get that silly look off your face! Was that the first Earthman you ever saw?"

The Centran sergeant glanced up and down the hall, then, strictly contrary to regulations, murmured confidentially, "I was on Earth in the invasion."

Towers hesitated. He should de-

liver a stiff reprimand. But here at last might be a source of information.

"Yes, sir," murmured the sergeant, "I was only a cub, but I was at General Horsip's headquarters when the counterattack hit. Believe me, *there* was something. Whatever else they say, I know Earthmen can *fight*. Anything I can do for you, sir, just send the word for Klas Makkil. In a place like this, we have to stick together, or we're finished."

Towers dumped regulations overboard.

"What is it you're up against on this planet?"

"The toads go through the air so fast you can't see them. That's the worst. Next is that they float underwater with just the curve of their eyes awash. They can spot *you*, but you can't spot *them*. By the hairy arm, sir! It's not safe to set foot outside in the daytime, and it isn't much better at night."

"Thanks, Makkil. That's more than the general told me."

"General's all right, sir. But this place has him whipped, and he's too mad to talk about it." The sergeant stood straighter as footsteps approached from the general's office.

The door opened, and the lieutenant came out, trembling all over. "Please follow me, sir."

As Towers started down the hall, the sergeant hissed in his ear, "Go *fast*, from red."

Beneath the closed red hatch in the aft fin, Towers dropped to a low crouch.

The Centran officer in charge bellowed, "Raise the bars! Drop the hatches!"

Towers glanced up at the disk of dazzling sky directly overhead, snapped the pack control to full lift, straightened his legs in one violent thrust, and shot through the hatch. Abruptly he was in bright sunlight, breathing air that seemed fresh and almost cool.

From the ship dwindling below came a clang as the hatches slammed shut.

Towers glanced up, to see that Logan was evidently alert for treachery. The landing boats were in a formation of open concentric rings, lowest on the outside, and progressively stepped up toward the center. From this formation, they could open fire on the Centran ship without obstructing each other, or close on it simultaneously from all sides.

Towers slipped his belt communicator into his hand.

"Logan."

"Sir?"

"Lift formation a thousand feet."

From below came a roar, and Towers recognized Glossip's voice:

"Colonel Towers! Your orders were to bring no ship or landing boat to the surface!"

There was a momentary silence, and Towers deduced that Glossip could see the boats lifting, and

realized Towers must already have given the order.

"Very good," came Glossip's voice. "See they don't come within a hundred reaches of the surface, Towers."

"Yes, sir," called Towers obediently. He had the growing suspicion that he and Glossip were going to have a head-on collision soon.

He described Glossip's order to Logan, and asked. "Do we have an extra gravitor pack handy?"

"Yes, sir," said Logan, "but suppose we save the parachute? I'll set the pack to descend slowly."

"Good. But—wait a minute."

Towers looked around exasperatedly. Glossip didn't bother to explain. He just gave orders. It was, therefore, a little hard to improvise if his orders turned out to be impractical.

Glossip had ordered Towers to *bring* the extra pack into the ship. Of course, to do that, Towers had to go through the same thing he'd gone through the last time, with the added handicap of the extra pack. Was there some reason why Glossip wanted Towers himself back in the ship, or would the pack alone be enough? The devil with it.

"And Logan—"

"Sir?"

"Put a coil of fishline and a couple of lead weights, from the survival kit, in the pocket of the pack. Maybe I can guide the pack down to the ship from up here."

"Yes, sir."

A moment later, a dark object detached itself from one of the landing boats, and began to drift down.

Towers, hovering, could feel the sun through his uniform, and every breath of air seemed to stay where he exhaled it. He lifted up on the control, and climbed toward the pack.

He still had to get that pack into the Centran ship, and before he tried that, it might not be a bad idea to get a little more information.

"Logan, what happened when I went down to the command ship?"

"I wish I knew, sir. It *looked* like twenty to thirty blue-green mermen materialized around that pair of conning towers."

"Materialized?"

"Well, sir, if they flew, they were too fast to follow."

That, thought Towers, *was what Makkil had said.* He cleared his throat.

"They materialized *over the fins* —the 'conning towers'?"

"Well, not *over* them, at first. They—*clumped.*"

"They *what?*"

"Well, they—piled up. The impression most of us got was that they didn't appear all at once, but in rapid succession. It seemed that the first ones were lower than the ones that followed. Then they—dematerialized—disappeared and were gone."

Towers shook his head. No wonder Glossip hadn't wanted to talk about it. He looked down at the water, then up at the landing boat.

"You've got this recorded?"

"Yes, sir. But we haven't had time to check it over."

"Do you have any idea where these things came from, or where they went to?"

"We don't know where they went to. But they apparently came from the water around the island. First, a series of splashes and then they appeared over the ship."

"Splashes?"

"Yes, sir. As if something had just been dropped into the water. I suppose if something came *out* of the water fast enough, it would make a splash, too."

"Hm-m-m," Towers thought it over, saw that the pack was close, caught it, and reached into the pocket for the fishline. Just as he drew it out, something in the placid water below threw back a flash of reflected light.

Four feet of glistening teeth and crocodilian head split the water in a streak of foam. There was a wild thrashing, and a humanlike upper body came into view, muscular arms wildly beating the water, mouth wide open and features contorted, the whole body—arms, face—blue-green in color. Then the huge jaws twisted sidewise, and there was just a long swell of smooth water marked by a whitish rush of bubbles. Then the distant piercing scream reached Towers, like a reflected flash of agony.

Around the island, a series of low spouts of water flung up and fell back in a splash.

Logan siad, *"That's* what happened before."

From the Centran ship came Glossip's voice:

"Colonel Towers! Bring down the pack!"

Towers started down, counting seventeen places in the sea marked by circular ripples.

Logan was saying, "That's what happened before, but the mermen showed up over the ship."

"The splashes came from the places where you'd noticed some kind of translucent objects?"

"Yes, sir. We were apparently seeing the eyes and maybe part of the brow."

Again, that fit with what Makkil had said. It added up, but what did it add up *to?*

"Do you still see any in the water around the island?"

"Quite a few. Around on the other side."

Towers slipped the fishline out, and tied one end tightly in a shallow groove in the rod below the control knob. To the other end of the line, he tied one of the small lead weights.

From the ship boomed Glossip's authoritative voice:

"Start for the green hatch, Towers, then swerve for the red!"

Logan said, "Sir, there's another bunch in that inlet south of the ship."

That decided Towers, who hovered above the ship. He roughly centered himself over the red hatch, lowered the weight on the fishline, peered along the swaying line, then called, "Look out below! Keep back from under the red hatch!"

"Towers!" boomed Glossip's voice.

Towers, sighting along the line, seemed to be directly above the hatch, but he needed a check. He released the other small lead weight, and watched it dwindle. It seemed to be dropping straight for the hatch opening.

Glossip's voice roared, "Start for the—" The instructions were interrupted by a bellow of pain and rage.

Towers carefully pressed down the control, and let the pack go. The pack accelerated for the ship.

"General," he called, "I can't swerve in time carrying the pack! I'm dropping it through the red hatch. Have your men grab it, and *center the control knob!"*

The pack was dwindling fast, headed for the hatch opening.

Near the top of the aft fin, there appeared half-a-dozen blue-green forms, each holding up what appeared to be a kind of large shell. From Towers's angle of vision, these mermen seemed to abruptly displace themselves upward. Then he realized that the first were still in the same position, but more had appeared.

The coiled fishline was leaping from Towers's hand, and now he clapped his other hand on it to put a drag on the line, to yank the pack's control to full lift. If he had gauged it properly, the Centrans should be able to grab it once it got in. But would it get past the blue-green forms around the fin? Towers's service automatic was in his hand before he remembered the earlier warning not to fire. Before he could decide whether to squeeze the trigger there was a yell from below, and the blue-green forms were gone.

The pack shot in past the edge of the hatch opening, trailing the fishline. On full lift, it should, according to Towers's estimate, lose enough accumulated momentum so the Centrans could grab it.

From below came a roar, yells, bellowed curses and orders, a loud crashing noise, then a momentary silence. Then there was a burst of ferocious profanity, and the pack shot up out of the hatch, a large furry form clinging to the straps.

For an instant, Towers was paralyzed. Before he recovered, Glossip went past like a rocket headed for outer space, the fishline trailing straight out behind.

Towers grabbed at the line, missed, yanked his own pack control to full lift, took another grab at the line, caught the weight

for a moment, then it snapped free.

Towers was rising fast now, and swallowed to equalize the pressure against his eardrums. He looked up, and could see that he was gaining. Possibly Glossip had managed to center the control. Towers squinted against the wind, and abruptly shoved his own control all the way down.

Glossip had dwindled to a speck, but this speck was now enlarging like an onrushing meteor.

Glossip went past in a streak, upside down, hanging to the straps, accelerating straight for the island.

Towers shouted, *"Center the control!"*

Apparently, Towers had caught the weight for just an instant, but that had been enough to snap the control all the way down. Glossip had then continued to pull ahead on accummulated speed, while he and Towers were building up a big acceleration in opposite directions.

As the thought flashed through his mind, Towers was urgently looking for the line. Something blurred toward him, and he seized it and tried to hang on. It yanked his arm straight down, and shot free.

Towers snapped the control knob of his own grav pack to nearly full lift, and peered down.

Below him, Glossip appeared centered over the hatch. Towers prayed fervently and watched. Now there was a twisting motion that Towers hoped meant that the pack had started up again. Now a swarm of blue-green blurs appeared around the fin, apparently trying for a grab at the Centran general. Now they vanished. Glossip was still there. Carefully, Towers eased his pack control down a little, to slow the ascent, felt the painful sense of pressure deaden his ears, yawned and swallowed, and got out the communicator.

"Logan—"

"I'm watching, sir."

"If he gets by me, have a landing boat match velocities over him and brake."

Carefully, Towers gauged speed and position, and as Glossip climbed past Towers reached out intently and centered the control. Only when he'd done this, did he spare the attention to look at the general himself.

Glossip, the straps crushed in his hands, eyes tightly shut, had a look of pure bliss on his face.

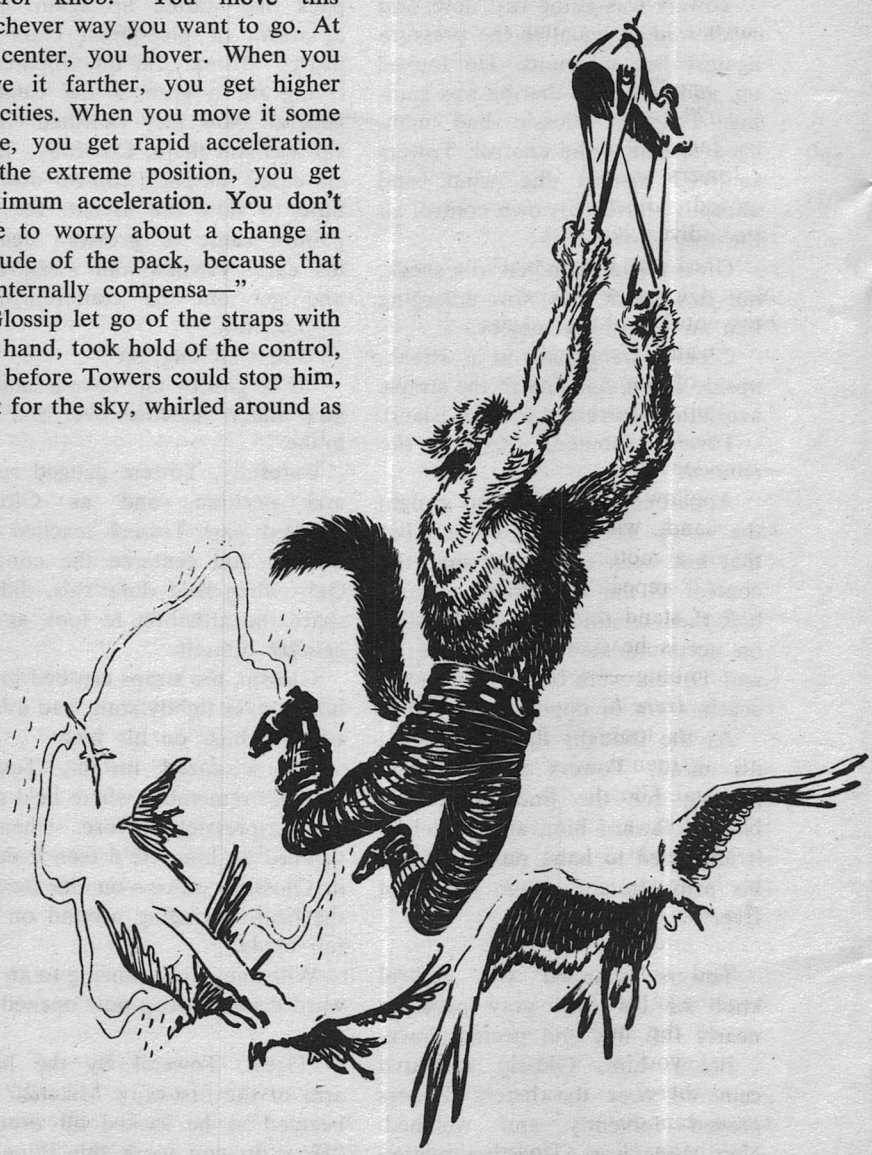
For a dazed instant, Towers couldn't remember where he'd seen that expression before. Then it dawned on him. He'd seen it down in Glossip's office—on the face of the lizard swinging around on the fan blade.

With the packs slowing to an upward drift, Glossip now opened his eyes.

"Great, Towers! By the hairy arm of the first-born Mikeril!" He beamed as he looked all around. "How do you work this thing?"

Towers dazedly pointed out the control knob. "You move this whichever way you want to go. At the center, you hover. When you move it farther, you get higher velocities. When you move it some more, you get rapid acceleration. At the extreme position, you get maximum acceleration. You don't have to worry about a change in attitude of the pack, because that is internally compensa—"

Glossip let go of the straps with one hand, took hold of the control, and before Towers could stop him, shot for the sky, whirled around as



the landing boats scattered, then plunged for the ocean. Towers snapped the communicator to his lips.

"Logan!"

"Sir?" Logan's voice was that of one earnestly awaiting orders.

Towers started to speak, then stopped. Glossip was now in a steep dive. Now the steep dive stretched out into a shallow dive. Now Glossip was streaking along horizontally, almost skimming the open water. Now the water foamed ahead of him, and a huge snout lifted up, to open out a gigantic set of jaws. Glossip whipped around to one side, reappeared, and streaked in a shallow climb toward the nearest island, where he disappeared against a mottled background.

"Sir?" repeated Logan.

"Just stand clear," said Towers. "Where is he now?"

"Climbing—right in line with the islands. *Here he comes!*"

Towers looked all around, saw nothing, then there was a roar from overhead. Glossip dove past, swung around in a flat turn, climbed sharply and stopped dead in the air, beaming.

"Fine, Towers! First rate!" He looked intently at Towers's harness, writhed around, shot one hand, then the other, through the straps, yanked the straps tight, and said, "Now, you saw what happened down there? You saw what these locals can do?"

With an effort, Towers dragged his mind onto the problem. "Yes, I—"

"Good," said Glossip. "Then, you see why I couldn't explain it. How *could* I explain it? These natives *teleport.* They can live on land or in the water, and when they're in danger—which is often in that ocean, believe me—there's a little splash as the water rushes in to fill up the space they just left, and they're gone!"

"They're gone. But where *to?*"

"That's the worst of it. As far as we can discover, they can go to *any place they've been before.*"

Towers digested this, then shook his head.

"General, it seems to me that this is a good planet to leave alone."

"Very true," said Glossip. "And when a man reaches into a barrel, thinking it's empty, and his arm sinks up to the elbow in soft tar—Why, yes, that was a good barrel to stay out of. But his problem *now* is that he's got his arm in there up to the elbow."

Towers started to speak, then paused. The natives could *teleport.* They could go *anywhere they had already been.*

Towers looked down at the Centran ship. He was high enough so that he could see, on neighboring islands, other Centran ships. And he knew that was just a small part of Glossip's force. Frowning, he asked, "What's the extreme range? How far can they teleport?"

"A very good question, Towers. That's the crux of the matter. How far *can* they teleport? We don't know. And there are a number of wrong ways we can find out."

"When you say they can go 'wherever they've been before'—"

"Let me show you."

Glossip dipped into a shallow dive, and Towers followed. They streaked high over the island, across a narrow strip of water, crossed another island and several Centran ships, then still another island, and a ship with the hatches open and unguarded.

"That," said Glossip, "is one of the ships that set down here earlier. They never knew what hit them."

They shot out over the sea, and on an island to one side and far below was another Centran ship with a pair of heavily-protected upright fins.

"Now," said the general, "stay here, and watch closely."

Towers hovered, as Glossip dropped toward the ship in a long glide, paused above it, and bellowed orders. Directly above the aft fin, Glossip slowly began a vertical descent. Below, the metal cages swung up and out. Glossip descended with elaborate caution, as if afraid he might somehow miss the hatch and get hung up on the spikes. When he was about twenty feet above the hatch, suddenly there appeared a ring of blue-green forms around the bristling fin. Their arms were uplifted, holding something. Before there was time to see what, there was a similar ring of blue-green forms above them, arms stretched up and out, where suddenly another blue-green ring materialized, completely surrounding Glossip.

Glossip blurred into motion, tore his way through the cage of bodies, slashed, kicked, punched, and left in a rapidly accelerating climb, clutching something in one hand.

Below, the blue-green figures vanished, then abruptly one appeared near Glossip, vanished, and reappeared, face twisted in pain, close beside Glossip, to scream savagely and reach out with a curved blue-white blade. This native was so close that, for the first time, Towers noticed that in place of ears there were oval membranes, now noticeably bulged out, at each side of the head.

The big muscles in the general's arms and chest stood out under the fur. His fist smashed out like a mace.

The blue-green figure dropped, turning over and over, and growing smaller and smaller as it fell toward the sea. As it hit, the water shot out in an explosion.

Instantly, a writhing nest of rubbery arms reached up, and jerked the body under. A whitish stream of bubbles burst briefly to the surface, then disappeared.

Glossip swung up beside Towers, and now Towers could see that

what he was carrying was a brownish shell, roughly a foot across, and very thin along one edge, where a number of small oval bits apparently had been broken off.

Glossip glanced at Towers. "Did you see how they worked that? How they showed up one atop the other?"

"Yes. But I don't see why."

"They can go anywhere they've been before. But what does *that* mean? This planet is swinging around the sun, while turning on its axis. Its *location* is changing from moment to moment, and so is the location of everything on it. What these natives teleport to is, therefore, a familiar *object*. Unfortunately, the object doesn't have to be very big."

Towers looked at the shell. "That—"

Glossip nodded. "It's big enough, or massive enough, so that they can sense its structural pattern, or whatever it is that they do. And then—they can *go* to it."

The implications hit Towers like a combination of blows.

"When they teleport, they *can carry things with them?*"

Glossip smiled. "That's it."

"Each of them can go to any place he's familiar with?"

"Right."

"And if *one* has been to a particular place, there's nothing to prevent him from going there carrying some object that *others* have become familiar with?"

"That's standard procedure."

"Therefore, wherever *one* can go, they *all* can go."

"Exactly."

"And one or more of them has learned the molecular pattern—or whatever they need to know—*of some part of each of your ships?*"

"Correct."

For the first time, the situation seemed to fall into place. The Centrans had an entire invasion force cooped up in its ships by a population of teleports, the limits of whose power they didn't know, and they couldn't leave because *wherever they went, the teleports might go, too.*

Towers spent the evening on his headquarters ship. After making sure the state of affairs on the planet was explained to his own men, so they could adapt themselves to the incredible facts, he spent his time studying a selection of reports ferried up by one of Glossip's landing boats, and gingerly transferred by way of a charged container, in case the natives put in an appearance. Towers and Logan split the stack of reports, and started working their way through. They weren't long in finding that, however bad the situation looked at any given moment, it looked worse after reading the next report.

"Phew!" said Logan, "Listen to this: 'As there is no sign of local humanoid inhabitants on this planet, and as its climate is unsuitable,

agricultural land severely limited, and any ore bodies apparently located at the bottom of an ocean populated by inimical forms of life, there appears to be no point in directing sizable forces to this world. We recommend that there be set up a signal-and-life-saving station on the planet, for use in the event of spaceship disasters. The climate might make the planet useful for disciplining troops, and as a punishment station for troublemakers in general. Conditions, though oppressive here, are so free from danger that the signal-and-aid-station might well be manned by a category of troops not suitable for more exacting duties."

Towers blinked. "What report is that?"

" 'Planet A6-3EJ4166B — A Summary.' "

"One of their initial reports?"

"Yes. And stuck to the bottom is another, titled, 'Disappearance on A6-3EJ4166B.' Listen to the last sentence: 'No sign of any possible cause has been found. The garrison has disappeared without a trace. The only clue is that *most of the portable weapons have also disappeared.*' "

"That nice," said Towers. "That adds a dimension that wasn't there before. This report follows directly after the other one you read?"

"Right. The first recommends the signal-and-life-saving station. The next tells what happened to it."

"What I've been reading is more recent. Here's one titled 'Troop Exercises After Dark.' Apparently the Centrans started out thinking they had an unpopulated planet, but listen to what they're up against now: 'We conclude, therefore, that to prevent disciplinary problems, exercise in the open air is necessary. Since such exercise in daylight hours is precluded by the casualty rate, after-dark exercise becomes necessary. In summary, the correct procedure includes the following steps:

" '1) The armored tractors must thoroughly rake and stir the sand, discharging into the sea any object larger than a hand's-breadth. The tractor crews must look over the outside of the entry ports, and clear away any enemy hidden on the blind sides.

" '2) Occupy the hatch chambers. Swing up the gun mounts and searchlights.

" '3) Sweep adjacent land and water by searchlight, to blind natives in the vicinity.

" '4) Extend ladder and slat rests beyond the spike bars.

" '5) Send out the slat-emplacement parties.

" '6) Sweep the area again with searchlights.

" '7) Send out the troops, by teams, opening and closing the bars for each party.

" '8) The scrub and other non-sand environs of the ship must be kept well trapped and mined. This must be checked daily.

" '9) For their own peace of mind, the troops must be armed. The guards, of course, must be heavily armed. The exercising troops, however, may be armed only with *unloaded* guns. Otherwise any disorder may result in heavy losses. Since darts are easily hidden, the only way to assure unloaded guns is to remove the bolts on exit, detailing a suitable officer and party to tag the bolts.

" 'If these steps are properly carried out, night exercise becomes feasible, due to the enemy's inferior night vision. But all precautions must be *maintained,* day and night.' "

Logan shook his head. "What a mess to get into on an apparently empty planet. It seems almost like a trap."

"It doesn't seem possible," said Towers, "considering that local inhabitants were here first, and all the Centrans had to do was stay away. But—let's try this one." He picked up a report he'd briefly glanced at earlier, and opened it to the back. " 'In summary,' " he read, " 'the testimony obtained from this native, Goshal, who was found washed ashore severely wounded, and brought back to health by our medical team, clearly indicates that the locals are divided into clans or tribes, each of which is warlike and aggressive. The whole population is united only rarely in times of emergency. Each tribe possesses a number of islands, located at intervals around the planet. Constant warfare follows from population pressure. The land area is small—only the chain of equatorial islands—while the enormous ocean is occupied by creatures of all degrees of ferocity. This leaves only the limited land space, and the shallow offshore waters thickly grown with *krunga* weed, and usually avoided by the open-sea life forms.

" 'Because of the resulting competition for more territory, the local natives have become extremely cunning in the use of their limited array of weapons and their unusual power; but they are often frustrated by this weakness of their weapons and the enormous escape potentiality of their power. The native, Goshal, agreed, saying that the initial attack on our life-saving station was for the main purpose of *seizing weapons.*' "

Towers lowered the report. "There's *that* aspect again."

Logan nodded gloomily.

Towers found his place: " 'It therefore appears that these natives fall into a category difficult to deal with: They are technologically backward, because of a lack of suitable materials on the planet. They are, however, possessed of a formidable power, which apparently developed out of the necessities of life on this world. They are subtle—from long practice—in warfare, using various forms of deception, sudden ambushes, and

traps, which apparently are the only reliable ways of dealing with enemies possessed of such an effective power of escape.

" 'It follows that we must be very careful to avoid further weapons captures by the natives.

" 'It is also evident that to arrive at a treaty of any reliable kind with these natives involves unexpected difficulties, because of their nature and past history of deceit. The more reasonable and attractive the suggestion made to them, the more cunningly hidden and cleverly designed will seem the inevitable trap their experience tells them must be concealed in the agreement.

" 'The only solution appears to be bring an overpowering force to the planet.' "

"Whew," said Logan, "what's an 'overpowering force' in a setup like this?"

Towers nodded. "That ignores maintenance and supply problems, and the fact that the Centrans have more to think of than just this one planet, which in itself is practically worthless to them, anyway." He was about to set the report aside, but frowned and separated the pages. Like all the others, this report looked as if it had been stored in a steam bath.

Logan said, "Does it tell how the Centrans carried out a conversation with this native?"

"Here we are," said Towers. " '. . . His pronunciation being imperfect but recognizable. The men, after applying tourniquets, carried him over to the aid station on the far side of the island. Goshal asked again to be put out of his misery, objecting that our methods created pain without serving the purpose, and that our troops were not right in causing him pain since he was not of the tribe that had attacked our expedition, but had learned our tongue from a wounded prisoner traded to his tribe by the neighboring tribe, the "green snakes".' "

"So the Centrans didn't know the local language. The locals learned the Centran language."

"Apparently."

"This looks worse and worse," said Logan. "The natives are intelligent, and past masters of deception. You can't beat them, because you can't catch them. You can't trust any agreement with them, because they're masters of deceit. And you can't get away from them, because wherever you go, *they* can go, too."

Towers moodily reached for the unread reports. "Let's find out if there's more bad news."

The two men read in silence for a long time, then Towers tossed the last report aside in disgust. Logan read on a while longer, then looked up. The two men glanced at each other.

"Well," said Towers, "most of this just reinforces what we knew. But there's something in this last report. The local food here is indigestible for the Centrans. And the

locals get nothing from Centran food. What this boils down to is that there's a continuous supply problem, which will get worse if the Centrans bring in more troops."

Logan nodded. "That fits."

"What did you find out?"

Logan said dryly, "In an earlier expedition, a good many locals were transported in Centran landing boats *to the prison ship.*"

"The *what?*"

"Prison ship."

Towers stared as the implications hit him.

Logan said, "If we ever start to forget these locals are tricky, these are just the reports to remind us."

Towers forced himself to sit back.

Logan said, "The first thing to remember is that Glossip is in charge of the *fourth* bunch of Centrans to hit this planet. The first was the team that scouted the planet, and recommended establishment of a signal-and-life-saving station. This first bunch *apparently* got away safely. The next Centrans came with the signal-and-life-saving station. The natives captured them and seized their weapons. This meant an unexplained cut-off of communications, which led to an investigation. This was the *third* Centran expedition. Their report, in turn, brought down Glossip and the invasion force. It was the third bunch that set up the prison ship."

"What happened?"

Logan picked up a handful of papers:

" 'The natives were quite easily captured as they floundered up out of the water swinging their crude weapons of shell. Our men disarmed them quickly, and herded them into the landing boats, whence they were transferred to the prison ship. Several were taken aboard the Guard ship for attempted interrogation, and language studies.' "

Towers sat back slowly. "*Then* what?"

Logan leafed through another sheaf of papers. "This one is headed, 'Night Attack on the Guard Detail':

" 'The first attempt came from the direction of the Interrogation Room, preceded by a loud clatter, a hideous yell, and a sound like an avalanche. The Guard, survivors of the Earth campaign, rolled out of their bunks, guns in hand, and fired down the corridors. The stitching guns got into action at once. Then the attack broke off, and resumed from the direction of the C. O.'s office. That was stopped by grenades, but started up again from the direction of the landing-boat ramp. This attack was broken up by the C. O., using his own stitching gun. The attack then resumed at all places at once, with terrific intensity, and moderate casualties now resulted on our side, since the use of Centran weapons by the enemy led to the belief that our men were

firing on each other. Following repeated repulse, the enemy attacks were finally broken off, and the enemy withdrew, taking his dead. The Guard reoccupied the remainder of the ship, and discovered that the hatches were all still shut and under control, but that a number of portholes had been smashed open. This peculiar fact has raised a number of questions. In the first place, it was obvious to seasoned troops that withdrawal of this sizable force, with their dead and wounded, could not have been carried out through these portholes. Moreover, while the glass from the smashed ports was on the inside, so was a quantity of sand, suggesting that the glass had fallen outside, *then been brought back inside,* purely as a deception. But if the enemy did not gain entry through the ports, and the hatches were still shut and under control, how *did* they get in? The ship was not holed anywhere. This matter deserves study.' "

Logan looked through the reports and pulled out one headed, "Analysis of the Attack on the Guard Ship":

" 'There is thus no way to avoid facing the apparent impossibility. The fact is that the portholes could not have been broken open in the beginning without alerting the guards by means of the electric alarm, which sounded *later,* when the attack was already under way.

" 'The electric warning system's recording drum shows the breaking of the ports to have taken place respectively at 0101, 0106, and 0112, while the attack started a little before 0100.

" 'At 0100, the hull of the ship, including all hatches and portholes, was intact.

" 'Nevertheless, at 0100, the attack was already underway.

" 'The only local natives on board, admitted by our own men, were the three taken aboard for interrogation and language study. No others had been admitted.

" 'Nevertheless, the attack was carried out by *large forces* of the local natives, *inside the ship.*

" 'In short, with only three of the enemy on board, and the hull intact with all openings shut, a very large force of the enemy gained entrance, *without forcing any of the openings.*

" 'The conclusion is inescapable that the enemy in some way *passed through the walls of the ship.*

" 'We are now faced with the phenomenon of the broken portholes. Since these were not broken to obtain entrance, why *were* they broken? The fact that nearly all the glass was placed *inside,* though much of it would have fallen *outside,* suggests that the purpose was deception. While it is impossible to infer motive with rigorous accuracy, let us consider the implications.

" 'What would be the effect of this deception?

" 'Bear in mind that an attack had been carried out, at night, on a ship fully sealed and protected, with guards on duty, but with no special reason for alertness on the part of the troops, who had just that day helped repulse with ease the "attack" of the local humanoids. Would these troops have any reason to expect trouble? The attack had been defeated. The weapons of the enemy were feeble. The enemy's physical prowess, out of the water, had been demonstrated to be negligible. The prisoners, under attempted interrogation, had showed a pathetic desire to please, and had cooperated readily in the first language studies. The only cause of discomfort was the heat. The troops were tired after a day of strain, culminating in relief that the supposed enemy was harmless. What reason was there for an attacker to expect a strong resistance?

" 'Now, then, having obtained a high degree of reassurance and presumed unreadiness on the part of the defenders, the natives delivered an *overwhelming attack*. That the attack failed is due to no neglect on their part, but to bad luck. The staff, in sending the improvised investigation force to the planet, happened to find a large detachment of the former Headquarters Guard of Horsip's Earth Invasion Force in a convenient location to be rerouted. These troops, survivors of the worst action on record, awarded the platinum nova *as a unit*, are to all intents and purposes unsurprisable. Military surprise presupposes reliance on an incorrect assumption as to the enemy's intent or capability. As a result of their past experiences, the troops of the Guard consider all such estimates unreliable. They maintain, by ingrained habit, the maximum state of readiness.

" 'It was pure bad luck that brought the enemy attack up against such troops. In all ordinary circumstances, this attack would have succeeded, the troops would have been wiped out, *and the smashed portholes would have suggested that entry had been made in this way*.

" 'The analysis, however, cannot stop at this point. Grant that the enemy had every reason to expect the attack to be successful. Grant that preparations were made to mislead any investigator as to the means of entrance. The question arises, *why mislead*?

" 'For the answer, we need to consider outside facts, not included in the attack on this one ship.

" 'On the same night, the laboratory ship, where the natives had been physically examined the day before, was attacked, and the crew wiped out. A porthole was found smashed, and the hatches open.

" 'On this same night, an attempted attack was made against the headquarters ship, *from the landing boat locker*. A disturbance

there during the night was heard by the officer of the deck, who decided it was a drunken spree of formidable proportions, and left it locked up. Next morning, the locker was entered by a strong party, and found empty; there were, however, signs of an ineffectual attempt to open the lock.

" 'Meanwhile, the fourth ship, the landing-forces ship, was traveling over the island chain looking for anything that might account for the disappearance of the life-saving station. But the time this ship returned, it was to be expected that the personnel of the other ships would have been wiped out. A seemingly reasonable explanation would help lull the remainder of the force.

" 'We now have the final conclusion to unravel from the evidence. The attackers were able, by some means, to pass through the walls of the ship. Why, in that case, were they unable to pass through the walls of the headquarters ship? Examination of the records reveals that native prisoners were not brought into this ship, though they were ferried to the prison ship in the landing boat of the headquarters ship, and hence *had* entered this landing boat, *which returned to the landing boat locker of the headquarters ship.* We are driven to the conclusion that the natives were able only to enter places where *one of their number had already been.*

" 'We are obviously confronted with an opponent possessed of an extraordinary power, and extremely capable in ambush warfare. And there still remains hanging over our heads the possibility that the enemy is concealing some new surprise. Extreme caution is necessary.' "

Involuntarily, Towers whistled. "This was a conclusion of that *third* expedition?"

Logan nodded. "The deductions of one Derk Moggil on the fourth ship—the ship that was away when the natives attacked."

"They seem to have sent some good men on that third expedition. I'd like to have a talk with this Derk Moggil. I wonder if he's still on the planet?"

Logan shook his head. "His name was on a list of those invalided out after the massacre of most of the third expedition."

"The native sprang the new surprise Moggil was afraid of?"

Logan nodded. "The Centrans hadn't yet figured out the actual way this teleportation worked. When the soldiers found some large pretty shells lying on the beach one day, they took them on board for souvenirs. The natives then wiped out most of the troops on the headquarters and landing-forces ships."

"How about the Guard ship?"

"The Guards were apparently too busy cleaning their guns and prac-

ticing angle shots down the corridors to pay much attention to souvenirs. The locals tried another attack the same night they hit the other two ships. But the Guard ship turned out to be crammed with booby traps every place the natives had been before. For good measure, the Centrans flashed lights on and off, and bounced timed grenades off the walls while observers watching through periscopes called the shots. The bulkheads of some of these places where the locals materialized had been reinforced and holed so the Centrans could fire machine guns through them from the other side. One had a kind of dispenser that dropped Bouncing Betsy mines every time the soldier on watch saw another local show up. It was supposed to be a surprise attack, but it worked out as a slaughter. After about five minutes, the natives quit."

Towers nodded with grudging approval. "Where the situation's hopeless, they clear out."

"And come back again from another angle."

"They tried again?"

"The night after next. They showed up just long enough to bring in some things like snakes, in woven baskets, and turn them loose. Apparently these were supposed to be poisonous, but the shock of the booby traps and mines going off killed them. The next night, the locals tried again, with a kind of biting insect. But the insects didn't like the taste of the Centrans, generally wouldn't bite, and died when they *did* bite. About that time, Glossip and his invasion force were diverted to the planet, and pretty soon the natives had something to think about besides the Guard."

"How long after Glossip got here till he called us in?"

"Judging by the dates, it couldn't have been much over a mouth."

Towers frowned. "Just suppose, for the sake of argument, that this teleportation ability of theirs will let them reach the nearest habitable solar system? Then what?"

"They still can't *get* there until they've *been* there."

"I wonder where the ships of the original scouting expedition set down last? Where did they go after they left here? What other ships were at the place where they set down, and where did they go?"

Logan looked startled. "You mean, what if natives stowed away, say, on a Centran ship?"

"What if *by any means* they get off this planet, into a position to put this ability of theirs in use on a large scale? If the practical limit is half a planetary diameter, that's impressive, but it's a local problem. On the other hand, what if the practical limit is thirty light-years? This changes the scale entirely. The fact that the original scouting expedition didn't *see* anything doesn't prove a thing. The natives operate by indirection. If they would go to

all that effort to deceive the *third* Centran expedition, who knows what they may have done to the *first* expedition?"

"It *is* peculiar that first expedition didn't see anything."

"Deception is second nature with these natives. They rely on it regularly in their warfare with their neighbors. I wonder if this fight with the Centrans doesn't fit right into their usual framework with no trouble at all."

"A different neighbor, you mean?"

"Correct. And a war with him, started off with maximum deception."

"Hm-m-m. The scouting expedition didn't see anyone here at all. The occupants of the life-saving station disappeared without a trace. The investigating team *almost* got wiped out. But look, if their aim is conquest on a large scale, why not *stay* hidden—only come out at night to touch the side of the ship, or whatever they do so they can go to it? The Centrans would never know what hit them."

"If they'd done that, the Centrans might have given up trying to figure out what happened here, and left, taking their ships, their weapons, and their equipment with them. The locals had already fooled the first expedition. They'd easily overcome the second expedition. Why shouldn't they think they could overpower the *third* expedition? Then they'd have all the equipment, and all those weapons, and wouldn't the Centrans send a *fourth* expedition, too?"

Logan swore. "You think *they planned it that way from the beginning*?"

Towers shrugged. "As that Centran report says, it's impossible to deduce motive with certainty. But it sure seems to fit."

"In that case, whether meant that way or not, this planet *was* a trap, set and baited from the beginning."

"That's what I have in mind."

Logan shook his head. "God help us if the brute-force boys get hold of this one."

"Luckily, Glossip seems to have sense. Suppose you get those Centran scout ships traced, and I'll see what we can do to ease things for Glossip."

"I just hope the scout ships from that first expedition didn't go straight to some crossroads of commerce."

Towers, his mind already elaborating an idea that had occurred to him, said absently, "One way to find out."

The two men were hard at work, when the communicator on Towers's desk buzzed, buzzed again, and he flipped it on.

"Sir," said an apologetic lieutenant, "we have an emergency call from General Glossip."

"Put him on."

The screen flickered, and Glossip

appeared, in full battle dress. His face was intent, and his eyes glittered.

"Listen, Towers. Can you hear that?"

In the background was the prolonged crash of small-arms fire in a confined space.

Towers, dazed by the suddenness of this, could only say, "I hear it."

"Nine out of every ten ships I've got are under attack. The remaining one out of ten can't be reached. We don't know how they got inside, and there's nothing for us to do but fight to the finish. Keep out of it, Towers. I just want you to know what's going on. Your orders are to stay completely off this planet."

"Yes, sir. But—"

"You can't help us by getting stuck in it yourself."

"Yes, sir."

The screen went blank.

Towers glanced at Logan, who was talking to someone on his deck screen. Towers shoved his chair back. *Now* what? He couldn't sit here while Glossip and his men were slaughtered. Yet he had Glossip's orders to stay off the planet. Suppose he dropped leech-canisters on the Centran ships? The canisters would attach themselves to the hulls, and bore their way through. Then they would flood the ships with sick gas. Towers reached for the communicator, then paused. If he did that, he would *certainly* put the Centrans out of action, but who knew about the body chemistry of the locals?

Frowning, Towers reached for the communicator, and called his Intelligence chief.

A harried face appeared.

"Sir?"

"What's going on down there?"

"I've been wondering whether to call you. There's nothing *visible* taking place. But in the last ten minutes, we've had two reports of a terrific racket on the sound pick-ups, apparently from the Centran ships."

"They've been boarded. Let me know what happens."

"Yes, sir."

Towers's mind raced through the long catalog of special weapons and devices developed in fights on other planets. Wasn't there even *one* he could use? Suppose he close-trained lions and gorillas, with their controllers operating through the new visual linkage? Could they be counted on to attack the *locals* and not the Centrans? Was there time to do it? His mind whirled with calculations. So long to "awaken" them, so long to explain the situation to the controllers, so long to get them down to the planet. It would have to be cleared with Glossip, and the Centran troops would have to have some idea what was happening, or they would attack the animals as well as the locals.

Towers shook his head. There wasn't time.

The communicator buzzed.

"Sir," said the Intelligence chief. "Now the portholes are being knocked out of the ships."

"That fits. Let me know what else shows up."

"Yes, sir."

Towers's mind was racing. Suppose he flooded the Centran ships with yellowjackets? They would sting the Centrans. But would they touch the natives? Mild methods were unreliable. But anything *certainly* lethal for the locals would finish the Centrans, too. How to strike at *one* set of people fighting at close quarters without hurting the other set?

On the desk beside the communicator, the second hand was steadily sweeping around. If he was going to do anything, it would have to be done fast. But, with two sets of them tangled up in close combat, how—

For an instant, some remembered fact seemed to present itself, to show the problem in a clearer light; but it was for an instant only, leaving Towers blankly trying to recover what had flashed through his mind and gone on. Carefully, he groped along a vanishing trail of mental associations. Something about separating two sets of people? Something he'd seen down there? Had he ever seen anything, in the brief time since he'd been here—some instance in which the locals had reacted differently from the Centrans, been at a disadvantage, or displayed a weakness?

The communicator buzzed, and Towers snapped it on.

"Sir," said the tense Communications officer, "General Glossip."

The screen showed a chaotic flash of Centran troops, drifting powder smoke, swiftly-shifting groups of blue-green forms, now here, now there, always two or three of them to one of the Centrans. Before Towers's eyes, the Centrans went down. There was no panic. The troops were fighting. But their blows didn't land. And always, each Centran soldier was attacked by two or three of his enemies, appearing in a flash from nowhere, to strike from the side or rear, and vanish.

Glossip's voice came through. "Do you see this, Towers?"

"I see it. Listen, we can drop close-trained animals down there—"

"No time, Towers. By the time you get anything here, it will all be over. Do you see how they fight?"

"I see it."

"Are you recording this?"

"Yes, sir. Automatically."

"Then there's a record, at least. They'll believe it at headquarters. I think I see what happened here. They can change position so fast you hardly see them. If, as our men went out for their night exercise, carrying their rifles, these locals simply flashed through the shadows for an instant, near the

ship, long enough to contact the rifles, or do whatever they do, they would then have their homing objects, which the men would carry back into the ships with them."

Towers nodded dazedly. There it was— Yet another trap.

On the screen, Glossip straightened, and his voice came across clearly. "This is a direct order, Towers. Keep out of this. There's no time now for you to do anything. Better destroy that pack you wore down here, by the way. Good luck, Towers."

Then, with his attention elsewhere, the thought came back to Towers. He instantly focused his whole awareness on it, and abruptly the situation seemed to change form. Yes, it was too late for him to intervene physically. *But he could still send information.*

Glossip was turning from the screen.

Towers said, "General—*Lift your ships!*"

Glossip turned back. "They'll only learn—" He saw Towers's face, and whirled out of sight of the screen. An instant later, a high-pitched whistle cut through the din, in a combination of tones repeated again and again, and then the communicator buzzed urgently.

Towers, vaguely aware of Logan speaking earnestly into his own communicator, snapped down the Hold switch, put the new call on the screen, and saw his Intelligence officer.

"Sir, several of the Centran ships are lifting fast."

"Good." Towers called his Communications officer.

"Sir?"

"All the Centran ships should lift shortly. If they don't lift in the next two minutes, beam the order to lift ship, and either open hatches or smash some portholes. And keep lifting *as long as the outside air is thick enough to breathe.*"

The Communications officer blinked. "Yes, sir."

Towers snapped the Hold switch back, and there was Glossip, turned partly away from the screen, his face tense.

Frowning, Towers thought over his brief flash of insight. Everything *seemed* to hold together. Why should a mechanism develop if it wasn't needed? And hadn't it been shown by that humanoid that had attacked Glossip? But then, suppose he was wrong?

Towers snapped down the Hold switch, and called Gunnery. A major with a bulldog jaw appeared on the screen.

Towers said, "The Centran ships have been boarded by the locals and there's a chance that the locals may get control of some of them. If so, we want to be ready to destroy those ships ourselves."

"If you need us, sir, we'll be ready."

"Good." Towers switched back

to Glossip, found that nothing had changed but the background noise, which was now more screams than shooting, and called the Officer of the Watch. The earnest face of a lieutenant named Cartwright appeared on the screen.

Towers said, "Have you had any trouble from the active equipment locker? I left my grav pack there, and it seems to me the locals may have had opportunity to convert it into a 'homing object' while I was down there."

Cartwright's eyes narrowed. "I'll check on it, sir. It will only take a few minutes to find out."

"You don't plan to just open the hatch and look in?"

"No, sir. I'll seal the adjoining corridors before I do anything else."

"Go to it."

Towers switched back to Glossip, and at the same moment became vaguely aware that Logan was standing beside the desk. But Towers's attention was fixed on the screen.

Glossip was turned sidewise, gun in hand. His face bore the smile of the man who has been attacked by a robber, and now the robber is at his mercy. Glossip stepped out of range of the screen, and came back dragging a blue-green figure by the arm. The creature's face was twisted in agony, and both hands were pressed to the membranes, on either side of the head, that served as ears.

Glossip looked at Towers. "You were right! I'll get in touch with you as soon as we clean up the remnants!"

Glossip vanished from the screen, and Towers became vaguely aware of Logan's voice saying, "Sir, we no sooner got started on this than we unearthed a query from a Centran space depot, asking information about this planet's surface."

"Why did they ask about that?"

"It seems that a Centran scout ship broke down, and turned up at the space depot for repairs. An officer noticed a brownish shell stuck to the scout ship, apparently for decoration. It seems that some of the scout pilots will mount on their ship a plume, skull, or some other souvenir of the planet they've scouted, as a sort of trophy. This is strictly contrary to regulations, and the Centrans are cracking down on it. Well, this shell is stuck on with some kind of powerful adhesive, but the scout insists he didn't put it there. The officials at the depot want to know what the surface of the planet here is like, and what the chance is of a thing like this happening with no help from the pilot."

"Where is this stuck onto the ship?"

"On the underside, where the ship would naturally set down."

"How big?"

"Roughly a foot across."

"Sounds exactly like their favorite homing object."

"Yes, sir. We've been assuming the locals could use *any* large object. Maybe they can't."

Towers shook his head. "How much did you hear of what's going on down there?"

"Just the last few exchanges on the screen."

Towers described what had happened. Logan listened in amazement and shook his head. "Then it follows they *don't* need these shells to home on. Then why *did* they put one on the ship?"

"More peculiar yet, why did they put it where the ship would *land on it*?"

Logan said quietly: "The shell would break when they land."

"*That's* it."

Logan said in exasperation: "They apparently, in some way, familiarize themselves with the molecular structure of an object, and then they can home on it—guide themselves when they 'jump' to the place where the object is. Perhaps each object has a characteristic—call it a 'wave-state'—that the teleports can detect and use to guide themselves to the place where the object is. So, they take great pains to stick a homing object to a departing scout ship, and they stick it where it will be destroyed when the scout ship lands —*which is exactly when they will want to use it.*"

"Right," said Towers. "That's it, exactly."

"But how? Once it's mashed to bits in the landing, *that* will change the characteristic wave-form, won't it?"

"Yes, and tell them *that the ship has landed.*"

Logan looked startled.

"Otherwise," said Towers, "how do they know when the ship has reached another planet? It's *there* that they want to come out, not somewhere in between planets."

"And then they home on the ship itself? Yes, I see it. The molecular structure of the *ship* won't change substantially. The fact that it remains uninjured, and the shell is destroyed, suggests that the ship has set down. In that case, it follows that they *did* plan ahead. Even though they weren't seen, they were active *when the first Centran expedition scouted the planet.*"

Towers said, "Apparently they aren't lacking in the taste, or the ability, for conquest. All they've been lacking is opportunity."

Logan, looking stunned, sat down at his desk. "In the short space of time since that first Centran scouting expedition, these teleports have worked out a technique for getting to other planets, destroyed a Centran life-saving station, captured its crew, learned the Centran tongue, seized a quantity of Centran weapons and learned how to use them, surprised a Centran force sent to investigate, wiped out most of it, attacked an entire Centran planetary invasion force, and came within a hair's breadth of—"

Towers's communicator buzzed. He snapped it on, to see, through the open visor of a suit of battle armor, the serious face of Cartwright, the Officer of the Watch, who stepped to one side to show half-a-dozen blue-green bodies lying on the deck inside the active equipment locker—a long, high, narrow room with rows of clamp-fastener shelves on one side, and snap hooks on the other side. On one of the shelves lay the grav pack Towers had used on the planet. At the far end of the locker was the closed hatch leading to the outside air lock. Back out of sight of the camera was the corridor to the spray baths and the air lock to the interior of the ship. It was possible to enter the ship by any of several routes, but as a means to cut down the admission of germs and parasites, this was the route taken on returning from a trip to a strange planet, and it was the route Towers had used. On leaving the equipment locker, he had shut the inner doors that cut down air circulation—and the screen was now showing the view through this doorway into the locker, where the blue-green bodies lay like so many rag dolls. Half hidden under a muscular blue-green arm was what looked like a large shell inside a case of tightly-woven fiber that fit like a thick tire on a broad wheel.

Towers looked the bodies over carefully. They all showed plain evidences of having run into a terrific concentration of fire.

"Are there any more to the screen?"

"Yes, sir."

"What happened?"

"'We set up two mesh barriers in the corridors, in case anything came out of the locker in a rush. The first barrier was right outside the locker door here, and the second was back up the corridor with the guns behind it. I came up behind the first barrier to use a hand grapple on the locker doors. There wasn't a rustle from the other side as I eased the door open. Then there was a yell, a shower of darts, and the whole net bulged back as six or eight hit it at once. I was knocked flat on my back. A kind of shell wrapped with fiber—there it is on the deck there—hit the net and flattened up against it, and another of these natives materialized in the air on *this* side of the barrier. He had an armload of shells, and as I went down I could see him cast them down the corridor. I yelled 'Open fire!' That did it, sir. But if we hadn't suspected they were in there, we wouldn't have had a chance."

The scene drew back, to show a metal frame tightly fitted against the walls of the corridor, with a net, now badly torn, stretched so that it blocked the passage, yet at first was scarcely visible. The view swung around, to show more blue-green forms strewn on the deck.

Farther down the corridor was another frame and net, and, behind it, a pair of short-range nine-barrel fusion guns set up side by side with armored men prone behind them, and, behind them, another pair set higher on their adjustable mounts, and angled slightly upward.

Towers glanced back at the motionless forms on the deck.

"Is that all the attackers?"

"No, sir. I think we had fifty here for a moment or two. Apparently they decided it wasn't working, and left."

Towers thought it over in silence.

"Let's have a better view of that deck."

The scene tilted, and he was looking at motionless blue-green forms with many tiny oval fragments of shell scattered amongst them.

"That can't be the armload of shells you mentioned."

"No, sir. Maybe they took them back with them."

Towers fought down the urge to profanity. The active equipment locker, and that whole stretch of corridor adjacent to it, was now as open to attack as if it were part of the planet. By the same token, it was denied to Towers, except for armored men, and all that was needed was one slip, and the whole ship would be wide open. He didn't like the way the opposition traded blow for blow. It was painfully obvious who had the initiative, and there was no point stepping the fight up a little bit at a time, so as to make a staircase for them to climb by stages until they perfected their measures up to the level of Centra and Earth combined. What was needed was a blow delivered with a force they couldn't understand, from a direction they didn't expect. The difficulty was, the target could move from place to place with lightning rapidity. And since their technology was primitive, there was no way to strike at them through that. With due care, and enough shrewdness and force, over a long period of time, it would probably be possible to exterminate the whole race—provided they never succeeded in establishing themselves on another planet—but that would violate Centran principles, and deny the advantages that might conceivably come from an eventual change in the natives' attitude. And *that* was the crux of the matter. How to change that desire for conquest into something more like an honest interest in cooperation?

These thoughts went through Towers's mind in rapid succession, and he was only vaguely aware of Cartwright walking down the corridor, the visor of his armor down, to talk to the men at the fusion guns. Then an obvious fact penetrated to Towers's consciousness, and he called, "Did they touch your armor?"

"Yes, sir."

Before Towers could say more,

half-a-dozen blue-green forms appeared on all sides of the Officer of the Watch. The multiple short-range fusion guns let loose a murderous burst.

The attack was over as fast as it started. But amongst the sprawled attackers lay an unusually large shell. The Officer of the Watch, protected from the fire by his armor, picked up the shell and threw it the length of the corrridor. It apparently hit the net near the door to the equipment locker, bounced back into sight on the screen, and split in half when it struck the deck.

Towers studied it coldly.

Each half of this shell was as big as an ordinary shell.

Cartwright raised his visor and looked questioningly at Towers.

Towers adjusted the screen, and was fairly sure he could see traces of some dark substance along the line of the break in the shell.

"Why not walk down and just see if there isn't something like glue along the break in that shell?"

Cartwright walked down the corridor, filled the screen, and said, "Yes, sir. There's a hardened streak of some kind. Shall I smash the pieces?"

Towers thought it over. Every five minutes, there seemed to be some new example of craft and cunning. The teleports looked more formidable by the hour. When opportunity offered, they wiped out whole military commands at once. Against stiffer oppositon, they contented themselves with establishing a toehold, and expanding it by steps into a bridgehead. Towers had started out feeling an underlying sympathy he often felt for the objects of Centran planetary integration. But by now, the sympathy had congealed into loathing. Now there was this clever new stunt with the oversize shell. Had they tried this before, and found that the victims carried the broken pieces with other rubbish into another part of the ship, and a new section was opened to attack? Or was it a distraction, to draw attention from the fact that Cartwright's armor would provide easy access to whatever part of the ship that armor was in? Or was there some *other* clever booby trap involved?

"Better leave it where it is," said Towers. "I don't see that they gain anything by it."

"Sir, I'm just wondering, can they sense the relative positions of two objects they've 'learned'?"

"Maybe. But I don't think that's going to help them."

"But, if they could, there might be an advantage in introducing a number of such objects into a ship. Something similar to triangulation may be involved."

Towers nodded. "Maybe that was their reason. But they aren't going to get beyond this part of the ship if we can help it."

"In that case, sir, the sooner I

get out of this armor, the better."

Towers's eyes narrowed, then he smiled. "And if they can tell the relative position of different parts of that armor, when do you suppose the next batch of them will come through?"

"When I've got it about half off. I won't be able to defend myself, and if the fusion guns fire, I'll get hit, too."

"Right."

"Sir, suppose we put on masks, and fill the corridor with chlorine gas?"

"First, we don't know how fast it would affect them. Second, it would surprise them, but probably not so much that they couldn't get away—to spread the warning."

"It might make them more wary about coming through."

"That's the third reason why we shouldn't do it."

Towers considered this latest predicament. Before Lieutenant Cartwright could go back into the part of the ship that was safe, he *had* to get out of the armor. If he didn't, any part of the ship he went to would be unsafe. But to get out of the armor meant to open himself to attack.

"Sir, if you'd have them send up another suit, I could take this off piece by piece—"

"And have them come through when the piece you've got off is the breastplate? No, we'll get you out of there, but not dead, if we can help it."

At Towers's instructions, a false deck was welded into place behind the fusion guns. The fusion guns then drew back behind it, and two new nets were put up, in front of the guns. Cartwright cut away the old net, stepped up on the low false deck, hesitated, sat down beside the nearest net, and suddenly his feet were out of sight, then his legs, and he squirmed and twisted and then he was completely inside the claustrophobic space that had been left open under one side of the false deck. Since there was no room under there for anyone else, a teleport who came through there would wind up with the false deck embedded in his body. On the other hand, if he came through overhead, the false deck would serve as a shield.

As Lieutenant Cartwright squirmed out of his breastplate, there was an earsplitting yell, a shower of darts, a shell hit the first barrier, a blue-green form materialized behind it, to scatter an armload of shells, and the corridor was filled with the crisscrossing radiance of the fusion beams. The corridor was a shambles when the attack was over. A technician in armor cut through the lower edge of the net, the fusion guns made a barrier of energy overhead, and Cartwright crawled back to safety.

All that, Towers told himself, to get one man free of the attentions of the "natives."

As soon as the men were safely

out of the corridor, the ship was treated as if it had suffered heavy battle damage. The air was pumped out of the active equipment locker, the corridor, and all adjacent parts of the ship, back to the reinforcing walls. The locker and corridor were then completely cut out, and, plate by plate, they were cut up and melted down, in space. At the same time, in a nearby landing boat, a nervous surgical team dissected a number of the native dead.

While this was going on, a total of twenty-six more teleports appeared, in and around the corridor that was being disassembled, and were at once blown apart by their own internal pressure. But in the landing boat where the dissection was carried out, nothing interfered except the surgeons' uneasy urge to look over their shoulders.

Towers now went to a separate landing boat, to talk to Glossip.

Glossip, to Towers's surprise, was beaming broadly.

"It's all relative, Towers," he explained. "When you expect quick victory, a little delay seems like a setback. When you expect to be slaughtered, if you come out somewhere near even it seems like a victory. In this case, I was prepared to be finished off, following which this planet would have been subjected to methodical bombardment with nuclear weapons until that race of teleports was as close to extinction as brute force and persistence would bring them. Instead, that piece of advice of yours opens up new possibilities. It also demonstrates that Centra was right to make the alliance with Earth."*

Towers looked puzzled. "Was there any question about that?"

Glossip shrugged. "You've been busy, solving problems that some people don't know exist. Therefore, you've missed a few points that we can't overlook much longer. After this is over with, if it *can* be solved, you may find yourself up against a tougher proposition."

"I never hope to see a tougher proposition than these teleports."

"Well, Towers," said Glossip, smiling, "if you're able to beat them, it stands to reason that *you* are a tougher proposition."

Towers, puzzled and vaguely exasperated, decided to drag the conversation back onto the subject.

"Sir, that's what I'd like to get cleared up: How this collection of frustrated conquerors is going to be jammed back onto their own planet."

Glossip's air of well-being vanished.

"Jammed *back* into their planet? What do you mean, Towers? They haven't got *off* it yet."

"Yes, sir. But unfortunately, they seem to have thought that out in the beginning, before anyone was aware they existed." He described the scout ship, with shell stuck to

*See "Pandora's Planet," *Astounding*, September, 1956

it in such a way that a landing would break the shell. He described his and Logan's idea of how that had come about, and added, "Maybe Logan and I are wrong, but—"

"No," said Glossip. "It fits in with what's happened here. That's exactly what they *would* think of."

"Well, sir," said Towers, "we should know soon. Major Logan is tracing the rest of those scout ships. If we find, for instance, that one of them has landed on an oversize, warm, wet, roughly Earth-type planet, and if the scout ship has a few odd bits of shell stuck to its underside, then we shouldn't be surprised to find, before long, that any other ship that touches down there is likely to suffer a sudden disappearance of the crew and weapons."

Glossip shook his head in disgust, then the light of craft and shrewdness lit up his eyes. "Hm-m-m, Towers. Now, just suppose, instead of a *warm wet* planet—"

Towers smiled. "I've been thinking the same thing."

"What we want," said Glossip, "are two things. First, to get loose from this place, with a whole skin. Second, to jar the minds of these teleports onto something besides killing everyone they can reach."

Towers nodded. "Their standard procedure seems to have two stages: First, spread homing objects into the territory of the opposition. Second, attack to kill, with stunning shock-effect and overwhelming force. Considering the conditions on this planet, it must seem almost as natural as breathing."

"It seems to me that our idea, once we put it into action, ought to do something to this automatic procedure of theirs."

"Yes. Of course, a lot might depend on what the dissection shows."

"Yes," said Glossip. "It will be interesting to see just what that turns up."

The surgeons, after several long, nerve-wracking sessions, duly submitted a report that boiled down to a statement that the natives were typically humanoid in their body structure, with certain little-understood organs somewhat more developed than in the people of Earth or Centra—but that this was well within the limits of normally-to-be-expected variations; that there was a complicated digestive system, apparently designed to handle a wide variety of local foods. An analysis of the contents of the digestive tract was appended, with sketches and photographs to give some clue to the local diet.

Towers and Logan, and later Glossip, searched backwards and forwards through the report for some explanation of the locals' teleporting ability. But there was no explanation there. There was, instead, a long statement about the development of the skeletal and

muscular systems, and special adaptations for swimming, such as partial webs between the fingers and the elongated toes, eyes capable of being thrust forward under the brow ridges for purposes of better observation, a large chest with exceptionally powerful muscles, the absence of external ears, and speculation as to the hypothetical superiority, underwater, of the membrane that took the place of the external ear.

Towers skimmed over the question of streamline form typical of underwater creatures, but paid close attention to a description of an arrangement in the ear that permitted the mechanism to withstand comparatively heavy pressures, as the chain of small bones that transmitted sound vibrations came to rest inside a supporting cage of bone, while most of the external membrane itself was pressed back against a porous bony surface that apparently could support it at any depths likely to be reached in the offshore waters near the islands.

There was no arrangement for adapting to low external pressures, the report went on, apparently because there was little likelihood of experiencing them on the planet. There were no high mountains to climb, the planet's axis was vertical to the plane of the ecliptic, eliminating seasonal extremes, the weather seemed uniform, and the report theorized that in the event of unusually low atmospheric pressure, a sense of "unease" would be felt, possibly leading the humanoids to teleport to another locality, or to dive into the warm waters, where the resulting pressure would promptly eliminate any discomfort.

"Too bad," said Logan, "they didn't just evolve gills and have done with it."

"Probably wouldn't have worked," said Towers. "They'd have been in competition with the sea life, and it's formidable."

Logan nodded. "But at least we'd have understood which mechanism did what."

Towers leafed back through the report. "Whatever it is, the surgeons could have the organ used for teleporting—if there *is* a special organ for teleporting—right under their hands and never know it. But what puzzles me is—as far as it's possible to tell from this—*we've* got everything they've got."

Logan smiled. "Who knows? Maybe they could show us how to do it."

"Provided they'd stick around long enough without putting a knife in us."

"There *is* that difficulty. Well, what now?"

"The first thing is to find some way to get several tons of stuff they can eat off the planet and into storage. The trouble is, they can't eat *our* food, so we may have to bring food all the way from here to feed them."

"Sir, feed *them?*"

"So we can keep them alive while we bring them back from other planets."

"I thought the whole idea was to keep them from ever *getting* to other planets."

"The idea is to keep them from carrying out their program of conquest, without having to divert manpower from halfway around the universe to do it. What's the best way to stop someone from carrying out a program of conquest?"

Logan cast a belligerent look toward the planet below.

"Flatten them out. If necessary, kill them."

"That may be the *surest* way, if you can do it. But suppose you can convince them that there's no profit whatever in their program of conquest, that there is, in the nature of things, *nothing to gain by it?"*

Logan blinked. "Well— Yes, but—"

"In fact," said Towers, "couldn't you say a conqueror is flattened out and killed *as a conqueror,* once he discovers that the result of his clever schemes is likely to be *pure agony?"*

Logan looked at Towers attentively.

"How do we do that to them?"

The next few days brought word of the other Centran scout ships. They had separated, and all but one had so far found nothing worth mentioning. That one had moored alongside a large desolate chunk of nickel iron, and by pure miscalculation on the part of the scout, the ship banged into this floating chunk of ore before the scout got his beacon and claim-plate anchored in place. On returning, he was stupefied to find eighteen blue-green bodies, a large assortment of weapons, and eighteen unbroken shells, drifting alongside the ship which had a few fragments of broken shell still stuck to it, and innumerable bits and slivers drifting around loose. There was no other ship in sight, and the big chunk of ore offered no sign of an entry or exit. The scout blinked, uttered a fervent prayer, and lost no time getting photographic evidence. He then consulted his "Manual of Official Rules and Procedures," and found that he now had no choice but to report this airless block as an "inhabited planetoid." Finds in this category were so rare as to create a sensation when the report came in, followed on closer examination by massive censorship. Only by the authority of the Supreme Staff was the lid pried loose, and then Logan and Towers looked at the photographs and glanced at each other.

"Well," said Logan, "that proves it. They *can* teleport to a great distance, once they have a homing object to jump to."

"Yes," said Towers, "and it also shows us something else."

"They're eager for conquest. This scout scarecely left the ship and came back, and there they were."

"And they have a definite technique. They come through in a flash, one wave following another. When they're winning, there's no end of them. When they're losing, they stop coming through. *How do they know which to do?*"

"Maybe one of them flashes through, then goes back and gives the word."

Towers shook his head. "What if he doesn't live to go back? No, I've studied the films of that business in the corridor, and that isn't how it works. They come in waves. In the corridor here, *one* came through, and threw out a stack of shells. To each shell came another teleport, each carrying, as far as the field of view shows us, a shell under his left arm, the thinnest edge of it gripped between fingers and thumb of his left hand, and in one swift motion of his left hand, he flung this out."

Logan frowned. "Yes, but what—"

Towers yanked a large envelope out of a stack on his desk, pulled out a handful of blown-up photographs, selected a number showing the chaos in the corridor, the air seemingly jammed with natives, the fusion beams searing into them as they flung out the shells that would serve the next wave as homing objects. Carefully, Towers examined each photograph before handing it over.

Each photograph Towers selected showed a shell in the foreground. And each shell showed in its edge at least one small curved break.

"How," said Towers, "do they know when to come through, *and when to stop?* In the corridor, we have on the film upwards of forty of them in one attack alone. Some were killed and others got away. But the Centran scout, when he accidentally let his ship drift into the ore body and smash the shell, came up against only *eighteen* of them. *Plus* eighteen shells."

Towers glanced at the report of the scout. One plate showed the shells drifting in space amongst the shambles of eighteen bodies, and assorted rifles, splat guns, and grenades. The sight was horrible enough, but the nearest shells, lit up starkly by the flash that accompanied the shot, looked perfect and unbroken. He handed the report to Logan.

"Compare the shells that were followed by another wave of attack with those that were *not* followed by another wave of attack."

"Hm-m-m. Yes, I see."

"It's been a puzzle all along how they signaled the next wave. It *might* have been that they went back and notified them. It *might* have been telepathy. Or it might be that it's done by means of these shells. After all, why do they al-

ways use *them* when they come through? We know they can use other objects. Why don't they come through carrying a captured spanner from a Centran ship, or a captured Centran helmet? Why isn't it enough that they come through with a Centran rifle that another of them has 'learned'? What conceivable advantage is there to lugging this shell along?"

Logan said, "Let's see now. On some level of consciousness they 'learn', or familiarize themselves, with an object. This object apparently gives off some kind of signal that enables them to home on it. If the object ceases to exist, the signal ceases, too. But, if the object isn't actually *smashed,* if a small piece *is broken off,* then most of the object is still there—maybe the signal would still be transmitted, but the *character* of it would be altered." Logan looked up in astonishment. "It might be like a radio tone that abruptly changed pitch."

"Yes."

"And *that* would explain their using the shells. It's a little inconvenient to break a piece off a rifle or a helmet. Well, if so, we've finally got a way to trap *them* for a change."

Towers nodded. "If our assumptions are right, we should be able to hit them so hard it will jar this automatic-conquest habit down into their throats—where they will choke on it."

The following months passed under the painful handicaps imposed by the fact that the locals were on the watch to take advantage of any slip, and this added complexities to the problems of dealing with an unfamiliar planet that no one had thought of before. Dredges were sent down to collect edible plants for use later, and immediately ran head-on into the fact that the off-shore waters were thick with a honeycomb network of corallike structures, traversed only by various fish, the locals, and a kind of stretched-out alligator with long armor-tipped snout, numerous pairs of legs, and a highly-flexible body. While the coral dulled cutters and jammed machinery, the alligators specialized in punching through the sievelike containers that held the contents, to get at schools of small fish trapped amongst the vegetation inside.

Meanwhile, the natives pulled out cotter pins, hauled on sprockets and gears, and then swam down to locate the pieces, and tried to deduce what these things were good for. Small TV cameras attached to the machines showed what was going on. The coral was wearing out the machinery, the alligators were living a life of ease and luxury, and the humanoids were demonstrating a fantastic mechanical stupidity, as evidenced by the fact that they swam around the dredge, prodding it with shell-tipped spears, apparently seeking

the heart of the beast. But their idea of damage seemed accurate enough. Anything capable of being pulled off, they pulled off, and if it was big enough, they ran their hands over it, with a peculiar expression of concentration, suggesting that they were converting it into a homing object.

It was now up to the technicians to devise a machine that could either avoid or chew through and spit out the coral, resist the efforts of the alligators, and meanwhile stand off the locals. One difficulty followed another, and before it was over the Special Effects Team had devised an armored dredge with underwater cannon and shock generators, and enough circuitry to wire a city. This behemoth was a success until it chewed a path completely through the corallike barrier, to the outer sea. In through the channel came a beast like the offspring of a mammoth lobster mated to a giant squid. Whatever this creature was, the dredge had apparently intruded into its territory, and by the time it got through, the dredge was scattered over a hundred square miles of ocean bottom. Then there was nothing to do but build another one.

Glossip, meanwhile, had gotten hold of a nuclear furnace and steel works suitable for converting metallic asteroids into sheets, bars and tubes, and he was slowly and methodically running his contaminated space fleet in one end of this and out the other, where his crews labored to convert the sheets, bars and tubes back into spaceships. The frustrations were maddening, and meanwhile the Centran high command grudgingly doled out items that couldn't be reconstructed, and accompanied the dole with a flood of warnings about the mounting expense. All that made it possible was that the Centrans never used anything complicated where something simple would do the job. When they finally ran into absolutely impossible problems, a crew of experts would show up with the necessary materials and precision tools, and with much shaking of heads and wise advice for the future, put the finishing touches to the work.

At the end, Glossip had a fleet that was not much worse than the fleet he'd had before, and he could walk down the corridor without the thought that half a hundred teleports might spring out at him any minute. Towers by then had large quantities of local food on the way to various planets where scout ships orbited patiently. The local natives had a large collection of miscellaneous parts they were trying to somehow fire, explode, or otherwise put to useful service. Everyone but the natives was worn out, and no one was absolutely certain that they hadn't somehow insinuated a booby trap into the works somewhere.

Glossip, however, remained as

persistent as a river eating its way through a mountain, and Towers was kept busy adding refinements to what he thought might prove to be the only real surprise this race of teleports had ever experienced. But always some part of the plan was weaker than the others, so his work went on and on, until it finally reached the point where he had covered everything he could conceive to be possible, and for good measure, quite a few things he *couldn't* conceive to be possible.

The food was now at the planets, under refrigeration. The scout ships were ready to land. The planets were waiting patiently for whoever might care to come down.

Everything seemed as ready as it could be, so Towers gave the signal for the first scout ship to set down.

Seated at his multiple screen, Towers looked from one to another of the landing fields. One view showed slush a foot deep, with occasional showers of sleet lashing past almost horizontally. At the top of the screen, little images of comparison gauges showed atmospheric pressure far below that on the teleports' home world, while, thanks to a relatively small planetary diameter, the surface gravity was painfully higher.

Another planet had a heavier gravity and thinner atmosphere, with impressive ranges of volcanoes belching clouds of sulfurous fumes over a landscape of cracked earth and bubbling pits of mud, while occasional patches of scrawny vegetation gave the only sign of life.

One of the colder planets had something extra, in the form of humanoids whose protruding muzzles and all but nonexistent foreheads were somewhat compensated for by thick fur, exceptionally powerful jaws, and sharp teeth. Considerable numbers of these humanoids, their small eyes glinting shrewdly, were busy behind the protective rock walls at the edge of the landing ground. Eagerly, they were breaking bits off the edges of large brownish shells, and then carrying the shells and broken-off bits to a Centran bundled in furs, who in return handed out copper disks the size of saucers. These disks the humanoids carried through a nearby stone doorway, to emerge beaming, with handfuls of steel traps, hatchets, knives, and small sacks marked with the Centran word for salt. The Centran who accepted the broken bits and the shells dropped the bits in a leather bag, and handed the shells to humanoid children, who tucked them under their left arms and darted off, the grown-up pounding after them. As the delightful game went on, shells broke and were discarded, and the shaggy humanoids began glancing around eagerly for whole shells that might have been overlooked.

Towers, watching the scene on the screen, suddenly watched more intently.

Over the landing ground, sinking slowly through a brief shower of sleet, the first of the scout ships was coming down.

Slowly the ship settled into the slush, and its weight came to rest on the shell fixed to its underside. Beneath the slush, the shell crushed on the hard-packed pebbly surface.

Towers watched intently. How long would a warlike race stay alert for the possible conquest of a planet?

Around the scout ship, heavily-armed blue-green figures suddenly appeared, shells clutched under left arms, faces lit with a look of determination and triumph.

Then the powerful gravity took hold. The wind lashed out with a fresh volley of sleet. The slush extracted heat from bodies accustomed to equatorial waters. The thin atmosphere declined to push back the internal pressures in lungs and body cavities.

The expression of triumph vanished in a look of shock. Hands were clasped over eyes and ear membranes. Mouths opened. distended chests deflated. The look of shock gave way to agony.

From the low rock walls along the edge of the field came a shout. Shaggy figures rushed out, the sleet striking harmlessly against thick fur, the slush seeking in vain to draw heat from insulation perfected over ages of exposure to varying extremes. The heavy gravity and thin air no more troubled them than seaweed and water disturb a fish, and now the first shaggy figures reached these peculiar blue-green things, hesitated, then put their minds on what really counted, grasped the shells and broke off the first small bits.

An instant later, *other* blue-green things appeared, with *other* shells.

More humanoids came splashing through the slush, each seizing one of the precious shells, and each carefully breaking off a small piece.

More blue-green shell bearers appeared, to announce their arrival with gruff coughs and screams.

Here was wealth unending!

The landing ground swarmed with shaggy humanoids.

The blue-green figures multiplied, in successive waves of horrified shock.

When an unmanageable catastrophe seemed certain, an amplified voice boomed out in the local tongue that only those who got back before the sun bit the edge of the world could trade their shells. For the time of darkness and moon, a new kind of shell was to be given out.

The humanoids squinted into the storm with practiced gaze, and left in a rush across the field.

Centran stretcher-bearers now filed out, to carry the writhing blue-green forms to a ship at the far edge of the landing ground,

which was to serve as combination pressure chamber and first-aid center. Meanwhile another screen showed a landing ground on a different planet, where another scout ship was just settling down. The first scout ship now lifted, to be melted shortly into scrap, as the crushers moved out to grind up the pebbly surface where it had landed.

Towers watched thoughtfully. Now the question was, would the teleports be able to use their ability to escape?

Logan said finally, "Either they're in no hurry to go home, or they can't."

"When they're startled, they apparently can't use their power. I imagine they've never been startled like this before."

"In that case," said Logan smiling, "*we* will supply the transportation."

"And everything possible will have to be done to learn their language. Meanwhile, we may be able to find out something more about this planet."

While the ships carrying the dazed teleports were on their way back toward their home planet, the disguised pickups were already there—little things that had drifted quietly down in the night. In the waters close off shore, careful reproductions of the stretched-out alligators served as reconnaissance vehicles, and it became clear that the locals had a number of secrets they hadn't yet disclosed.

On the basis of all Towers had seen, it was evident that the natives teleported out of the water onto the land, or from one place on land to another place on land, but they hadn't been seen to teleport into the water. The trouble was, there were times when a number of natives vanished at once, and didn't show up elsewhere. What had happened? The obvious answer seemed to be that they had gone into the water somewhere out of sight of the pickups. But then, why were they never seen to do it? There were times when a raiding party surprised a band of locals on land, and Towers had watched fights where the sequence of shifts in position was a fantasy of rapid flickerings from spot to spot as the local inhabitants tried to convert a superiority in known local positions into an advantage that would place them behind the attackers for just a second or two. This rapid shift in position was never seen in the water, the only maneuvers there being fancy swimming or sudden escape to a location on land.

Glossip, listening to Towers's report on the situation, sat back, frowning.

"Where," Towers was saying, "do they go? Our coverage, on land, is about perfect."

"Somewhere, Towers, they've got a cavern, or a set of hollowed-

out tunnels, that we haven't found."

"If so, we can't detect them."

"They might be too deep to detect."

"Well, you may be right, sir. But there's another possibility."

Glossip looked uneasy. "What?"

"Suppose that some tens, hundreds, or even thousands of years ago, another race capable of space travel landed on this planet?"

Glossip winced. "You think when these teleports vanish completely, *they've going to another planet?"*

"It's a possibility, sir. You notice how neatly they responded to the arrival of the scout ships. It almost seemed as if they'd had *practice."*

Glossip thought it over without enthusiasm.

"In which case, Towers, we may run into them on *another* planet."

"Yes, sir."

"Then we'll have to study them continuously, to learn everything we can. We don't want to be unprepared a *second* time. But—if they *have* another planet, or several other planets, mustn't they have experienced already the shocks they came up against this time?"

"Probably some of them would have experienced them, but *those that did would have died.* Really severe conditions stop them from teleporting, and when they can't teleport, how do they get back to let anyone know what's happened? In their case, the bearer of really evil tidings can't travel."

"Then the race would end up only on planets fairly well suited to it, and would be denied knowledge of planets *severely unsuited* to it."

"Yes, sir. And with their lack of adaptability, minor changes could make a planet severely unsuited to them."

"We'll have to send out a warning on planets of this type. Luckily, we're not too anxious to acquire planets of this type. Well, Towers, I hope you haven't noticed any other little anomalies."

"There *is* one other thing that has us puzzled."

Glossip looked apprehensive. "What's that?"

"According to our picture of this, when they teleport, either from water or air, there should be a *clap,* as the air rushes in to fill the space vacated."

"There's *no* sound, so far as we've noticed. Except for a clatter, when these shells drop to the deck."

"But, you see, they *vacate* a space, so why isn't there a clap as the air rushes in to fill the empty space?"

"It follows the space must *not* be empty."

"But in that case, sir, they evidently *replace* the air when they depart. How? All we can think of is that they teleport in *one* direction, and air instantaneously goes in the other direction. Air from the space to which they teleport

fills the space which they empty."

Glossip looked exasperated. "As soon as we try to work out the details of this, Towers, our troubles multiply. Look here. *If* they do it that way, it follows that they vacate the space into which they teleport their own bodies. We could do without this complication. It's bad enough that they can teleport *themselves*. What do we get into if we find they can reverse-teleport *objects* in the opposite direction?"

Towers shook his head.

"At least, we've never seen any sign that they do that. We've never known them to arrive in anything but empty space—that is, space empty so far as large bodies of solids or liquids are concerned. It seems to follow that, for some reason, they can't do it."

"Then," said Glossip, looking relieved, "that solves *that* problem."

"No," said Towers regretfully, "it just shifts it around a little.

"We've never known one of them to teleport anywhere without coming out in empty space. We've supposed that they get a signal from their homing object. That seems to make sense. But how do they know *whether the space adjacent to that homing object is clear or not?* Is the signal affected by the physical objects in its vicinity?"

"Maybe," said Glossip, "they just try to come through, and if there isn't enough empty space, they can't do it."

"Yes, sir. But no matter how you slice it, if there's *any* signal picked up, either by trial and error, or their conscious or subconscious faculties, it follows that, to that extent, they've got a kind of radar operating in the vicinity of any homing object they've managed to plant in somebody else's territory."

Glossip thought it over, and swore. "Well, we can count on it, any time a life form has an advantage, it will wring out the last drop of gain, at the expense of other life forms. Let's just hope the return of their teleport invasion force has the effect on the rest that it ought to."

When the first of the ships arrived, Towers watched intently as a special landing boat, covered with a thick tarry gunk, set down on one of the islands.

There was an instantaneous appearance of blue-green figures surrounding the ship, and they at once smacked their hands against it. Their hands instantly sank into the gunk, and when they tried to pull loose, they were stuck fast. They promptly vanished, leaving a number of hand-shaped holes in the gunk. They reappeared with an irritated look, and changed position rapidly, apparently expecting someone to open fire. Instead, after a brief pause, a section of the ship began to exude more thick sticky substance, and a massive hatch swung open, the edges drawing out

long bluey strands that broke, to hang in a curtain of large drops on threads and ropes of gunk. From the sides of the hatchway, streams of gunk oozed out. From inside, emaciated blue-green figures, bandaged around the ear membranes, some of them with bandages over their foreheads, eyes, and other parts of their bodies, staggered forward on slatted duckboards, and dropped unsteadily to the ground.

The teleports outside stared, rushed forward as if to get at the interior, got a look into a black chamber plastered top, bottom, and on all sides with a coat of thick sticky gunk, with nothing in there that *could* be touched except the easily disposable duckboards, and then several rushed forward and thrust their hands determinedly into the coating over the outside of the hull. After a few moments of pressure, they jerked back with a startled angry look. Their surprise evidently affected either their teleporting ability or their presence of mind. Instead of vanishing and reappearing at a distance, they pulled back, drawing out long strands of thick sticky adhesive. On close examination this adhesive turned out to have numerous small pointed objects in it, some straight, some curved, and many with ends like fishhooks. A quick look into the holes from which their hands had been withdrawn disclosed what appeared to be parallel hairs lying on the surface of the gunk underneath. A hard pressure against these produced screams, a sudden jump backwards, and the brief emergence of parallel razor-sharp edges. A glance at the underside of the ship disclosed short gunk-covered legs, not only hard to get at, but probably disposable. Another look inside seemed to offer no better prospects. The structure of the slowly oozing gunk couldn't be learned, because it didn't remain constant, and nothing *else* could be reached.

Meanwhile, the returning teleports were now outside the ship, and those who had stayed at home stared at them incredulously, and began to ask questions. The returnees tapped their bandaged ears. The local teleports pointed, vanished, and reappeared after a moment. The returnees spoke moodily. The locals looked shocked. They pointed at the sky, at the sea, smiled blissfully, and turned their palms upwards. The returnees looked sour, made wavy motions with their hands a foot or so above the ground, raked the air with their hands, picked up a handful of sand and hurled it through the air, coughed. They silently portrayed men freezing to death in a blizzard, with the added attraction of trying to keep their ears from bursting and their eyes from popping out of their heads.

The locals looked incredulous, and began to argue.

Just then, a loud voice issued

from the ship, in the local tongue:

"Whoever wishes to visit a distant world, toss your shell into the ship. We will let you know when it's there."

The locals vanished.

The ship stayed where it was.

The locals reappeared with guns, and opened fire.

The voice spoke again:

"The darts do no damage, because what they strike is either too soft to be hurt, or so hard it doesn't matter. You waste strength you should save for enemies."

The teleports vanished.

The ship stayed there.

The teleports reappeared, ringing the ship, each bearing a shell which he pressed hard against the tarry surface.

Here was the real test of the Special Effect Team's carefully compounded gunk:

The shells fell off.

The voice said patiently, "The shells must be placed *inside.* Then we will deliver them."

For the first time, the locals looked jarred, and glanced at each other, to exchange angry comments.

Meanwhile, those who had just returned were walking around, feeling of bushes, dropping to their knees to place their hands flat on the sand, walking into the water to let it lap gently at their feet. Abruptly, one of them vanished, to reappear six feet away, beaming.

Amongst the locals who hadn't left the planet, disorder had now reached the point where some vanished, to reappear uncertainly with guns.

Glossip, watching the screen with Towers, said, "You've done it, Towers! I never hoped to see *them* in confusion."

"They've been able to fit everything else into the framework of conflict, which is apparently their speciality. But whether this confusion will spread, or—"

A large blue-green figure appeared, wearing a headdress of shells of pink and gold, raised his hands, and in the abrupt silence, spoke a single word. All of the locals, except this entity and the returnees, vanished; then one or two of the returnees disappeared. The one with the headdress remained, looking at the gunk-covered ship with no very pleasant expression.

The voice spoke from the ship: "More people may be returned from other planets later. Those who wish to travel there may place their shells within."

The entity with the headdress started to speak, changed his mind, glared, and vanished.

Glossip beamed. "Well, Towers, that may not be victory, as yet; but, after what we've been through, it's highly satisfying to get a draw out of it."

"Provided we're careful, we ought to get that much, anyway.

Meanwhile, they can't help but learn, from those who've come back, just what they risk when they make a jump to invade another world. Who knows? It might change their attitude."

"That's what we've been trying for; for just between you and me, Towers, by now I'd be well content to leave them bottled up indefinitely. I can do without these manifestations of psychic power, if you know what I mean."

Towers nodded, happened to glance at a scene of the planet, coming in on a screen across the room, and frowned.

Glossip was saying, "It's a relief, at least, to find that material means and devices, with some careful thought, can beat psychic power. But still—"

Towers looked at the screen again. What the deuce was that, anyway, but a kind of mechanical clairvoyance? As a matter of fact, when you thought about it, how did any of the achievements of advanced technology differ from what psychic powers were supposed to do? And, come to think of it—"

"General," said Towers, "what did you say it was that beat those teleports?"

"Why, material means and careful thought," said Glossip. "What else? Certainly *we* have no psychic power."

Towers thought it over. What did "psychic" mean but "not in the realm of the physical?" And what was "power" but "that which does work?" If a man could do twice as much work with a machine as without it, the extra work was naturally credited to the machine. But where did the *machine* come from? *First,* somebody had to *think,* and get an idea. Therefore, ultimately, the extra work done by the machine could be credited to the *thought.* But thought was "not in the realm of the physical." Therefore, since it did work, it was power; and since it was not in the realm of the physical, it was psychic; and if that didn't make it *psychic power,* what would?

Glossip was looking at Towers wonderingly. "Why, Towers, what do you have in mind?"

Towers shook his head. There were *some* things it just didn't pay to try to explain. "I was just thinking, sir, these people have been operating a kind of trap, based on their psychic power. It occurred to me—it would only have been justice for them to catch a race of wizards in their trap."

Glossip smiled.

"I'd certainly enjoy seeing a thing like that, Towers. Unfortunately, such things are too good to be true. They don't actually happen."

Towers nodded. "Maybe not, sir."

But he wasn't so sure. ■

MIRROR, MIRROR, ON THE WALL

Whatever it is that makes a Star, it isn't something you can measure with spectroscope, Geiger counter, or photometer. Maybe it takes a different sort of instrument . . . ?

R. E. ALLEN

The three men seated around the large walnut table gazed hopelessly at the fourth man lounging on the sofa at the far end of the office. Finally, one of the men at the table shook himself, reached forward, ground out his half-smoked cigar in the large ornate ash tray and addressed the man on the sofa.

"Mannie, you've *got* to be kidding. You've had your little joke. Tell us you're putting us on."

Mannie shook his head, slowly.

The second man at the long table joined in. "Mannie, baby, we've been friends for a long time. Right? We trust each other. Right? We wouldn't kid each other. Right? Now I ask you, as a friend, why do you do this to me? These other two"—his head indicated the two men at the table with him—"I can understand. But why *me,* Mannie? Why would you do this to *me?* Bert, J. J. and I, we all depended on you, Mannie. *I* depended on you. You've come through before. I ask you, baby, now when the chips are down, why do you stab us in the—"

The third man at the table held up his hand. "Be quiet, Al. Insults won't help us." Al fell silent, his eyes raised in supplication to the ceiling.

J. J. continued, his voice quiet, his fingertips together at his lips, as though he were praying. "Let me review the situation. Maybe Mannie misunderstood us."

Mannie smiled and shook his head again.

"Amalgamated Productions is in trouble," J. J. went on. "The stockholders are screaming, but we can pull it out. All we need is one big hit. So, we've got this property. 'Helen of Troy.' It's got everything going for it. A best seller. History, love, sex, war, gore—the works. It even has an anti-war theme. We budget it at twenty million. A new 3D process. A cast of fifty thousand. Male leads that will have the women breaking down the doors to see the picture. We've got Sir Laurence, Charlton, Warren, Rock, Sir Alex, Marlon, Kirk—all signed. Nothing like it ever before." J. J. paused in awe at the thought.

"But, the key to the whole picture is the female lead, Helen." J. J.'s finger jabbed the air, underlining each word. *"She has got to be believable.* The word gets around. *Everybody* wants to play it: Elizabeth, Ingrid, Natalie, Raquel, even Ava says she will leave Spain to do it. They came crawling to us. We take our pick. We're rolling. The sets are built. We build Troy just like it was—even better than it was. Not once, but twice, because the burning didn't look spectacular enough the first time. Then what happens? The female lead—I won't allow her name to be mentioned in this office—comes to us and tells us that in about six months she's going to have an addition to her family. A little bundle from Heaven that's going to cost us a bundle. So we go back to the others that wanted to play the part, but they're all committed. The bankers threaten to withdraw their money. The stockholders are screaming even louder. It's costing us fifty thousand a day with the cast and crew on stand by." J. J. closed his eyes as if the horror of what he was describing was too great to contemplate.

"And then I came to you—" said Mannie helpfully.

"And sell us on the idea of using an unknown. You point out the publicity value—just like Vivien for the part of Scarlet O'Hara. You say give you a week and you'll come up with her. Frankly, if it hadn't been for your reputation of coming up with new talent I would have tossed you out on your ear, but we agree. Today you come in here bringing that girl sitting out there in the next room. Girl, I call her. She looks more like a boy. A ragamuffin. A nothing. A— A—" Words failed him. J. J. rose and walked to the door and opened it. He looked out at the girl sitting in the next room for a long moment, closed the door quietly and walked back to his seat, shaking his head.

"I could quote Marlowe," he said. " 'Was this the face that launched a thousand ships, and burnt the topless towers of Ilium?' We need the most beautiful woman in the world and you bring us a . . . hippie. A flower child."

"J. J.," Mannie said, standing up. "The most beautiful woman in the world is *not* what you asked me to get. You told me that you needed someone who *was* Helen of Troy. Helen, the most desirable woman in the world. The woman that kings and princes lost their heads over, that nations went to war over. That girl out there can be Helen, believe me. She'll be greater than Ingrid, or Greta, or Kim. They were nothing—until they got in front of a camera—then something came across. Star quality, or something . . . what it is, I don't know. But that girl has it."

J. J. shook his head. "Mannie, I know you've got a fantastic reputation, but this time you missed the boat. That girl out there is not Greta, or Kim, or Ingrid, or anybody." He stood up and walked toward the door.

"Just a minute," Mannie said. "You've got a sneak preview out in the valley this evening, haven't you?"

J. J. turned and looked at Al, who nodded. "So?" J. J. asked.

Mannie looked at his watch. "We just have time then. I'll tell you what. Take the girl down and shoot a test on her. Take the test out to the sneak and run it as a trailer. Call it 'Star of the Future' or something. I'll stand or fall on the reaction of the audience. If she flops, I pay for the test. If she doesn't, you pay for the test plus my fee."

Bert, Al and J. J. looked at their watches.

"There'd be no time to cut it," said Bert.

"Run it as you take it."

"We wouldn't have time for fittings for costumes," said Al.

"Shoot her as she's dressed."

"What—"

"I still say we should have looked at the test before we sent it out there." For the tenth time Al looked at his watch.

"There just wasn't time," Bert said. "It just barely made the break as it was." He got up and began to pace up and down the room. "We should have gone out there."

J. J. started to light another cigar but then laid it to one side. "Will you stop looking at your watch, Al? I told Chet to call the minute he had an indication what the reaction was. Besides, going out there would just have been a wasted trip. I've got to fly to New York in the morning and talk to those bankers. This way I get an extra hour of sleep." He and Al watched Bert continue his pacing.

The phone rang. They came to attention. J. J. leaned forward and flicked the switch on the speaker phone. Sound filled the room. They heard a scream, then the sound of something breaking, then a voice.

"J. J., are you there? Can you hear me?"

"Yeah, Chet. Go ahead. What is going on out there?"

"It's a madhouse. I've never seen anything like it. Where did you find— LOOK OUT." There was a crash of glass, then silence. Then the voice resumed. "Somebody just broke the side of the telephone booth. This is fantastic . . . unbelievable. I tell you—"

J. J. roared, "Chet, make sense. What's happening out there?"

"They showed the trailer. When it was over, there wasn't a sound. You could have heard a pin drop. Then somebody cheered. The whole audience stood up and cheered. Then somebody said they should show it again. They started to stamp on the floor. You know. All together. I thought the place was going to fall apart. The manager came out and told them that they would have to clear the theater, and when they heard that they started to break up the place. They tore out the seats. The manager called the cops, but they couldn't do anything. Then they broke into the projection room and they're making the projectionist run the trailer again and again. The riot squad is on the way, but I don't think that they'll be able to do anything either. Who *is* that girl, J. J.? Can I meet her? I've worked for you for a long time J. J. I've never asked for anything before. Look . . . I've gotta meet her . . . I tell you I—"

J. J. flipped the switch and the three men looked at each other in the sudden silence. At last Bert said, "Chet has a wife and five kids that he's just crazy about."

"Yeah," said J. J. He opened the top drawer of his desk and took out a large folding checkbook and began to make out a check.

Al and Bert watched him as he tore it off. "I would have sworn that Mannie was off his rocker," he murmured. "I don't know how Mannie does it. I just don't know *how* he does it.

In his office, Mannie sorted slowly through the morning mail. His secretary could have done it but he enjoyed doing it himself. It gave a good purposeful start to the day. He opened the envelope from Amalgamated Productions and looked with satisfaction at the check with J. J.'s name scrawled at the bottom. Next he opened a large manila envelope from one of the talent agencies and took out the pictures that were inside. He swung around to the large table behind his desk and carefully laid the pictures out in even rows.

He swung back to his desk, opened the lower right-hand drawer and took out a forked Y-shaped stick. He stood up and holding the stick in both hands, began to pass it over the pictures, pausing briefly over each one.

Over one of the pictures, the stick seemed to come alive, bobbed violently, and despite Mannie's efforts to hold it upright, pointed straight down. He put the stick to

one side, picked up the picture and sat down at his desk.

He pressed the button on his intercom. "Honey, get me Bill Williams over at Super-Sound Records." He leaned back in his chair and waited patiently until he was connected.

"Hello, Bill. Mannie here. Yeah, fine. Listen. You know you told me that what you needed was a new singing group that could make it as big as the Beatles. Yeah. Well, I've found them for you. Your offer still stands? O.K. They call themselves the—" Mannie turned the picture over and looked at the name on the back—"the Fantastic Flying Purple Grape Machines. Yeah. I *know* it's a crazy name. So is the Beatles, but believe me, Bill, these kids—" ■

IN TIMES TO COME

Next month's issue leads off with the first part of a two-part novel by Mack Reynolds—whose specialty has been political intrigues, complications and reactions. "Cosmocorp" is Mack's specialty having fun and games.

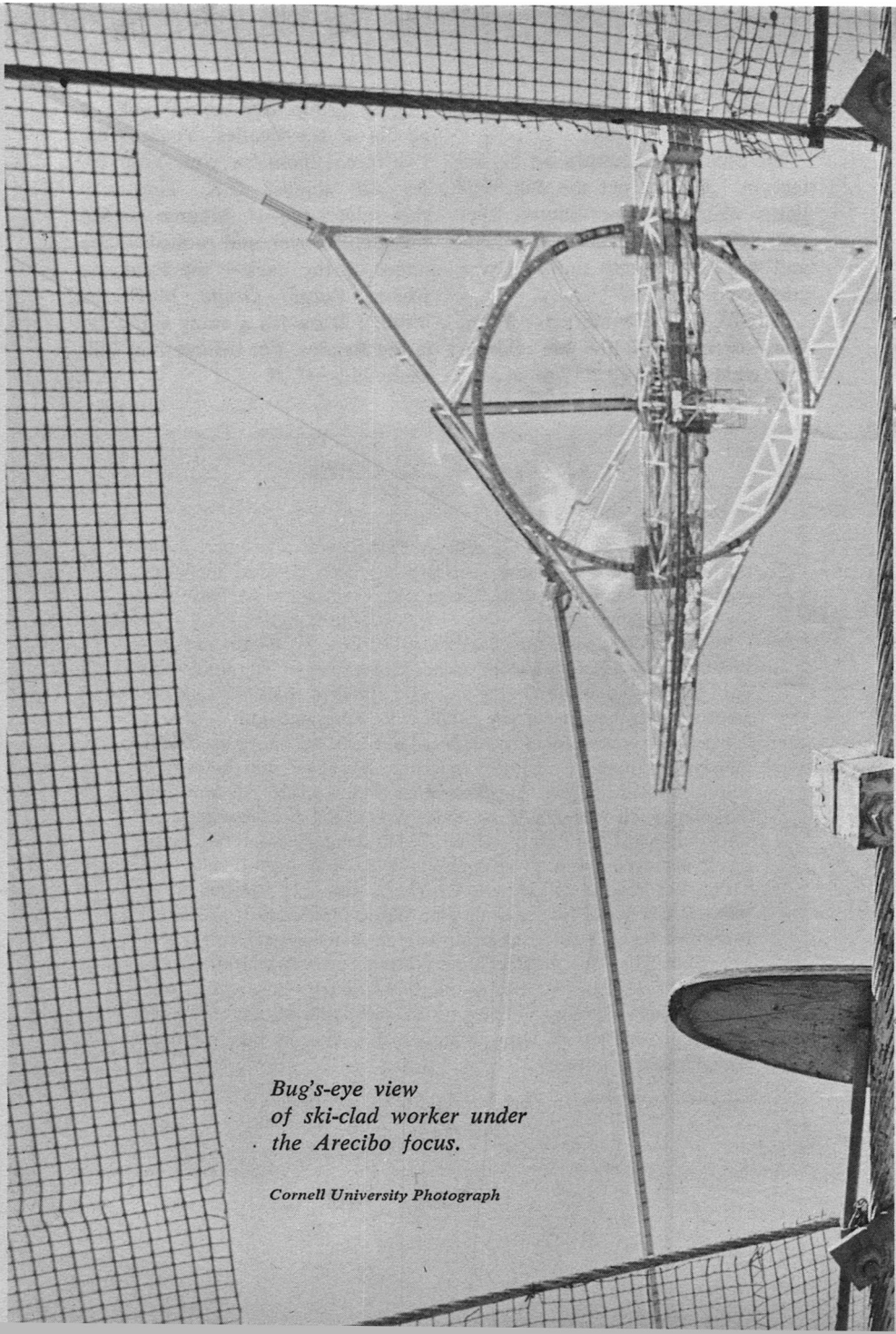
In the spy business, one of the complications that's bothered professionals since before history was first scratched in clay lumps has been the double agent. Or the spy who switched sides. Or quit the game because he decided the candle wasn't big enough.

Mack, of course, rings variations—but he's got more variations than you'd think of. In the first place, his agent quit before he started instead of after. But The Other Side wouldn't let him quit the offered job with The First Side. Which got more complicated when instead of being an unwilling double agent, he wound up being a sort of fifth column all by himself—a five-way agent!

Puzzle for your consideration between now and Installment I: What forces would like to see a One World Government and what *four* other forces would be anxious to stop such a system? We'll give The First Side—the great communication and transportation corporations would dearly love a unified set of laws and regulations, under a single world government. O.K.—now who wouldn't want it?

With all four forces assuring him he was going to be a multiple agent Or Else, naturally. . . .

THE EDITOR.



Bug's-eye view of ski-clad worker under the Arecibo focus.

Cornell University Photograph


THEY'RE
TRYING TO TELL US
SOMETHING

A two-section discussion of the most mysterious stellar bodies yet found—the pulsars. This section discusses the "LGM Theory"—the Little Green Men theory. Are they the immensely powerful radio signals of an alien intelligence . . .?

THOMAS R. McDONOUGH

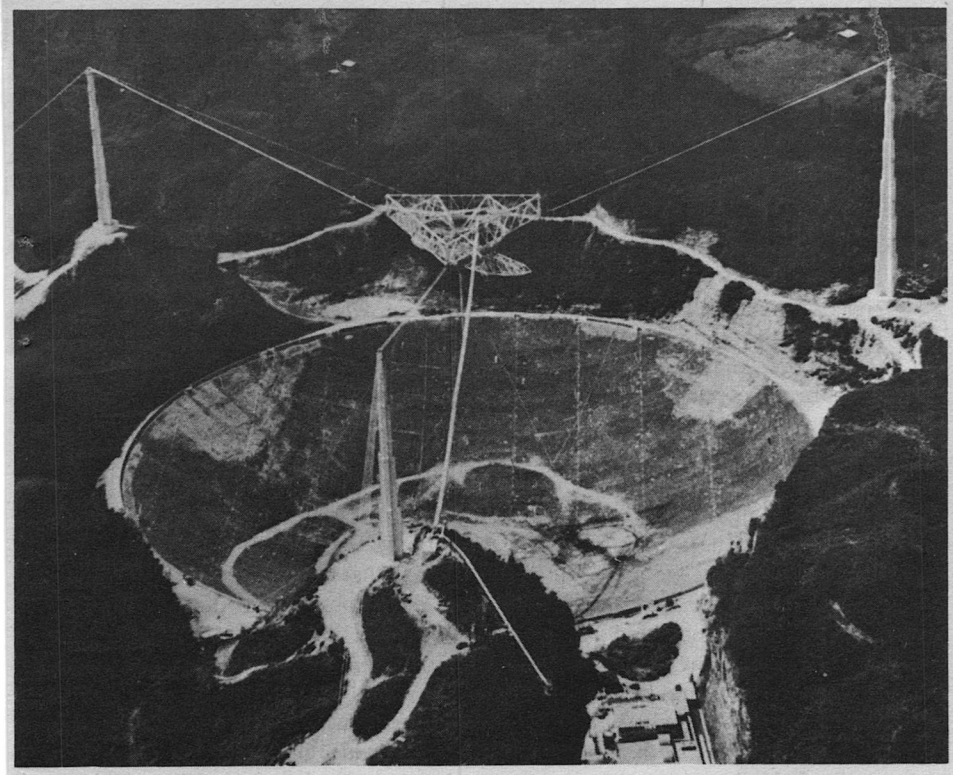
Part 1

In the summer of 1967, a young Irish colleen by the name of Jocelyn Bell quite possibly became the first earthling ever to receive the broadcasts of a nonhuman civilization.

The University of Cambridge's Mullard Radio Astronomy Observatory had just completed an antenna resembling hundreds of dissected TV antennas spread over five acres of British soil. The array was hooked up in a way that allowed it to scan a large chunk of Her Majesty's sky, and was intended to study the familiar run-of-the-galaxy natural radio sources which populate the universe.

Miss Bell was a member of a team of researchers under the direction of Dr. Anthony Hewish, and she'd noticed some odd pulsating noise being picked up by the receiver, like the kind that spoil TV programs while turning radio astronomers' hair gray. It wasn't the sort of thing you'd seriously expect to be anything more profound than interference from someone's Model T, but they soon noticed that the signals emanated from a point in the sky fixed with respect to the stars. This ruled out the possibility of an earthbound radio source, but with all the hardware tossed into the skies by space programs, who was to say it wasn't some human space probe?

There was a good precedent for their caution. In 1960, at the National Radio Astronomy Observatory in Green Bank, West Virginia, Dr. Frank Drake conducted the first deliberate search for radio broadcasts of extraterrestrial civilizations, Project Ozma, "named for the queen of the imaginary land of Oz—a place very far away, difficult to reach, and populated by exotic beings." There being only limited time available for the search they weren't able to point their telescope at every star in the Milky Way. They narrowed the search down by considering which of the nearest stars would be the most likely abodes of life, and when pres-



The world's largest telescope—Arecibo's thousand-foot dish. The Arecibo Ionospheric Observatory is operated by Cornell University with the support of the Advanced Research Projects Agency under a research contract with the Air Force Office of Scientific Research.

sures from people wanting to do more conventional observations were allowed for, they had time to observe only two stars. The wonder is not that they only looked at two stars out of our galaxy's hundred billion, but that they were permitted use of the expensive instrument for such an unlikely task. Time, Buck Rogers, and Sputnik have worked wonders for man's skepticism.

They'd hardly turned the scope onto one of the target stars when they detected strong, artificial signals. It's not difficult to imagine their excitement, but they refrained from jumping to conclusions. They never regretted their caution, because they eventually learned that

they'd succeeded only in picking up some terrestrial source such as a secret radar-jamming signal. As you may deduce from the conspicuous absence of front-page stories headlining their work, these were the only artificial signals they detected. Thus endeth Project Ozma.

History didn't repeat itself. Hewish and his colleagues observed their signals for many months, and found that even during this time, the position of the radio source remained unchanged in relation to the stars. This ruled out the possibility of the source being a manmade space-probe, radar signals bouncing off the Moon, or any other object in our solar system.

They naturally wondered if any more such oddball sources existed. Knowing now what kind of signals to look for, they quickly found three more pulsars—as these objects are now called—in different parts of the sky, with remarkably similar behavior.

The Hewish group held off their announcement of the discovery until their paper appeared in the February 24, 1968 issue of the British scientific journal, *Nature,* under the lurid title, "Observation of a Rapidly Pulsating Radio Source." Then, pandemonium reigned in the astronomical world. (This may be an extreme way of describing the scientists' emotions, but when a scientist says "Rather interesting, that, "it's equivalent to an ordinary mortal whooping jubilantly and jumping for joy.) For some time thereafter, astrophysicists ignored their *Nature*s and their *Astrophysical Journal*s in favor of a glimpse at the latest hastily-Xeroxed New York and London *Times* interviews with the pulsar people. They then sat around trying to decipher the layman's language and the typographical errors to figure out what the interviewed scientists had *really* meant.

The Britishers did something that irked many radio astronomers around the world. Their original paper described the existence of four pulsars, but they neglected to mention the positions of three of them. To an astronomer, this is like saying that somewhere in Africa there are four bags of diamonds for the taking, and giving the location to only one. One bag is infinitely better than none, but four would be ever so much nicer—especially if they provide clues to the location of a whole diamond mine. This meant that the rest of the scientific community was kept chewing their fingernails, and had to be content with the table scraps of the one pulsar the Hewish people had already analyzed to death, while the Britishers observed the secret three at their leisure.

"Other laboratories tried to bargain for the valuable coordinates by offering privileged information of their own," reported Harold L. Davis, the Senior Editor of *Scientific Research* magazine. "Security

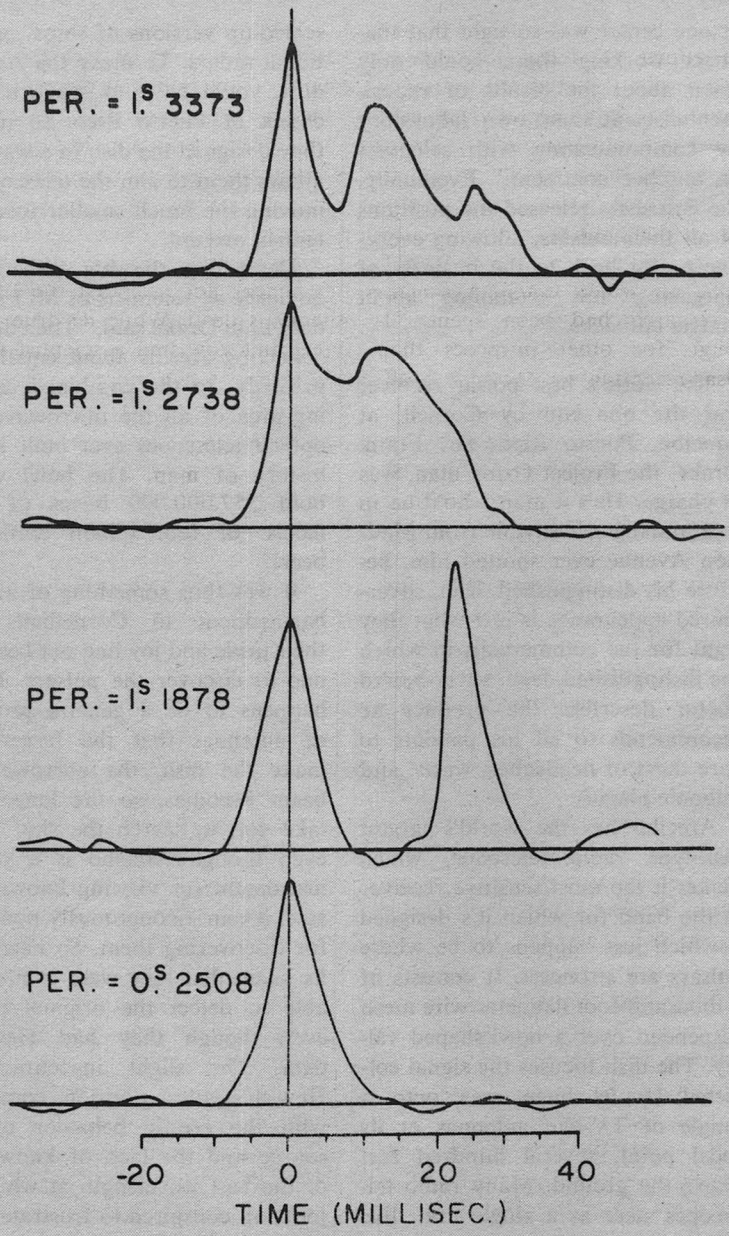
at one center was so tight that theorists working there could only learn about the results of experimentalists at their own laboratory by communicating with scientists on another continent." Eventually, the Britishers released the positions of all their pulsars, allowing everyone to get back to the business of stargazing and grumbling about budget cutbacks.

The world's best pulsar receiver was the one run by Cornell, at Arecibo, Puerto Rico. Dr. Frank Drake, the Project Ozma man, was in charge. He's a man who'd be in mortal danger if anyone from Madison Avenue ever spotted him, because his distinguished, lean, silver-haired appearance is just what they want for the commercials in which the distinguished, lean, silver-haired doctor describes the product he recommends to all his patients to cure them of headaches, warts, and bubonic plague.

Arecibo has the world's largest dish-type radio telescope, which makes it the most sensitive receiver in the band for which it's designed —which just happens to be where pulsars are strongest. It consists of a thousand-foot diameter wire mesh suspended over a bowl-shaped valley. The dish focuses the signal collected by its huge area onto a jungle of TV-like antennas at its focal point, several hundred feet above the ground. Many radio telescopes steer as a single unit, like scaled-up versions of ships' navigational radars. To move the Arecibo dish, you'd have to move a large chunk of Puerto Rico, so instead they designed the dish in a way that allows them to aim the telescope by moving the much smaller focal antennas around.

Describing the big dish to an audience of scientists at MIT's Lincoln Lab, Drake said, "The effective collecting area is about equal, surprisingly, to the combined collecting area of all the microwave and optical telescopes ever built in the history of man. The bowl would hold 357,000,000 boxes of corn flakes—or four billion bottles of beer!"

It was thus something of an embarrassment to Cornellians that their pride and joy had not been the one to discover the pulsars. But it happens to be a general property of antennas that the larger you make the dish, the narrower the beam becomes, so the longer it'll take you to search the sky. Thus, even though Arecibo is a superb instrument for viewing known pulsars, it's an incongruously poor one for discovering them. So narrow is its beam that they were at first unable to detect the original pulsar even though they had Hewish's data. The slight inaccuracy in Hewish's pulsar position, combined with the erratic behavior of the source and the lack of knowledge of the best wavelength at which to look, all conspired to frustrate their


PER. = 1.^{S} 3373
PER. = 1.^{S} 2738
PER. = 1.^{S} 1878
PER. = 0.^{S} 2508
-20
0
20
40
TIME (MILLISEC.)

first efforts to detect the signals. They easily detected the pulsar a couple of days later when they tried a different wavelength. Drake tells of the hasty special purchase, for the focal point of the multi-million dollar dish, of an antenna perfect for receiving pulsar signals —one on which untold kilobucks of research had been spent, although for other purposes than pulsar-reception—a humble, off-the-shelf, TV antenna from a local hardware store!

Listening to the pulsar signals picked up by Arecibo is a strangely moving experience. The slowest pulsars sound just like the beating of a human heart, and you can't help wondering if these are the sounds of an inconceivably advanced alien civilization, received at Earth centuries after their broadcast. Even if pulsars are "merely" natural objects, you are hearing one of the fundamental rhythms of the universe, put out by an almost unimaginable object inconceivably distant. The fastest pulsar is much livelier, sounding like the beat of African tribal music. As Drake said, "You can dance to that one."

The public wasn't escaping the excitement. At first, the world was presented in the press with a rash of reports from scientists announcing that this looked like the real thing at last: the long-awaited signals from little green men. Privately scientists even dubbed them "LGM objects," in honor of the Little Green Men. Of late, though, the reverse has happened, and the press largely presents anti-LGM statements. What the little green men need is a better press agent because it's simply not true that the LGM theory is dead. While it's true that you can't now find a scientist willing to swear that pulsar signals are from little green radio broadcasters, every scientific argument that purports to prove that pulsar signals are nothing an intelligent civilization would transmit, has an equally valid counter-argument which shows that the signals might reasonably be those from a *plausible* advanced civilization.

One of the first such anti-LGM arguments put forward was that the signals were definitely not being emitted from a planet. We can tell that this is so because the planet, during its orbit around its parent star, would be moving towards the Earth during half its orbit, and away during the other half. Such motion gives rise to a Doppler effect—the same effect that causes a police siren's pitch to rise when it's approaching you and to drop when it's receding.

In the case of the hypothetical pulsar-planet, the pulses would become slightly more frequent if the planet is approaching, and less frequent if receding. So sensitive is this effect that the Hewish group found

(*opposite*) *Typical pulse shapes of four pulsar signals.*

that they could detect the Doppler effect of the *Earth's* orbital motion as we approached or receded from the pulsar. No such effect was found that could be attributed to a pulsar-planet, but this certainly doesn't rule out the LGM theory. It simply means that, if the LGM theory is correct, then the little green broadcasters have engineered their transmissions to artificially cancel out any Doppler effect that might annoy their listeners—or they simply may not be broadcasting from an orbiting planet.*

They could detect the Doppler effect due to the Earth's motion, despite the minute size of the effect, because of the most remarkable fact about the pulsar pulses: the incredible constancy of the interval between pulses. The ticks from the first pulsar occur precisely every 1.33730109 seconds, good enough to make a clock which gains or loses less than one second in a year. Two of the pulsars tick about as fast, but the fourth ticks about four times a second. They all tick with the same sort of fantastic accuracy, an accuracy that begins to rival—and may even exceed—that of atomic clocks.

Unlike the cases for and against flying saucers, the pulsar puzzle presents us with lots of concrete, objective data. The problem lies with the interpretation of the data, and for this you must put yourself into the position of the astronomer.

The ideal astronomer should have at least two qualities, inquisitiveness and practicality, for his credo should be: "If it radiates, measure it; if it doesn't, ask it for money." Pulsars, being in the former category, are ripe candidates for measurement, and the first thing he wants to know about any astronomical object—apart from the question of whether it's the residence of little green men—is how far away it is. Until you know the Sun's distance, you don't know whether it's a big, bright object zillions of miles away, or a small, faint one relatively nearby. So, too, we need to know the pulsar's distance in order to learn whether it's emitting weak signals easily within the capacity of a reasonably advanced civilization, or whether it's emitting huge quantities of energy inconceivable for any plausible civilization.

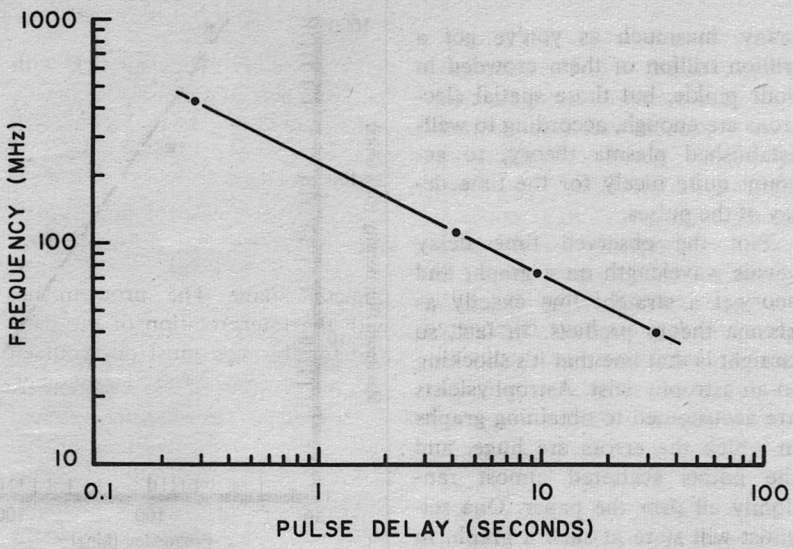
Hewish's people figured out the pulsar distance quite cleverly. They knew the pulsar was outside the solar system when they found the

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* This would be an extremely tricky engineering job—one I personally can't believe—because Doppler effect depends on the angular relationship between transmitter and receiver. A transmitter moving across the line of sight will show no Doppler effect; one moving along the line of sight will have a maximum. effect. To counteract the Doppler effect for all receivers in all directions seems an extremely tricky job.

Much simpler would be to mount the transmitter on a planet with a very long-period orbit—a Neptune-like orbit, with a period of several centuries. Doppler shifts would then be detectable only after the first century or so of observation. With only about one-fifth Earth's orbital speed, the shift would be hard to detect; since it would not reverse sign from plus to minus for a century or so . . . we'll know along around 2070 A.D.!

The Editor.



Time delay of the first pulsar. Four data points are shown, but the actual errors in them are too small to show.

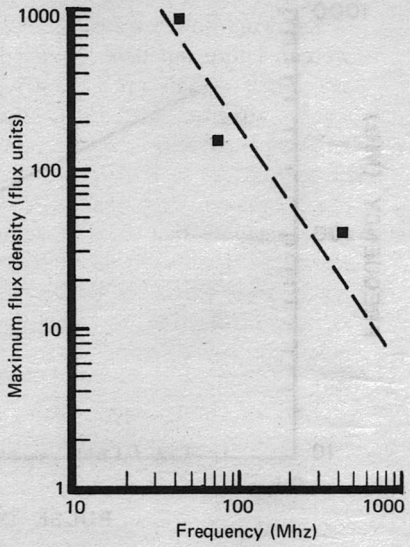
source remaining fixed with respect to the stars. An object in our solar system would seem to wander among the stars during the course of a year because our viewing platform, the Earth, moves around the Sun at the same time, changing the point of view from which we see the heavens. Stars are generally exempt from measurable changes because of their vast distances, just as at the beach, your view of a nicely stuffed bikini changes as you walk around, while a ship on the horizon appears fixed.

Now we know where they *aren't*, but we'd like to know where they *are*. That, more or less, is what the Hewish people asked themselves, and they came up with a very subtle answer. They noticed that a pulse observed on one wavelength was delayed on another. The wider the difference in wavelengths, the greater the delay. If you hooked your TV up to a huge antenna aimed at a pulsar, you'd get the pulses on Channel 2 about twenty seconds after those on Channel 13. How can this possibly allow you to figure out the pulsar distance? Elementary, my dear Watson—elementary plasma physics, that is. It just so happens that interstellar space is swarming with electrons—a plasma consisting of several electrons in every matchboxful of space. They may not seem like

many, inasmuch as you've got a trillion trillion of them crowded in your pinkie, but those spatial electrons are enough, according to well-established plasma theory, to account quite nicely for the time delay of the pulses.

Plot the observed time delay versus wavelength on a graph, and you get a straight line exactly as plasma theory predicts. In fact, so straight is that line that it's shocking to an astrophysicist. Astrophysicists are accustomed to obtaining graphs in which the errors are huge, and the points scattered almost randomly all over the paper. One scientist will stare at such a graph, in which the data points are distributed as linearly as Racquel Welch, and he'll say, "Those points obviously occur about a straight line with a slope of minus 1.4." A second astrophysicist will stare at it intently, and say, "No, I'm afraid it's minus 1.5." Another will point out that it looks like two intersecting straight lines, and the next will assure us that it's a curve. Thus, you can imagine the gasps of awe which greeted the display of this indisputably straight pulsar line, precisely as predicted by theory. Curves like that just don't happen in astrophysics. It's almost indecent.

Having measured the time delay, they were able to compute that the first pulsar was several hundred light-years away, or about a quadrillion miles. If it had been any farther, the time delay would have been greater, and if nearer, shorter. A quadrillion miles may be considerably greater than even the mileage on a used-car salesman's worst lemon, but it's a small distance on a galactic scale. It's about a hundred times farther than our Sun's nearest stellar neighbor, Alpha Centauri, but it's only about one percent of the distance to the center of our galaxy. The other pulsars lie no farther than the first one, the nearest being about a hundred light-years away. This makes them —and us—part of a cozy little group of a million stars, in a backwoods corner of the galaxy.



Spectrum of the first pulsar. (*One flux unit* = 10^{-26} *watt/m²/Hz.*)
"The Rapidly Pulsating Radio Source in Vulpecula," F. D. Drake et al *Science* Vol. 160, pp. 503-507, 3 May 1968. Copyright 1968 by the American Association for the Advancement of Science.

Knowing how far away they are, we can figure out how "loud" they are. Their signals are so strong at Earth—stronger at some wavelengths than most other natural radio emitters in the sky, although much weaker than local TV and radio signals—that they must radiate about a billion times as much energy as is generated by the entire electric production of Earth—provided the signals aren't beamed at us.

This, of course, brings us to the first major objection presented against the intelligent-alien theory of pulsars, namely, that those cotton-pickin' little green men couldn't conceivably generate such huge amounts of energy. This is strongly reminiscent of the people who said you couldn't possibly build an engine that could pull a heavier-than-air craft through the air, or those who said it was impossible to build a rocket powerful enough to escape the Earth's gravity. Present electric production exceeds by a rather large percentage that of eighteenth-century Earth, and it is difficult to foresee by how much our electrical generation will have increased after another couple of centuries, let alone the billions of years the LGMs may have had to themselves. Electric production certainly isn't decreasing: Con Edison doesn't yet foresee a change to gas lighting, nor does RCA expect to replace TV broadcasts with smoke signals, however desirable that may be.

Of course, a billion earthpower is a lot to ask of even the most industrious little green men, but there happen to be two convenient ways around this alleged obstacle. The first is to require the pulsar signals to be beamed. Presumably the members of an advanced civilization have a similarly advanced astronomy and biology, giving them a good idea of which stars are the most probable abodes of life. They might then choose likely candidates and beam their signals at them with a hundred-mile-diameter super-Arecibo dish. With this super-dish, they need only about one earthpower to produce the signals we observe. A hundred-mile mirror sounds a bit tricky, but it need only be a wire mesh floating in space.

Suppose the LGMs don't know —or, more plausibly, if ego-deflating, don't care—about us. It's a bit presumptuous of us to assume the pulsar inhabitants care about the aboriginal savages on some distant uncivilized island in the galaxy, so is there any conceivable source of energy that could supply the billion earthpower needed if the signals were unbeamed? You bet your life there is. In fact, you bet your life every day on the continued existence of this powerhouse: the Sun. The Sun produces a hundred *trillion* earthpower, a hundred thousand times the needs of those power-hungry little green men. How do you convert this energy, which is mostly in the form of light

waves, into radio waves? That's their problem.

We don't have to pass the buck completely, because astrophysicists have already begun to consider the possibility that nature has set up huge lasers in interstellar space, consisting of gases forced by the radiation of stars to emit strong radio waves much as laboratory lasers emit intense light waves. This theory of God-given lasers has already been advanced to explain another bunch of mysterious radio signals emanating from "OH regions" containing water vapor in which each molecule lacks one of its hydrogen atoms. If astrophysicists can conceive of radio-broadcasting laser steam-engines occurring as a mere accident of nature, then surely we can be granted the latitude of supposing that an ultra-civilized world could construct a similar laser deliberately.

By a curious coincidence, these OH radio signals also have been ascribed to intelligent aliens. They, too, possess many of the characteristics which we associate with intelligent transmissions. This theory of little-green-men-with-giant-OH lasers still survives today, but that's another story. Still, it's amusing to recall that lasers didn't exist twenty years ago, and here we are trying to second-guess a civilization perhaps billions of years more advanced: one ant asking another how human beings could possibly fly through the air. Also, we don't even know for sure that they're intentionally broadcasting these signals. An automobile with poor spark-suppression in its engine produces loud, pulsarlike signals when it passes by your radio or TV. Who knows? Maybe we're receiving the noise from their power transmission system—or from their multi-quark zartwortlers, a gadget which won't be invented on Earth for another ninety-two centuries.

You don't really have to make a fancy laser to build a pulsar. The energy emitted by the pulsar is only a thousandth of a percent of that from our Sun. If you want to convert the Sun into a pulsar, all you need to do is make solar cells, of the type used to power many artificial satellites—enough to intercept a thousandth of the Sun's light—and tack on a few zillion transistor radio transmitters, and you can do the job, albeit for an appropriately astronomical price tag. Given a truly unlimited expense account, enough robots, and enough time to convert planets into transistors, solar cells, and more robots, you should be able to do the job.

Exobiologist Carl Sagan has a few words of wisdom on the LGM theory. Co-author with the Russian astrophysicist Iosef Shklovskii, of the already-classic study, "Intelligent Life in the Universe," Cornell's Professor Sagan looks typecast for the Hollywood part of the brilliant, handsome young scientist who, in one of those boy-meets-

Fig. 6. Table of pulsar data (in roughly chronological order).

*Number**	*Period* (sec)	*Right Ascension* h m s	*Declination* ° ′	*Distance*** (light years)
CP1919	1.33730109	19 19 37	21 47	410
CP0834	1.2737642	8 34 20	6 07	420
CP0950	.253065	9 50 29	8 11	100
CP1133††	1.18790928	11 33 36	16 08	160
HP1506	.7397	15 07 40	55	490
CP0808	1.2922	8 09	75	330
CP0328	.7145	3 28 50	55	590†
PSR1749—28	.5621	17 49 49	—28 06	1700
PSR2045—16	1.961	20 45 48	—16 28	370
AP2015+28	.5580	20 15 50	28 30	500
AP0823+26	.53062	8 23 52	26 48	630
PSR0833—45*†	.0892	8 33 39	—45 00	1600
JP1933+16	.358764	19 33 10	16 06	4700

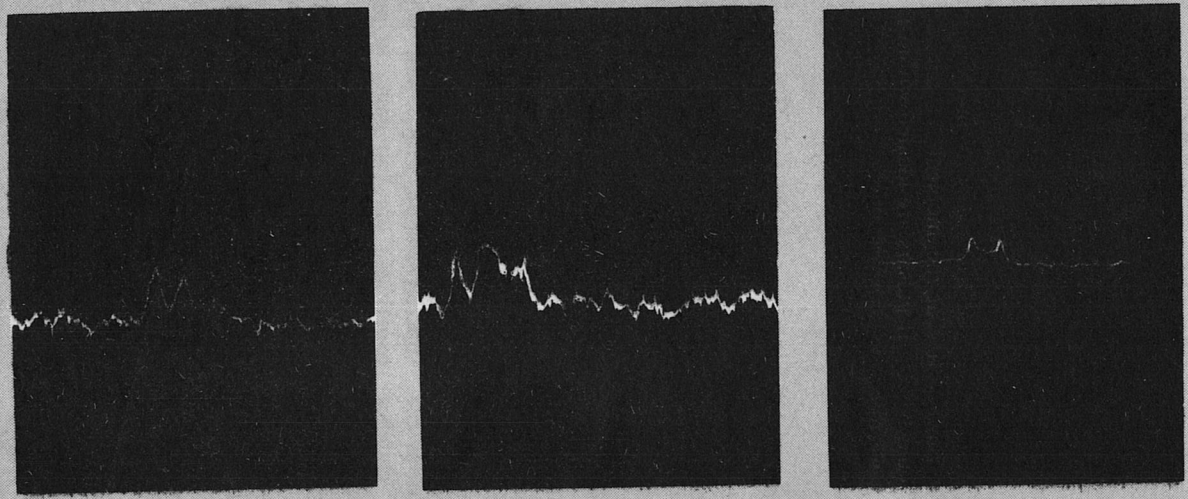
*A = Arecibo; C = Cambridge; H = Harvard/NRAO; J = Jodrell Bank; PSR = Sydney.
**Based on .1 electron/cc average interstellar density (which may be very wrong).
*†Apparent supernova remnant.
†Greater than 14,000 l.y. distant if the 21 cm spiral-arm absorption is correct.
††Apparent gamma-ray emitter.

girl-meets-monster epics, saves the beautiful girl from the clutches of the Evil Menace from Outer Space, a task for which he's better qualified than most other human beings.

On pulsars, he agrees that "You can't argue that too much energy is required for pulsars to be generated by an advanced civilization." Still, he's hardly in favor of the LGM theory: "It's the hypothesis of last resort. Suppose somebody comes along and says he thinks pulsars are produced by a supercivilization. O.K., now what experiment are you going to perform to test his contention? You could always say that the supercivilization is so clever that it arranges things in such a way that we can't figure it out. It's very much like appealing to God, you know."

If you're contemplating alien civilization, he urges, "Instead of thinking of extrapolations tens or hundreds of years into the future, try to imagine—it's very difficult—extrapolations hundreds of thou-

Cornell University Photograph



0 40 80 120 0 40 80 120 0 80 160 240

MILLISECONDS

TIME CONSTANT 1ms	1ms	3 ms
BANDWIDTH 25 KHz	25 KHz	50 KHz

FREQUENCY 111.5 MHz

sands or tens of millions of years into the future; then it becomes clear, not only that the technology based on principles of physics becomes very hard to prognosticate, but even that there will be many new principles of physics discovered. No one's in a position to make any detailed predictions about such an advanced civilization, except to say that it would be capable of doing things that we today have not the faintest idea of how to do."

There is one man who has been thinking of extrapolations thousands of years into the future. He's Princeton's Freeman Dyson, who's probably the Earth's first inhabitant to fully deserve the title of "Cosmic Architect." Way back in the pre-pulsarian days of 1959, he suggested that very advanced civilizations, bound only by the presently-known laws of physics, may surround their parent star with spherical shells made from dismantled planets. Such a technologically advanced civilization would, he suspects, redesign its planetary system to best utilize the energy from the cheapest nuclear reactor around, a star. By distributing its civilization within a shell—known in the trade as a Dyson Sphere—surrounding the star, he figures they can provide a comfortable home for a billion trillion people; he's not very optimistic about the population explosion. These shells might block our view of the star, but the shell would "glow" in the invisible longer wavelengths of infrared light. He's even suggested looking for such objects, but infrared astronomy is pretty primitive at the moment.

If pulsars are located within Dyson Spheres, this would nicely explain why we don't see them even though optical astronomers have eagerly been scanning the skies for any object that may be found at the pulsar locations. Photographs do show a couple of stars in the vicinity of the first pulsar, but these seem to be just ordinary stars that merely happen to be in that part of the sky by coincidence.

Knowing how far away pulsars are, we could figure out how big they are—if we could only see them well enough. But we can't, so we have to be more indirect, i.e., clever. The pulses last about a hundredth of a second. If no signals can travel faster than light, and the pulsar signals arise on or within some natural object, the signals from the nearest part of the object will arrive at Earth slightly before those from a more distant part. Since light travels at a brisk couple hundred thousand miles per second, if a pulse lasts a hundredth of a second, the size of the emitter must be less than a couple thousand miles; if it were any larger, the

(Opposite) Oscilloscope traces of some pulsar pulses.

pulse would last longer. This suggests that we're dealing with objects no larger than Earth, and not, for instance, something the size of the Sun.

So far, we've only scratched the surface of the pulsar. The size and distance of an object aren't enough to satisfy an astronomer. There's always something more to be learned, so the careful astronomer next asks himself what's left to measure.

A most important characteristic of an astronomical object is its spectrum, the picture of how its signal strength varies with wavelength. Your local radio station has a spectrum in which most of the energy is concentrated about a single, sharply-defined wavelength. If it doesn't, it'll interfere with other stations, and they'll soon get a visit from their friendly neighborhood FCC man. On the other hand, most astronomical radio sources produce signals over a large, continuous band of wavelengths.

The trouble with measuring a pulsar spectrum is that its intensity varies erratically. What the radio astronomers finally did was record the intensity of the strongest pulse at each wavelength. When they plotted this on a graph, it yielded a fairly straight line showing the strongest signals in the short-wave band, and the weakest at ultrashort radar wavelengths. Such a spectrum is the signature of many natural radio objects, immediately suggesting that pulsars may also be natural.

In fact, this presented one of the best anti-LGM arguments around, because it showed that not only is the pulsar spectrum similar to that of many natural sources, but the signals are strongest in one of the worst possible bands for interstellar communication, the short-wave band where radio noise from the Milky Way is strongest. So strong is this noise that it wipes out the pulsar signals we receive at the longest of those wavelengths, and as Frank Drake points out, "This says that if this is an intelligent signal, it's coming from a stupid civilization."

In a colloquium on pulsars given at Cornell, Professor Thomas Gold pointed out a flaw in such reasoning. Although he believes the LGM theory unlikely, he pointed out that if aliens were responsible for the signals, they might simply be controlling some natural radio-emitting phenomenon. They might be taking advantage of a natural object like those we regularly observe with our radio telescopes, just as a man with a mirror can send coded messages for many miles by effortlessly using a mirror to divert some of our Sun's enormous light energy for his communications.

Another objection to the LGM theory was that sending your signals in radio pulses spread over the entire shortwave band is a stupid

way to transmit information. The smart way to do it is to concentrate the signal into essentially a solitary wavelength, the way human radio stations do. Still, apart from the possibility that it may have been too inconvenient or expensive to do any other way, the little green men may have been smarter than we give them credit for, as there's a peculiar facet of the pulsar signals that's tough to explain by a natural process, but which has a nice interpretation if the signals are from little green disc jockeys. On top of that, the LGM interpretation of this pulsar peculiarity incidentally demonstrates that the little green men may not be stupidly transmitting a broadband signal. It only *looks* that way at first because what they may really be doing is broadcasting lots of independent signals on many wavelengths simultaneously, just as we on Earth broadcast on thousands of independent stations simultaneously.

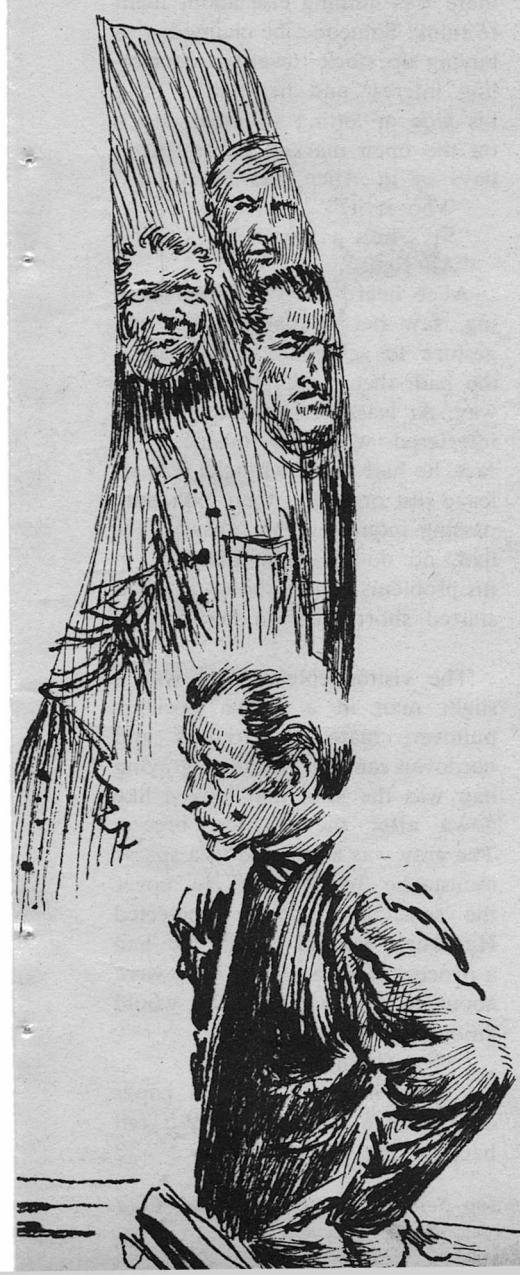
This peculiar facet of the pulsar signals is seen when you look at the same pulse on different wavelengths, allowing for the delayed arrival of the pulse at longer wavelengths. You find the amplitude at one wavelength completely unrelated to that at any other: sometimes the pulse will be intense on one wavelength and weak on another, sometimes vice versa, and sometimes they're both the same. On the other hand, some researchers claimed that successive pulses at the *same* wavelength were *not* completely random, although others now claim this is wrong.

It's awfully hard for the theoreticians to figure out what could cause a natural radio source to put out pulses spaced so regularly, yet varying with that peculiar randomness, but if the transmissions are those of little green men, the answer may be simple: We're tuning in different channels. One channel may be broadcasting Lesson #27,681 of "Medieval Pulsar History;" a second has "How to Protect Your Civilization From Destruction by Nuclear and Other Primitive Weapons;" Channel 138 is continually re-running "An Introduction to the Little Green Language, to help us understand the other broadcasts; and another has "How to Build Your Own Pulsar for Fun and Profit."

Or, maybe one wavelength is currently carrying reruns of last century's big hit series, "Have Laser, Will Travel," and a pink octopoid moose is stating solemnly that "green man speak with forked tongue"; another channel is describing the latest news on the war between Pulsars 2 and 3; and a third is conveying the antics of the Green Knight charging through the Valley of the Jolly White Giant while extolling the virtues of his deodorant.

[TO BE CONCLUDED]





Minitalent

. . . But it takes only
a little energy to shift
an electron flow, or start
the detonation cycle
of a 100-megaton fusion bomb!

BY TAK HALLUS

Illustrated by Leo Summers

One more day of this ceaseless boredom and Alice could return to work—to the *Iphegenia.* She felt the boredom as an unrelenting wind that, no matter the emotion she turned against it, blew on. Fifteen days of reading novels and visiting friends, visits only telling her again, as they did on her every leave, that she and they had changed unrecognizably, familiar containers with unknown contents. Tomorrow, when she testified, the waiting would be over and she could get out of here.

She sat with her hands in her lap and stood a paper clip on end, realizing as she did how it expressed the depths of her boredom. She knew it was her form of twiddling her thumbs. At fifteen, when she discovered the ability, it was like coming face to face with a

poltergeist. She had been overwhelmed by her own, unique self and envisioned her talent maturing, expanding, becoming more powerful like the muscles of a child growing to those of an adult; she had seen herself summoning objects to her bidding. "Slippers, to foot!" "Pen, take a letter!" The more she had thought, the more her imagined maturity expanded. "Soldiers! Your weapons are useless! War is at an end!"

Now, at twenty-eight, she knew the whole thing was like being double-jointed; you were just double-jointed, not more so with time. She sat by the table and spun the paper clip exactly as she had at fifteen, but no better—a trivial talent.

"Alice, there's a man to see you." The voice was her stepfather's, Edward Frost, a man two years from retirement at fifty and with whom Alice had little in common but her mother. He talked incessantly of his business, making plastic rivets. His nightly laments about the horrors of the business world and the horrors of his approaching retirement were his repertoire and only convinced Alice more of the separation eight years in space had put between her childhood and her womanhood. Not that the *Iphegenia* was something other than a business; she just didn't worry about it as if it were one. Her stepfather, on the other hand, thought of nothing but the business side of rivets because there was nothing else about them to think. Someone, he claimed, was buying up stock toward a controlling interest and he nightly sang his woe at letting so much stock on the open market. After fifteen days of it, Alice was bored.

"Who is it?"

"Says he's a lawyer."

"All right."

Alice heard footsteps approaching, saw her stepfather turn and gesture to someone farther down the hall, then walk past the doorway. At least her stepfather never interfered with her business. In fact, he had asked why she was on leave just once and then took only passing interest in her answer. He had, no doubt, been absorbed in his problems, which she understood started shortly before her arrival.

The visitor entered. He was a slight man in a brown business pullover, matching trousers and cordovan sandals. His thin, graying hair was the kind that looked like down after the slightest breeze. The gray was continued in a sparse moustache which tried to cover the scar of a poorly corrected Hapsburg lip and failed. He had a process server's air, as if he were about to do something he would enjoy and she would not.

"Miss Culligan?"

"Yes," she said and the paper clip made a small click as it fell back to the table.

"May I sit down?" He passed her his card, Fredrick Schultz, Attorney at Law.

"Of course, Mr. Schultz."

"I shall come to the point."

"Of course, Mr. Schultz."

"Can we be overheard here?"

"I suppose so—if someone wanted to overhear us."

"Your stepfather?"

"He probably wouldn't hear us if he were in the same room."

"I doubt that, considering," he said and smiled a process server's smile.

"And what is it you don't want overheard?"

"Yes. My reason for being here. My—"

"Your *raison d'etre* for that matter."

"My clients—"

"Who are?"

"You will know if you interrupt less and allow me to continue." His moustache seemed to show his irritation with her brisk manner, but it was the lip underneath the moustache that was twitching. Alice thought she might let him continue, then again she might not.

"My clients have instructed me to ask that you refrain from testifying in the Easterbrook case."

"Easterbrook, Wilson and Graff are your clients?"

"In a manner of speaking."

"There's another manner of speaking?"

"There are more people involved than those three," he said and his lips tightened beneath his moustache until his twitch stopped.

"I didn't expect that three men would be entirely responsible for wiping out fifty million Hetharians, but these three were caught."

"Why are you giving me so much trouble, Miss Culligan? This is just a job I do, representing people, you know."

"Mr. Schultz, arms-running, or profiteering, or for that matter complicity in the murder of fifty million intelligent creatures doesn't apply to your trio, but cultural interference does and I'd like to see them get twenty years in a cell and ten in suspended animation and you're asking me not to testify. If that makes your job unpleasant, it's just one of those little occupational hazards you'll have to live with. Besides, I imagine you're paid well enough for it."

The air was dead for a moment.

"And now to business, Miss Culligan."

"If it wasn't plain enough, go to hell."

Schultz began unloading papers and a document recorder from his briefcase. He was ignoring her instructions, she noticed, and she was amused by his calm. It seemed as though someone had switched roles on her; on the *Iphegenia* she was the one with a reputation for unbreakable calm.

"I have here," Schultz continued, "some documents which may

interest you." He passed across the table a paper Alice recognized immediately as a captain's rating certificate with everything filled in but the issuing authority's countersignature. Neatly printed in the center of the paper was Alice's name. Schultz passed the next paper. It was a spacecraft registry form, filed before each journey and listing the crew in order of responsibility. Alice knew the ship, the *Cenchrias,* half again the size of the *Iphegenia,* noted for its efficiency and the dubious uses to which it was put. Alice's name was at the top of the list.

"And the salary," said Schultz with the finality of a man in the last steps toward a foregone conclusion. He handed Alice a contract with salary figures twice what Captain Wheeler of the *Iphegenia* made with three times Alice's seniority.

"And for all this," Alice said, "all I have to do is assassinate the State prosecutor. By the way, all these are unsigned."

"No assassinations—just don't testify. They'll be signed as soon as you agree. We'll see to it. Your word will be enough."

"Of course my word is enough," she said smiling at Schultz's attempt to show he knew her to be a worthy and honorable soul and knowing her acceptance of a bribe would give him collateral to keep her from changing her mind. "It's your word I'm worrying about."

Schultz looked across the table at her and somehow, without moving any specific part of his face, his expression changed and confirmed what Alice had said.

"It's all very enlightening, Mr. Schultz," she said, raising her right hand to eye level and letting the papers swoop from it to the table. "But I have a good job with an adequate salary and a captaincy will come in due course. Besides, you haven't met my price."

"What is that?"

"Dead stop in arms shipments to Hethar."

Schultz showed no sign of what he must have felt at the statement. He reached into his briefcase and removed another document which he passed over the table to Alice. She recognized it only after examining it closely.

"So what?" Alice said, "It's a notarycorder template set up for stock registration on twenty shares of my stepfather's firm. They're worth twelve point five credits a piece on the open market. For a bribe . . ."

"Recompense."

". . . It's puny. I could hardly buy a new pair of shoes with it."

"But the insignificant becomes paramount in the right context. You see, these shares are the controlling shares in Frost Plastics. However they are voted, with your stepfather or with me, will tell a great deal about the future of the firm."

Alice looked at the template. Only the owner's name and signature were missing. The official seals were in place so there was no doubt they owned the stock. The pressure on her stepfather had been aimed at her. Now, with a small nod of the head and a signature, she could save a comfortable retirement for her mother and stepfather or put them on a Spartan state income.

"And how do I know you won't void the registration as soon as you leave?"

Schultz put his hand on the notarycorder he had removed from his briefcase.

"No one in his right mind," he said, "violates a notarycorder, especially a lawyer."

The frustration of coercion was growing in Alice as she looked at the device. Schultz had put her in the position of responsibility for her stepfather, a person outside what she felt were her voluntary responsibilities, so that the pressure to accept Schultz was dogmatic, externally imposed social responsibility—the right thing for a daughter to do no matter how Alice felt. For the moment Alice's resentment centered on the notarycorder.

Schultz moved his hand back to the table. In the few moments Alice stared at the buff case of the machine, she became aware that her attention was only half on the outside. The rest of her mind was touching the circuit boards within the case. She must have done the same thing without realizing it while tracing bugs through circuits on the *Iphegenia* but on the *Iphegenia* the presence of her hands and test equipment had always obscured this other, almost reflex action. It was very interesting but Alice recognized it was her mind turning, as it always did when she was emotionally upset, to a technical problem for solace. She looked back to Schultz.

"But one could never tell about you, lawyer or not."

"How's that?"

"You are poor at following instructions. You didn't carry out your client's instructions to get at me and you haven't even started on my instructions."

"Yours," he said flatly, in tone more a statement than a question.

"I told you once to go to hell."

Schultz's jaw and cheek muscles became tight, but he said nothing. He gathered up the captaincy certificate, responsibility authorization and salary agreement, putting them neatly into his briefcase. Alice watched him closely, an idea forming vaguely as she saw him preparing to sign the stock registration template in front of her. Schultz moved the template toward him, reached through the flap in his pullover and brought out his pen. He looked up to Alice's eyes as his pen touched the owner's line.

"Any reconsiderations?"

Alice snorted in an unfeminine way.

The smile on his face broadened. Alice watched only long enough to be certain he was actually going to sign the template, then her attention went back to the notarycorder. Her mind traced circuits across the rows of small boards, only half sure of their function. She felt as if she were trying to make meaning of a raised contour map by Braille. Finally she found what she had hoped for, a lead from a transistor long enough, before it plunged into the printed circuit board, to let her bend it, bend it, bend it—it was like arm wrestling with a giant—until it touched a second lead, giving a reverse bias to the emitter and base of the transistor, positive facing positive. No current flowed inside the box.

Without taking his eyes off Alice, his face amused at watching her apparent hysteric concentration on the notarycorder, Schultz lifted it over the registration template. The movement rattled Alice's concentration and she lost touch with the bent lead but as Schultz settled it on the document she found it again and bent the now more flexible wire into contact. Schultz pushed the square plate on top of the notarycorder and released it. For Schultz the document was now public record. Alice drew away from the lead as Schultz put the machine in his briefcase. From a lawyer's habit of attending to detail, he pulled out an eraser and passed it over the template to clear it. He was ready to leave.

"Your mother and father would have had a comfortable retirement," he said and walked toward the hall.

"Schultz."

Schultz stopped and turned.

"Yes."

"What's the penalty for tampering with a notarycorder?"

"It wouldn't be in my interests now to tamper with it if I could," he said and started to leave, then turned back to Alice. "Why do you want to know?"

She thought a moment of what she had been able to do inside the notarycorder and her memory pushed forward feelings and thoughts over a decade old. A dream had returned.

"Just a little positive thinking. Good-bye, Mr. Schultz."

Richard Lee sat in the built-in deskchair of his business apartment in the Costa Mesa Hilton. That the Federation had taken his recommendation of Los Angeles San Diego for their prosecution of the Easterbrook case pleased him, not only because he maintained an office here, but Alice Culligan, the key witness, lived here. Nothing like relatives to remind a person of his duty. He didn't know if the girl needed reminding, but immediate environment was as much a

part of the type of testimony a person gave as what he knew; if strangers surrounded him, he cared less about what he was doing. A minor point, but one could never tell what minor point would be the keystone.

This girl, for example, minor employee of a minor interstellar freight firm, performing what Lee understood was one of her more minor duties—a mineral evaluation survey on a remote, airless hunk of rock fifty million miles from Earth—saw three men, Easterbrook, Wilson and Graff, loading crates of what turned out to be nervers into a surface-orbit craft, a minor operation. But why had they chosen an asteroid, the girl had asked herself, so far from human planets, or why on an asteroid at all? Why not load in orbit directly from whatever freighter brought the crates? In orbit, machines carried crates not men. The answer was simple. If you didn't want the transfer equipment's counter to register loading a certain volume on the ship's log, you did it by hand. When the authorities finally arrested the three, the log was clean and so were they. That made the girl's testimony crucial.

Crucial not only to the case, but to Lee's career, he reflected. In his career was where she was the real keystone. This case was already drawing public interest and the mark he left on it could tell his future better than a probability curve. It would have to be a clear case of the good state versus the evil profiteers, who were exploiting the innocent Hetharians.

For the sake of that image, he got a rundown on the Hetharians; four feet tall, furry, mammal types, about 80 I.Q. average by human standards with a culture somewhere prior to the invention of a cog gear. Although this told him nothing of their innocence, it did tell him what he needed to know, that they could be easily romanticized by the public, even loved in personification. Dumb, furry humanoids go right to the heart, he thought.

He would picture Easterbrook, for the public's sake, as the evil, corrupting, human agent. With Easterbrook's arrival, he would show, fifty million Hetharians were exterminated. The initial shock to the public of that many self-aware creatures dead, was, if nothing else, the stuff of a far-reaching career. And Alice Culligan was the keystone.

The visiphone on Lee's desk glowed.

"Mr. Lee?"

"Ah, Miss Culligan, I was just thinking about you. What can I do for you?"

"Do you know a little, hare-lipped creature named Schultz?"

"Schultz. No, I don't believe so."

"He's a lawyer."

"Schultz. Oh, yes. He's a mem-

ber of the firm defending Easterbrook, but Hayes is handling the case in court so I didn't recognize it at first. What about him?"

"He was just over here with a carrot to tempt me and a stick to beat me, so I wouldn't testify."

The blood drained from Lee's face as he looked into the screen.

"What did you do," he said, his pulse climbing to double and thumping so badly in his ears he was almost deaf.

"I bent his stick, I think. That's what I wanted to talk to you about. Too bad I couldn't have eaten the carrot, too."

"Carrot. Carrot. Just tell me if you agreed not—"

"Of course not."

"Good. Now tell me about it."

Lee listened to the girl recount Schultz's bribe attempt and his threats on her stepfather's company.

"But the notarycorder seemed defective," she said. "I don't think it registered the stock."

"You're sure."

"It should be on file by now if it's public record. You can check."

"It doesn't matter either way. If it's on file, they'll have a plastics company they don't want and if the recorder was defective they can set up a new template. It may take a little time to get the proper seals but they do own the stock. Either way it's zero for you. For all that, it's zero for them either way, too. They wanted you. People don't plan things as well as they used to."

"You're right," the girl said and Lee caught something in the way she said it that suggested she meant more by the comment than affirmation, but he was unable to tell what it was.

"It's planning," she said, "that makes all the difference."

"What are you talking about, Miss Culligan?"

"Never mind. It isn't important. By the way, Easterbrook's company is around here somewhere, isn't it?"

"Yes. United Services has their main office up by you in Seal Beach. Why do you ask?"

"Curiosity."

Whatever she was talking about he would have to discover in person, not through the bland filter of the visiphone. It would take a personal meeting before he could be sure of her, anyway.

"I wonder, Miss Culligan, if I could come over and we can work out a few of these things for the grand jury. Personal contact is much better than these visiphone calls."

"Certainly, but make it in a couple of hours. It'll fit my plans better that way. I just remembered I have to see some people about a job."

"All right. In two hours, then."

Lee clicked off, realizing as he did that the girl already had a job.

She was a strange one. But that may just be the way she came over on a visiphone. In person things might be different. He might be able to get a little closer to her. Close, he thought, there might be some merit in that. He was only thirty-six and this Culligan was in her twenties and an astronaut; people knew how they were. It wouldn't be the first time he had cemented testimony with his—but it was better to let that kind of thing work itself out.

Lee stood and pushed the seam of his coat closed, flicked the visiphone on Record and left.

Alice walked into the United Services building full of a plan, or part of a plan. It had occurred to her that, although there were apparently no records about Easterbrook's activities on Hethar besides her eyewitness account, they must have records for their own use. Legal or illegal, a business operating at such far-flung places needed records and sophisticated cost-accounting analysis to keep tabs on progress and profit. And where there's cost accounting on that scale, Alice reasoned, there's a computer.

"May I help you?" asked a receptionist who blended harmoniously with the disquieting feeling of artificiality Alice always felt in public buildings and never felt on the *Iphegenia*, the most artificial of environments. The girl had broken away from a conversation with a man only slightly taller than Alice. The man seemed unaware of the end of the chitchat.

"Yes," Alice answered. "I'd like to apply for a job."

"For what position are you applying?"

"Computer operator, programmer, whatever. I can do any of them."

The receptionist glanced from Alice to the man next to the desk. "Mr. Hubbard," she said.

"What, yes," he answered, rudely yanked from some unknown reverie.

"This young lady, Miss—"

"Culligan."

"Miss Culligan is applying for a position with your section."

"Oh, very good. What position?" he said and looked at Alice.

"Whatever you have open related to computers."

"My dear Miss Culligan, computers are very complicated machines. We have many jobs related to their care and feeding, as it were." He smiled, amused at his own wit in likening the habits of animals and computers. "You cannot simply apply for 'something having to do with computers'." That won't do. Now, what experience have you had?"

Alice thought of her section on the *Iphegenia* which took care, among other duties, of the entire computer system from input to output and anyone in the section

was as competent to do so as anyone else. But the unlimited labor supply planetside let the same job be divided into minuscule operations, repeated constantly, so that these people probably had only a vague notion of the programming's content. It must be very dull.

"What do you have open?" Alice asked, thinking if she actually had to face a job here, she would go nuts.

"You are saying exactly the same thing you just said. I have told you it is impossible. I don't know what background you have but come with me and I will show you what you would need to know in order to apply for a job in the manner you just have."

Hubbard walked away from the desk without even a glance at Alice as if he had been talking to the receptionist or a fourth person. Alice looked at the receptionist who nodded her head after Hubbard, indicating she was to follow him.

The computer room gave Alice the same immaculate impression of most machine operations, ignorant as were computers of the human need for stacked paper and rubber stamps to give work identity. The arrangements of units was without the space-saving awareness of the *Iphegenia's* designers and allowed the large room they were in to flank a wall of equipment. She recognized the system.

"You have an Expute VII."

"You know it," Hubbard said somewhat surprised.

"Yes. We had one in a ship I was on once. Relatively straightforward but a little old now."

"Old! I've just finished having this system installed. It's the latest thing. You must be mistaken. Besides, they wouldn't need anything this complex on a ship. They just sail around and that sort of thing. Nothing a small deskpute wouldn't handle."

"A spaceship?"

"Oh. That kind of a ship. We have several in our company, you know. How I have wanted to get to space myself. But, as you can see, I'm hardly fitted."

Alice could see nothing unfit about Hubbard but perhaps he had some disqualification he assumed everyone noticed. Hubbard's insistence that the Expute VII was new must come, Alice thought, from ignorance of the priority that spacecraft, even privately owned, had on normal consumer markets. Her eyes followed the panels as she thought.

"I see you have two memory units."

"Why, yes." He seemed agitated by the observation as if they were admiring a beautiful view and her first comment was about a junkyard that marred the remaining magnificence. "We keep duplicate records, for security," he said, "but the analytical sections themselves

are the marvels." Alice could sense him trying to redirect her attention and, thinking of Hubbard's lame explanation of duplicate records, her attention was in fact redirected. Hubbard was being very helpful.

"What is it working on now?" she asked.

"Monthly tax returns. Boring stuff. That's why I have so much time."

"What is that unit down there?" Alice indicated a section at the opposite end of the room from the memory unit.

"I knew there would be something you hadn't seen. It's a mailer. When we're doing billing, or tax, or anything needing mailing, we just feed in the addresses and that section envelops, addresses, stamps and mails them."

"It actually mails them."

"Yes. Our normal volume is rather high so the mail is sacked and sent down under the building to the post office next door. The mailer's a standard unit, but it was one of my ideas to put in that little touch directly to the post office. We had the opportunity when the new system was installed."

Alice was only half listening now. Her mind was tracing circuits within the mailer back to the address input. It was a simple solid-state relay system, actuated either by card, tape or spoken command. She went to the card input and began closing circuits, R-I-C-H—it was simpler making a machine do what it was supposed to than thwarting it as she had the notarycorder—A-R-D, SPACE, L-E-E. She continued blocking out Lee's office address as Hubbard spoke.

"But I don't suppose you would need that sort of output on a spaceship."

After the address, there was only one detail to correct. Her mind moved down to the twin memory units and touched the main playback relay of the idle bank, then she released the first bank from its operation. Somewhere in what was now being fed to the printout, enveloped, addressed, stamped and mailed to Richard Lee, were all of the real records of Easterbrook and friends.

"If you want to get anything done," Alice said, proud of her work, "you have to plan."

"Yes, indeed." Hubbard answered. "But my planning's done for the day. Now I just sit here and watch it crank away."

"A job well done," Alice said, happy with activities that made her effort with the notarycorder look crude.

"Yes. Thank you. I'm quite proud of it. Well, I have some other work to do just now, Miss Culligan. If you will go back to the receptionist, I'm sure she has an application in her desk. After the proper security and background checks, we'll try to find a place

for you." He turned abruptly and walked off to an office at the end of the room.

"I've changed my mind," Alice said as she passed the receptionist on the way out.

Alice had to let Lee in herself. Her mother had mumbled something about errands before leaving and her stepfather, she discovered when she tried to find him to tell him about Schultz and the stock, had gone to his office for a few hours work. She had never met Lee in person and she was struck by the difference between his face the many times she had seen it on the visiphone during preparations for the hearing and this time in person; he was handsome, but with something about the strong jaw and large eyes and imposing nose that left him a man with features but no face. There seemed no unity behind the mask of features. Alice had to remind herself that character was in the man, not the face.

They sat in the living room, Lee where Schultz had sat a few hours earlier and Alice on the couch with him instead of across the table.

"I suppose so," Alice answered to Lee's first question, "if anyone wanted to overhear us. But my parents are out and I don't think the room's bugged, although it could be."

Lee moved his large frame conspiratorially closer.

"Yes. Yes. It may very well be, but . . . but otherwise we're alone?"

"Yes."

"Then to business. First, I think I'll have two men assigned to you for your protection," Lee said.

"I really don't think that will be necessary. Schultz hardly seemed the violent type. Pressure here and there, but no violence."

"I can't force protection on you, but I could have you put in protective custody until the hearing and trial are over."

"You carry your stick, too. Why can't I just leave a deposition, then we don't have to worry about anyone. I have the whole thing worked out here"—she indicated a stack of paper on the table—"and I could submit that and go back to work."

"Because you can't tell what will come up in a trial that will need information you have or what will be admitted as evidence. One irregularity and they could have your whole deposition thrown out, but your testimony is a different matter. They would have to scratch it line by line. No, you must appear personally. Now about the guards."

"I told you I didn't want any guards and if you try to put me in protective custody, I won't testify at all."

Lee shifted uneasily in his seat, then became still as he listened.

"Until today when things are finally starting to move one way or another, I've been sitting around here going nuts—you may say

that's my own fault, but it's still true—and if you cage me up even more, I'll be loony long before the hearing starts tomorrow."

"You exaggerate, but, in any case, your safety is my responsibility."

"Well, don't worry about it. I told you, violence isn't their style."

On his way home from the office Edward Frost still mused, as he had all day, on his idea to counter whoever was trying to get control of his company. The public record said Fredrick Schultz, but Frost had looked him up and he was only a lawyer, obviously a front for one of Frost's competitors. His plan so lightened the burden of inaction he had carried for the past month, that he decided to get off the monorail a stop early and walk home.

It smacked a little of the unethical, true, but no one was involved except his family and Schultz's backers and it wouldn't hurt his family, only the people he wanted hurt. It was so incredibly simple; it had been the ethics of normal business procedure which had blinded him, but this afternoon, in a flash, he had a weapon to combat them.

He walked on the sidewalk past Yorty Park and in his cheerfulness even let his mind wonder idly why it was called that. There were a few people in the park, a couple here and there, lying on the grass or walking among the trees, even the two businessmen who got off at his stop were strolling easily twenty yards behind him, taking in the early evening.

He cut a corner and made for the block of houses that separated the park from his house. There was an alley he could cut through. So simple. In essence, all he had to do was print up a few new shares, buy them and retain control; the realities of pulling it off were a bit more complicated than that, but the theory was just that simple. It was stock watering, in a sense, but if he personally paid the market price, then the company would be worth the value of the stock. He reached the alley between two four-story apartments and walked briskly into it. It was more a matter of good management; you could never tell how these other people would run the firm and he had a responsibility to his employees.

An arm moved in front of Frost's eyes and hooked around his throat. His own left arm was jerked up into the middle of his back. He tried to say something but the pressure on his throat was too great to even breath.

"Shut up and don't say a word," said a voice close to his ear as the arm tentatively released pressure, ready at any moment to stiffle a cry. Frost gasped and tried to turn his head to his assailant. The pressure on his arm and throat

increased as he tried. All he saw was the edge of a brown business sweater on a second man.

"Don't try to look around."

"What do you want? I don't have any money, only my credit index."

"Shut up and listen. Tell your daughter not to testify."

The voice paused a moment. "Repeat it," it said and Frost's arm was jerked slightly upward.

"I'm supposed to tell Alice not to testify."

"Say it again." The pain increased.

"My daughter is not supposed to testify."

The voice seemed satisfied and Frost relaxed slightly in preparation to being released. Fantastic pain shot up his left arm as it was bent farther and farther up his back. He tried to scream but the arm around his throat was tight now. There was the sound of a blanket ripping.

"What do you know about Hetharian politics, Miss Culligan?" Lee asked. Alice noticed he was changing the subject after the impasse on protective custody to allow her to cool down.

"Not much. Just some of the basic situation. We always scanned the planet for the sake of the log when we were close to it and after I saw Easterbrook and company, I convinced Captain Wheeler to do a complete scan. It's all there in the log if you want to subpoena it."

"The reason I ask is my own ignorance."

"It's a little late to be doing your homework, isn't it?"

"Not really. The hearing opens tomorrow, true, but that's only formality. It might be weeks or months before we get to anything about the Hetharians."

"Weeks or months!"

"Did you expect to walk into court tomorrow, testify and walk out?"

"I had something like that in mind."

"There are such things as due process, you know. Justice is as expensive in time as in money."

"Skip the profundity. How long am I going to be stuck here?"

"It's difficult to say. But to answer your other question, I hadn't really thought of bringing the Hetharians in at all until recently. Now, what do you know about them?"

The Hetharians, Alice explained, were subsistence farmers, governed by what amounted to a hereditary civil service, effective only because most Hetharian communities ran themselves by momentum. The planet itself was a mine of legalium and related metals for which the Hetharians had no use.

"The immediate problem" Alice continued, "was the Kenfor, Hetharians organized somewhat differently than the other two or three hundred communities. The

geography would just bore you, but it was their geography which allowed them tighter organization and enough of a surplus in food stuffs to play with their organization and expand it. They became convinced, as they expanded on their subsistence farming, of their own superiority and destiny to rule."

A light seemed to glow in Lee's eyes before he spoke.

"And that's when Easterbrook arrived," he said. "He and whoever else is involved sold nervers to the conquerors for legalium rights. Oh, that's beautiful. Everything is working for us. Nice clear lines of good and evil. I can hear the indignant public now, screaming for conviction."

"But whose conviction? You know you may be convicting heroes."

Lee's eyes narrowed slightly and Alice noticed his face for the first time was unified by a suspicion of something treacherous to his half-forming summation of good and evil locked in combat fifty million miles from Earth. "Heroes?"

"They sold the nervers to the groups attacked by the Kenfor. It was a logical decision, all things considered. Even with the Kenfor making converts and corpses at a two-to-one rate with their professional army, they still controlled less surface area than the remaining houses. They would have controlled the whole planet in a couple of hundred years, but this type of profit is very short-term so the nervers were sold to the creatures who owned the most land collectively—that is, the most legalium." Alice paused a moment to see if Lee was following her. "After all, who cares about the politics of the situation when there's a profit to be made?"

Lee shook his head back and forth as if his features had begun to return to their individuality and he wanted to shake them into place.

"That's bad," he said. "Now we'll have to keep the Hetharians out of it altogether." He stood up, agitated to activity by his thoughts. "Why did they have to help the good guys?"

Alice watched Lee in growing curiosity at the way his mind seemed to work.

"You're thinking with a cartoon mentality, Mr. Lee, everything neatly drawn and labeled."

Lee turned toward her, completely unmoved by her comment.

"The public has a cartoon mentality. But since you indict the simplicity of my thinking, tell me one thing that's just occurred to me: Why was it that when you found out Easterbrook was supplying the nervers to creatures defending their lives and homes and property against overwhelming aggressive odds, you didn't remain silent and allow the Kenfor to take the punishment for their crimes?"

Alice looked at Lee in incomprehension. The man was a Federation prosecutor, daily involved with pitting justice, due process, legal rights and moral decisions against the ranging, subjective values of judge and jury. A man caught by vocation in the relativity of human values, yet insisting Alice draw some absolute judgment on creatures so different from human beings that the relationship between the two species was a void, nothing, mere anthropomorphism.

"I'm not judge and jury, Lee. Everything I explained to you is my interpretation, a human being's interpretation, so how am I supposed to judge the culture and actions of creatures developing biologically, psychologically, genetically, morally, in every way on their own path for millions of years. For all I know their ethic may have proved the Kenfor the 'good guys,' as you call them, and what we consider the realities of the situation may not even be a consideration in their emotional or intellectual structure. Do you understand?"

Lee sat down again, completely taken aback by this small, pretty girl's outburst.

"Let them handle their own problems," she said, "in the way they understand because I doubt we could, not in an instant the way you want me to anyway."

Lee breathed deeply a few times before he spoke.

"You know, of course, that you are expounding a racist view. You see something morally wrong and by rationalizing yourself out of responsibility you can allow the oppression of one people by another."

"Have you ever been off Earth?"

"No. And I see what you're going to infer from that, but I can see oppression here equal to that anywhere in the universe."

"The point is not oppression, which is again a human judgment, it is that these creatures are nonhumans. There are very few human beings with identical values and nonhumans have absolutely no common background with us. If man oppresses and massacres man, my ethical decision is clear within current human values, but I absolutely refuse to take responsibility for nonhuman actions read through human-value judgments. For all I care the Kenfor could have taken over the whole planet."

Lee was trying to follow her argument, she could see, but he was also waiting to speak so that whatever had surfaced in his mind could jump into the conversation.

"Then why," he asked, "are you going to testify?"

"Have you ever seen the damage a nerver can do? It kills nerve tissue from the sense organs back to the brain, slowly. A man's immobilized, then he lays there for five minutes as the tissue is de-

stroyed. Imagine every sensing nerve in your body in pain for five minutes. Most die of shock before their brain is destroyed. That's why they're outlawed on the surface of any human planet. It has the same effect on Hetharians."

Lee smiled as if his prosecutor's mind had caught her at last.

"But you just said the Hetharians' affairs were their own and still you testify."

"A human agency interfered, an agency I can judge by human standards. Judgment on Easterbrook, Wilson and Graff was human being on human being."

Alice was almost glaring at Lee. "Is it clear now why I'm testifying?"

"Yes, very clear, but a bit too complicated for the public."

"What does the public have—"

There was a loud noise from the hall. Alice thought one of her parents must be home. She heard a weight hit the floor, then a senseless open-mouth yell.

Both she and Lee ran to the hall. Alice's stepfather was lying collapsed in the doorway, sprawled on his right shoulder with his left arm draped back across his ribs at an inhuman angle.

Lee looked toward Alice. "I thought violence wasn't their style." The satisfaction in his voice was evident.

After Alice's stepfather was treated, his arm sprayed up in a plastic cast by the doctor she called and his tranquilized body moved to his bedroom, Alice relaxed on the living room couch and the details of the scene in the hall over the body returned, emphasized differently from the simple chronology of their happening. She remembered being able to tell, without looking, or touching, or anything other than her mind, that her stepfather's bones were unbroken, that only muscle tissue was torn and ripped. She remembered her stepfather's groaning form on the floor and was irritated by her own lack of personal concern, only professional calm for a wounded man, and was irritated more by Lee's satisfaction that a man in extreme pain proved a debating point. One right mark for Lee. The man was right and nothing else.

"Now, perhaps," Lee said. Alice had almost forgotten he was still in the room. "You'll take my counsel and accept men to guard you."

"Lee, just get out of here."

Lee's face tried for an innocent, questioning expression but his features were incapable of mastering it. He started instead to protest with speed, but Alice cut him off.

"I'll see you in court," she said and left the room, barely able to control her desire to tell Lee she wouldn't testify. Later, lying on her back on top of her bed and letting her mind slowly push the decorative chandelier back and forth, gaining momentum with each small

push like a child on a swing, she realized Lee would never have understood if she refused to testify. He would have thought her intimidated by her stepfather's arm.

But it didn't matter what Lee thought or that he was shallow and self-righteous. Somewhere, beneath the callousness of her eight years in space, watching men succumb to temptations only vaguely imagined on Earth, beneath the pressures from outside her and within her, she hoped this once, when she was the key and the power to decide, for justice in spite of them all.

She fell asleep without undressing and awoke on the day the hearing began.

The first thing Alice noticed as she left the house for the monorail station was that Lee had two men following her even after their conversation. They were only tiny figures in the corner of her eye, but they were obviously following her. She glanced at her watch. With two hours until the hearing opened, she could give these gentlemen quite a tour of the city.

She walked quickly down the street toward the Wardlow Road monorail stop. In the distance she could hear the gentle *whish* of the train coming up from the south, then she heard it one stop from her. Only if she waited here and dawdled would she be able to keep Lee's men far enough away from the platform so they would miss the train and she would make it. She thought of Lee's features gone haywire when they told him she was missing.

She stopped and knelt without looking back as if removing something stuck to the bottom of her shoe. She heard the train picking up speed and almost before the expectation of more and more speed began to grow in the sound, the train was slowing again. She would have to wait until the last moment before sprinting to the platform and so had to keep her eyes on the train. The moment came and she was halfway out of her crouch when a voice spoke so close it startled her into halting.

"Miss Culligan." It was Schultz. In the second she realized the two figures had been Schultz and another man, the train was picking up speed toward the Yorty Park stop. She glanced at it, then turned to Schultz. He wore the same suit he had the day before and was accompanied by a man as thin as he but somehow giving the impression of more weight. Schultz had a thinness annealed by sedentary duties; this man had a tempered thinness.

"Mr. Schmaltz, how are you this morning?"

"This is no time to be cute. Would you please walk over to the platform with us?"

"No. I think I'll wait for the next train right here."

"We could force you."

"You mean he could force me."

"Yes."

Alice walked to the platform in front of the men. She started to step on the escalator when Schultz stopped her.

"This way, please." He drew a key from his pocket and opened the service door set in the concrete pedestal of the monorail platform.

"Down there," Schultz said.

The service escalator activated as Alice's foot touched the top step, starting the stairs moving down. As she glanced back at Schultz, she saw him standing on clean bright metal steps while below her the steps were darker and dusty; it had been a long time since anyone had been in here, she thought.

The escalator debouched into a small room that Alice guessed served power cables for the monorail. Both Schultz and his companion were wearing gloves. Alice looked around at the concrete walls and metal panels and thought of her stepfather. She wondered how long it would take her to get out of here, tied and gagged with a broken arm or even two.

"Miss Culligan," Schultz said and as Alice turned she saw the other man had a nerver pointing at her. An involuntary chill went up her back and she felt her skin become clammy and her stomach heave.

"He isn't going to use that," she said. "Sensors a mile away would pick it up and you wouldn't get two feet."

"You're quite right," he said, motioning for the thin man to give him the weapon. Schultz held it with obvious unfamiliarity. "It's only in case of emergency. Now, this is all quite simple. Are you planning on testifying?"

"I wasn't planning on going to the zoo today."

Schultz looked at Alice as if he were unable to understand her flippant attitude at so serious a moment. Then he turned to the thin man.

"Kill her," he said and began walking toward the escalator.

"Schultz!" Alice said.

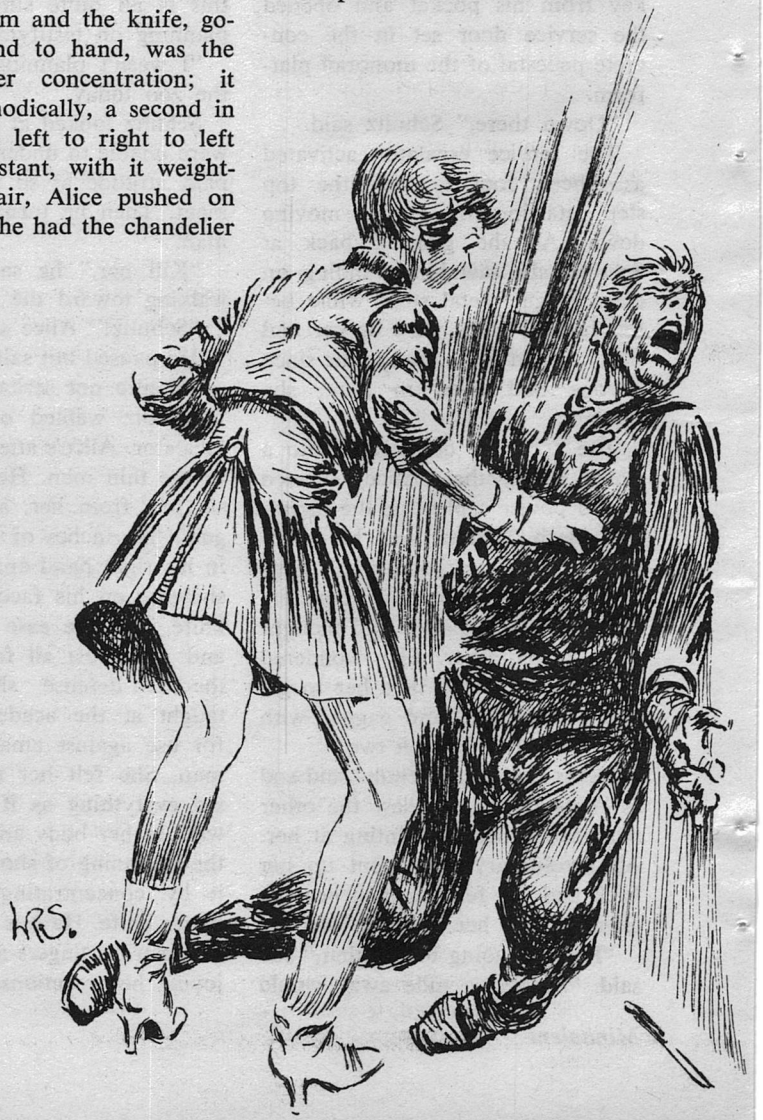
He paused but said nothing.

"You're not serious."

Schultz walked on toward the escalator. Alice's attention returned to the thin man. He was standing six feet from her, a knife with a good five inches of blade showing in his right hand and a tight smile showing on his face. He held the knife with the ease of experience and Alice lost all faith in any of the self-defense she had been taught at the academy; that was for use against amateurs, not this man. She felt her mind begin to see everything as if someone else were in her body and knew it was the beginning of shock. She fought it by concentrating on the thin man's knife. He was rolling the hilt between his fingers and thumb, enjoying her reactions.

She backed away from him and he followed, keeping the same distance between them. He crouched slightly and began throwing the knife from hand to hand so that Alice would be unable to tell which would strike. Alice backed around the small room and the knife, going from hand to hand, was the focus of her concentration; it jumped, methodically, a second in the air, from left to right to left and in an instant, with it weightless in mid air, Alice pushed on the knife as she had the chandelier in her room and it fell to the floor.

The thin man bent slightly to retrieve it and in desperation Alice's mind reached out for his chest. She could feel his heart pulsing in the chest cavity and moved her attention up over she knew not what



small veins and arteries around the heart to his inch-thick aorta, then along the aorta away from the beating heart until she touched the first two branching arteries, the coronary arteries. Her mind began to push the walls of both arteries —the effort was gigantic—and then, between beats, in the diastolic laxity of the arteries, she closed them.

The thin man was touching the knife on the floor when he gasped and fell back against the metal panels on the wall. His gloved right hand came up and grabbed at his chest and left shoulder while his face, jaw slack, was almost child-like in wide-eyed confusion. He slid down the wall, his right hand still to his chest.

Alice kicked the knife to the other side of the room and ran toward the escalator whose noise must have obscured the sounds below from Schultz. He was two-thirds of the way up but began turning as he heard the clatter of Alice's feet taking the metal steps two at a time. He saw her and began to reach inside his sweater. Alice fell forward in panic and grabbed Schultz's ankles, jerking as hard as she could, but was unable to pull his feet from under him. Off balance, he teetered on the step, then his back rushed down at her. She felt agonizing pain from her ribs pressed against the edge of a metal step but she heaved and his body kept going down the stairs. The building itself seemed to be shaking as Alice pushed herself to her feet on trembling arms and ran, slower this time, to the door where she hit the exit bar and was out into the morning. And there above her was a train; the building had shaken.

People leaving the train looked at the young, slightly bent, dirty girl, holding her side and moving shakily into the car, but no one offered to help her.

In the taxi hovering somewhere between the doctor's office where her broken ribs were spray-taped and the courtroom where she imagined Lee waiting in a state oscillating from self-satisfaction at making his point to dead panic at the thought of his career knifed inside a monorail serviceroom, Alice decided a bodyguard wouldn't be too bad an idea, maybe even fifteen of them.

The more she thought of the past two days, the more she realized their significance to her personally. At fifteen she thought her psionic thumb-twiddling would blossom to dominate her surroundings, but as she grew she learned nature allowed no such catholic control. But in a sense the promise of fifteen had come true. Because of her talent, Lee would by now have printed records of all United Services's illegal activities and because of her talent, she was on her way to testify, testimony which

would convict not only Easterbrook but would lead to arrests and convictions for the entire network to which he belonged; it would lead to the stabilization of Hethar by removal of the nervers, although she had no idea how that would be done. But it would be done and all because Alice could stand paper clips on end from a distance. It all hung on a heartbeat, that moment when she pushed the knife to the floor and reached into her assassin's chest. A chill went up her back at the vivid memory of the man's heart, almost as if she had held it beating in her hands. In a way altered by reality, her talent was what she had hoped at fifteen.

She entered the courtroom with a pleasant feeling about each of the guards at the doors and saw Lee turn from his associates to welcome her with histrionics, waving his arms expansively and smiling broadly. Was that a flicker of disbelief in the face of Easterbrook's counsel, or was Alice reading her wish into a blank expression? After all, Hayes, Easterbrook's attorney, may know nothing of Schultz's activities.

As Lee approached, he began talking to Alice. She could hardly hear through the din; Lee was right about the public interest.

"We've only got a couple of minutes, but I'll try to fill you in. After your call, Schultz was arrested in his office. They found Peters's body in the monorail room. Apparently he had a coronary or something like that just before he was going to kill you. Lucky for you."

"Wasn't it."

"I've decided to go ahead with the indictment as it stands instead of going through the complications of including this attempted coercion business. They were unsuccessful, so it really doesn't matter."

Alice looked up at Lee and a wry, one-sided smile came to her face.

"Due process a little too slow for ambition, Mr. Lee?"

"No. It's not that at all, not at all. They would simply have more time to plan something else. This way we keep them off balance; we keep pushing."

Alice looked into Lee's eyes, wondering why she always suspected him of having only half a plan.

"And when Schultz's trial comes up," she said, "and they discover his motives and Easterbrook's defense appeals on the grounds that I was intimidated by the admittedly evil deeds of his associate, which he, Hayes, knew nothing of, intimidated into exceptionally biased and unfair statements about his clients and they reverse Easterbrook's conviction because by then I'm one hundred million miles from Earth—what then prosecutor?"

"It won't happen that way, I assure you, Miss Culligan."

They walked down the courtroom aisle and Lee seated Alice in the first row of spectators.

"Why not?"

Lee was obviously irritated at her persistence.

"Because we're making arrangements with Schultz and his people." He turned away as if saying, that's all you need to know.

Alice felt like a child told half the reason for its early bedtime and knowing it could understand the rest if only it were told.

"What kind of arrangements, Lee? What kind of deal?" Her voice was getting slightly louder and her ribs were beginning to hurt again. "You didn't give them Easterbrook and that scum over there?" She gestured toward the table where the prisoners sat calmly. "What about their records?"

"Will you please hold down your voice, Miss Culligan, and think? Easterbrook and Wilson and Graff are just handlers, longshoremen, flunkies, what you will. I don't know how you knew about the mistaken mailing of their books, but they've been destroyed and we're arranging to give them Schultz for Easterbrook and his friends."

Rage almost overcame her as the type of agreement that would make Schultz's return meaningful and necessitate destroying the illegal records became clear in her mind and focused everything on Lee. She looked directly into Lee's unhomogeneous face.

"What you mean is not that they get Schultz who's irreplaceable and we get Easterbrook who's replaceable. You mean we get those three and United Services stays in business. That's the only way Schultz is more valuable than Easterbrook. And you get a flashy trial that will shoot you up the political ladder and I get parents on state incomes, a stepfather with an arm almost ripped off at the shoulder and for me three broken ribs. I should walk out of here right now."

This time Lee's expression was unchanged and a confidence Alice had never seen was behind his features. Slowly she realized that of them all, Easterbrook, Schultz, Peters, her stepfather, she herself, made mistakes in judgment of one kind or another in getting what they wanted—all but Lee. In spite of his shallow, graceless character, he had never been wrong.

"But you won't walk out," he said and his expression was almost fierce, "because all that matters to you now is that those three men are guilty and you'd rather have an ounce of justice, in spite of the consequences. You still believe in it all that much."

Lee turned and pushed through the small gate at the end of the aisle, then sat down behind the prosecuting attorney's table.

Alice sat quietly, glad her ribs were hurting more now so it was harder to think. She looked toward Lee in front of her. He was talking to one of his associates and had laid out an even row of pens and pencils in front of him. The din was suddenly gone as the bailiff entered. Her mind reached out to the slick plastic table and easily pushed the half dozen pens and pencils into Lee's lap, from which they clattered to the floor, breaking the silence. If she could do nothing else, she could embarrass him. She turned her attention to the papers neatly stacked on the table and, as Lee watched with his recovered pencils in hand like the stalks of some bloomless bouquet, the papers began to flutter to the floor. He reached for them but each illusive sheet skittered past his fingers and drifted to the floor. Lee was hunched over the table, arms outstretched, trying to hold down the papers with his body when the bailiff spoke.

"All rise."

The papers spilled out on the floor as Lee released them and stood for the judge's entry. As the last of the single sheets made its descent, Alice saw exposed on the table a light green United Services's mailing envelope. She realized, while watching Lee hurriedly scooping papers from in front of his table, that he had saved the records she sent him. He had no doubt combed them for the key records of this case to keep any reference to United Services out of the hearing. Easterbrook and his men would appear in the indictment as men acting alone, exploiting their position with United Services for personal profit. It was there in the envelope.

Alice eyed the United Services's envelope while the grand jury eyed Lee giving his introduction. There were only a few moments now until Alice took the stand, a few moments to get Lee to admit his involvement, or at least United Services's involvement. She could simply take the stand and try to implicate Lee but he would never allow her answers to get that far. Even if she blurted out something incriminating, Lee could minimize its effect on the grand jury by passing over it. He had enough poker face in him for that. She had to get both the evidence and its significance across without being rattled herself and her side hurt more now.

"Ladies and Gentlemen," Lee was saying, as the large twelve foot by twelve foot screen on the wall opposite the grand jury began to flicker, "we will first consider the arrest, demonstrating both that there were no irregularities in its conduct and the clever manner in which these three men, Easterbrook, Wilson and Graff, concealed evidence of their crimes not only from the authorities but from their very employers."

Alice looked to the screen. She wondered how much of what the jury saw went completely beyond their knowledge. She immediately recognized the view as that from the bridge of a patrolship in the area of Hethar. The ship was probably the *Repulse* to which Alice and Captain Wheeler had reported after the asteroid incident. Lee was explaining the boarding process, showing everything to be regular and fruitless. The camera was automatically following the arresting officer as he read the twenty-minute Arrest Act in turn to each of the accused. The jury was bored. Warrants were produced by the officers and the ship's log duly became public record. The judge was bored. A computer analysis of the automatic recording system of Easterbrook's freight was entered in the record. The defendants were bored.

"This is all very interesting, Mr. Lee," interrupted the judge, "but you have shown us only evidence that no crime has been committed. If you wish to defend these gentlemen, I can understand your approach but if you wish an indictment, you are certainly—"

"Your Honor, this is merely background against which to contrast my first and only witness at this time. The state calls Miss Alice Culligan."

Alice rose, approached the stand and was sworn. As she took the oath she saw Lee separating papers from the United Services's envelope and arranging two piles near the evidence hopper. The pile nearest the hopper would show no involvement by United Services and the other pile would remain unused. From the hopper papers were automatically fed under a notarycorder connected to the wall screen. Alice sat in the witness box.

"Now, Miss Culligan," Lee began, "you have seen the arrest tape of the accused and you see them now before you. Can you tell us where, if anywhere, you have seen them other than that?"

"On asteroid Wolff 21-5."

"What do you do that brought you to the asteroid?"

"I am third mate on the freighter *Iphegenia* and among my other duties is mineral evaluation of planetoid bodies which could prove useful to my company."

Lee went on, question by question, bringing out the side of Alice's story that would indict Easterbrook without touching United Services. It was impossible just to stop and say what she knew about their involvement nor could she wait and hope that cross-examination would bring out the information. In a grand jury hearing there was no cross-examination. It had to be now.

"I am going to show you some papers and ask whether or not you can identify them."

These would be United Services's

records further separating the company from its employees. Lee was using her both to indict Easterbrook and free United Services. Alice's mind moved to Lee's table and slowly reversed the two piles of papers Lee had so carefully arranged. Lee walked to the table and put this new pile into the hopper, then returned to the witness. He faced the jury, back to the screen.

"Now, Miss Culligan, can you, from your experience in the space industry, identify this first paper on the screen?"

Alice watched Lee's face intently to follow his reaction when she spoke.

"Certainly, Mr. Lee, that is a United Services's Statement of Operations for the last six months compiled by their home office computers and indicating a net income of two million credits from the sale of weapons to Heathar and the resale of legalium obtained for the weapons to firms in the Federation."

Lee didn't flinch. The tempo of his questioning was completely uninterrupted and to minimize the meaning of this document he was about to pass on to another question. Alice's mind touched Lee's face. She could not hope to control the intricate human machinery which produced words and force a confession so she would have to be content with mere punctuation. Her mind, now in the minute world between axon and dyndrite, blocked the nerves to muscles holding Lee's mouth closed. His jaw dropped. He turned toward the screen and several times Alice let through an impulse so that Lee's jaw seemed to studder while he searched for words. She released her hold on him and turned to the jury. The effect was not lost on them.

"Since Mr. Lee apparently has no further questions of this witness," said the judge, "you may step down."

When Alice finally left the courtroom after indictments had been issued against not only Easterbrook but the United Services's management, she was clearly aware of the place of so trivial a talent as hers, a mere gram on the scales of Justice, but one that had registered its effect for all its featherweight punch.

Lee had been right again about her wanting an ounce of justice. ■



**FROM FANATICISM,
OR FOR REWARD**

The essential—and repeatedly overlooked!—fact, is that guns don't kill men—men do. Instruments aren't important; motives are.

HARRY HARRISON

Illustrated by Leo Summers

Wonderful! Very clear. The electronic sight was a new addition, he had used an ordinary telescopic sight when he test-fired the weapon, but it was no hindrance. The wide entrance to the structure across the street was sharp and clear, despite the rain-filled night outside. His elbows rested comfortably on the packing crates that were placed before the slit he had cut through the outer wall of the building.

"There are five of them coming now. The one you want is the tallest." The radioplug in his ear whispered the words to him.

Across the street the men emerged. One was obviously taller than all the others. He was talking, smiling, and Jagen centered the scope on his white teeth, then spun the magnifier until teeth, mouth, tongue filled the sight. Then a wide smile, teeth together, and Jagen squeezed his entire hand, squeezed stock and trigger equally, and the gun banged and jumped against his shoulder.

Now, quickly, there were five more cartridges in the clip. Spin the magnifier back. He is falling. Fire. He jerks. Fire. In the skull. Again. Fire. Someone in the way: shoot through him. Fire. He is gone. In the chest, the heart. Fire.

"All shots off," he said into the button before his lips. "Five on target, one a possible."

"Go," was all the radioplug whispered.

I'm going all right, he thought to himself, *no need to tell me that. The Greater Despot's police are efficient.*

The only light in the room was the dim orange glow from the ready light on the transmatter. He had personally punched out the receiver's code. Three steps took him across the barren, dusty room and he slapped the actuator. Without slowing he dived into the screen.

Bright glare hurt his eyes and he squinted against it. An unshielded bulb above, rock walls, everything damp, a metal door coated with a patina of rust. He was underground, somewhere, perhaps on a planet across the galaxy, it didn't matter. There was here. Everywhere was a step away with a matter transmitter. Quickly, he moved to one side of the screen.

Gas puffed out of it, expelled si-

lently, then cut off. Good. The transmatter had been destroyed, blown up. Undoubtedly the police would be able to trace his destination from the wreckage, but it would take time. Time for him to obscure his trail and vanish.

Other than the transmatter, the only object in the stone cell was a large, covered ceramic vessel. He looked at the stock of his gun where he had pasted his instructions. Next to the number for this location was the notation *destroy gun.* Jagen peeled off the instructions and slipped them into his belt pouch. He took the lid from the vessel and turned away, coughing, as the fumes rose up. This bubbling, hellish brew would dissolve anything. With well-practiced motions he released the plastic stock from the weapon, then dropped it into the container. He had to step back as the liquid bubbled furiously and thicker fumes arose.

In his pouch was a battery-operated saw, as big as his hand, with a serrated diamond blade. It buzzed when he switched it on, then whined shrilly when he pressed it against the barrel of the gun. He had measured carefully a few days earlier and had sawed a slight notch. Now he cut at that spot and in a few seconds half of the barrel clanged to the floor. It followed the stock into the dissolving bath, along with the clip that had held the bullets. His pouch yielded up another clip which he slipped into place in the gun. A quick jerk of his forefinger on the slide kicked the first cartridge into the chamber and he checked to be sure that the safety was on. Only then did he slip the truncated weapon up the loose sleeve of his jacket, so that the rough end of the barrel rested against his hand.

It was shortened and inaccurate, but still a weapon, and still very deadly at short range.

Only when these precautions had been made did he consult the card and punch for his next destination. The instructions after this number read simply *change.* He stepped through.

Noise and sound, light and sharp smells. The ocean was close by, some ocean, he could hear the breakers and salt dampness was strong in his nose. This was a public communications plaza set around with transmatter screens, and someone was already stepping from the one he had used, treading on his heels. There were muttered words in a strange language as the man hurried away. The crowd was thick and the reddish sun, high above, was strong. Jagen resisted the temptation to use one of the nearby transmatters and walked quickly across the plaza. He stopped, then waited to follow the first person who passed him. This gave him a random direction that was not influenced by his own desires. A girl passed and he went

after her. She wore an abbreviated skirt and had remarkably bowed legs. He followed their arcs down a side street. Only after they had passed one transmatter booth did he choose his own course. His trail was muddled enough now: the next transmatter would do.

There was the familiar green starburst ahead, above an imposing building, and his heart beat faster at the sight of the Greater Despot police headquarters. Then he smiled slightly; why not? The building was public and performed many functions. There was nothing to be afraid of.

Yet there was, of course, fear, and conquering it was a big part of the game. Up the steps and past the unseeing guards. A large rotunda with a desk in the middle, stands and services against the wall. And there, a row of transmatter screens. Walking at a steady pace he went to one of the center screens and punched the next code on his list.

The air was thin and cold, almost impossible to breathe, and his eyes watered at the sudden chill. He turned quickly to the screen, to press the next number when he saw a man hurrying towards him.

"Do not leave," the man called out in Intergalact.

He had a breath mask clipped over his nose and he held a second one out to Jagen, who quickly slipped it on. The warmed, richer air stayed his flight, as did the presence of the man who had obviously been expecting him. He saw now that he was on the bridge of a derelict spacer of ancient vintage. The controls had been torn out and the screens were blank. Moisture was condensing on the metal walls and forming pools upon the floor. The man saw his curious gaze.

"This ship is in orbit. It has been for centuries. An atmosphere and gravity plant were placed aboard while this transmatter was operating. When we leave an atomic explosion will destroy everything. If you are tracked this far, the trail will end here."

"Then the rest of my instructions. . . ?"

". . . Will not be needed. It was not certain this ship would be prepared in time, but it has been."

Jagen dropped the card, evidence, onto the floor, along with the radioplug. It would vanish with the rest. The man rapidly pressed out a number.

"If you will proceed," he said. "I'll follow you."

The man nodded, threw his breath mask aside, then stepped through the screen.

They were in a normal enough hotel room, the kind that can be found on any one of ten thousand planets. Two men, completely dressed in black, sat in armchairs watching Jagen through dark glasses. The man who had brought

him nodded silently, pressed a combination on the transmatter, and left.

"It is done?" one of the men asked. In addition to the loose black clothing they wore black gloves and hoods, with voice demodulators clamped across their mouths. The voice was flat, emotionless, impossible to identify.

"The payment," Jagen said, moving so that his back was to the wall.

"We'll pay you, man, don't be foolish. Just tell us how it came out. We have a lot invested in this." The voice of the second man was just as mechanically calm, but his fingers were clasping and unclasping as he talked.

"The payment." Jagen tried to keep his voice as toneless as their electronic ones.

"Here, Hunter, now tell us," the first one said, taking a box from the side table and throwing it across the room. It burst open at Jagen's feet.

"All six shots were fired at the target I was given," he said, looking down at the golden notes spilling onto the floor. So much, it was as they had promised. "I put four shots into the head, one into the heart, one into a man who got in the way that may have penetrated. It was as you said. The protective screen was useless against mechanically propelled plastic missiles."

"The paragrantic is ours," the second man intoned emotionlessly, but this was the machine interpretation, for his excitement was demonstrated by the manner in which he hammered on his chair arm and drummed his feet.

Jagen bent to pick up the notes, apparently looking only at the floor.

The first man in black raised an energy pistol that had been concealed in his clothing and fired it at Jagen.

Jagen, who as a hunter always considered being hunted, rolled sideways and clutched the barrel of the shortened projectile weapon, With his other hand he found the trigger through the cloth of his sleeve and depressed it. The range was point-blank and a miss was impossible to a man of his experience.

The bullet caught the first man in the midriff and folded him over. He said *yahhhhh* in a very drab and monotonous way. The pistol dropped from his fingers and fell to the floor and he was obviously dead.

"Soft alloy bullets," Jagen said. "I saved a clip of them. Far better than those plastic things you supplied. Go in small, mushroom, come out big. I saved the gun, too, at least enough of it to still shoot. You were right, it should be destroyed to remove evidence, but not until after this session. And it doesn't show on an energy-detector screen. So you thought I was unarmed. Your friend discovered the

truth the hard way. How about you?" He talked quickly as he struggled to recover the gun that recoil had pulled from his hand and jammed into the cloth of his sleeve. There, he had it.

"Do not kill me," the remaining man said, his voice flat, though he cringed back and waved his hands before his face. "It was his idea, I wanted nothing to do with it. He was afraid that we could be traced if you were captured." He glanced at the folded figure, then quickly away as he became aware of the quantity of blood that was dripping from it. "I have no weapon. I mean you no harm. Do not kill me. I will give you more money." He was pleading for his life but the words came out as drab as a shopping list.

Jagen raised his weapon and the man writhed and cringed.

"Do you have the money with you?"

"Some. Not much. A few thousand. I'll get you more."

"I'm afraid that I cannot wait. Take out what you have—slowly—and throw it over here."

It was a goodly sum. The man must be very rich to carry this much casually. Jagen pointed the gun to kill him, but at the last instant changed his mind. It would accomplish nothing. And at the moment he was weary of killing. Instead he crossed over and tore the man's mask off. It was anticlimatic. He was fat, old, jowly, crying so hard that he could not see through his tears. In disgust Jagen hurled him to the floor and kicked him hard in the face. Then left. Ever wary he kept his body between the moaning man and the keys so there would be no slightest chance for him to see the number punched. He stepped into the screen.

The machine stepped out of the screen in the office of the Highest Officer of Police, many light years distant, at almost the same instant, on the planet where the assassination had taken place.

"You are Follower?" the officer asked.

"I am," the machine said.

It was a fine-looking machine, shaped in the form of a man. But that of a large man, well over two meters tall. It could have been any shape at all, but this form was a convenience when traveling among men. The roughly humanoid form was the only concession made. Other than having a torso, four limbs and a head, it was strictly functional. Its lines were smooth and flowing, and its metal shape coated with one of the new and highly resistant, golden tinted alloys. The ovoid that was its head was completely featureless, except for a T-shaped slit in the front. Presumably seeing and hearing devices were concealed behind the narrow opening, as well as a speech mechanism that parodied the full timbered voice of a man.

"Do I understand, Follower, that you are the only one of your kind?" The police officer had become old, gray and lined, in the pursuit of his profession, but he had never lost his curiosity.

"Your security rating permits me to inform you that there are other Followers now going into operation, but I cannot reveal the exact number."

"Very wise. What is it that you hope to do?"

"I shall follow. I have detection apparatus far more delicate than any used in the field before. That is why my physical bulk is so great. I have the memory core of the largest library and means of adding to it constantly. I will follow the assassin."

"That may prove difficult. He—or she—destroyed the transmatter after the killing."

"I have ways of determining the tuning from the wreckage."

"The path will be obscured in many ways."

"None of them shall avail. I am the Follower."

"Then I wish you luck . . . if one can wish luck to a machine. This was a dirty business."

"Thank you for the courtesy. I do not have human emotions, though I can comprehend them. Your feelings are understood and a credit mark is being placed on your file even though you had not intended the remark to accomplish that. Now I would like to see all the records of the assassination, and then I will go to the place where the killer escaped."

Twenty years of easy living had not altered Jagen very much: the lines in the corners of his eyes and the touch of gray at his temples improved his sharp features rather than detracting from them. He no longer had to earn his living as a professional hunter, so could now hunt for his own pleasure, which he did very often. For many years he had stayed constantly on the move, obscuring his trail, changing his name and identify a dozen times. Then he had stumbled across this backward planet, completely by chance, and had decided to remain. The jungles were primitive and the hunting tremendous. He enjoyed himself all of the time. The money he had been paid, invested wisely, provided him with ample income for all of his needs and supported the one or two vices to which he was addicted.

He was contemplating one of them now. For more than a week he had remained in the jungle, and it had been a good shoot. Now, washed, refreshed, rested, he savored the thought of something different. There was a pleasure hall he knew, expensive, of course, but he could get there exactly what he needed. In a gold dressing gown, feet up and a drink in his hand, he sat back and looked through the transparent wall of his apartment

at the sun setting behind the jungle. He had never had much of an eye for art, but it would have taken a blind man to ignore the explosion of greens below, purple and red above. The universe was a very fine place.

Then the alignment bell signaled quietly to show that another transmatter had been tuned to his. He swung about to see Follower step into the room.

"I have come for you, Assassin," the machine said.

The glass fell from Jagen's fingers and rolled a wet trail across the inlaid wood of the floor. He was always armed, but caution suggested that the energy pistol in the pocket of his robe would have little effect on this solidly built machine.

"I have no idea what you are talking about," he said, rising. "I shall call the police about this matter."

He walked towards the communicator—then dived past it into the room beyond. Follower started after him, but stopped when he emerged an instant later. Jagen had a heavy caliber, recoilless rifle with explosive shells, that he used to stop the multi-ton amphibians in the swamps. The weapon held ten of the almost cannon-sized shells and he emptied the clip, point-blank, at the machine.

The room was a shambles, with walls, floor and ceiling ripped by the explosive fragments. He had a minor wound in his neck, and another in his leg, neither of which he was aware of. The machine stood, unmoved by the barrage, the golden alloy completely unscratched.

"Sit," Follower ordered. "Your heart is laboring too hard and you may be in danger."

"Danger!" Jagen said, then laughed strangely and clamped his teeth hard onto his lip. The gun slipped from his fingers as he groped his way to an undamaged chair and fell into it. "Should I worry about the condition of my heart when you are here—Executioner."

"I am Follower. I am not an executioner."

"You'll turn me over to them. But first, tell me how you found me. Or is that classified?"

"The details are. I simply used all of the most improved location techniques and transmatter records, to follow you. I have a perfect memory and had many facts to work with. Also, being a machine, I do not suffer from impatience."

Since he was still alive, Jagen still considered escape. He could not damage the machine, but perhaps he could flee from it once again. He had to keep it talking.

"What are you going to do with me?"

"I wish to ask you some questions."

Jagen smiled inwardly, although his expression did not change. He

knew perfectly well that the Greater Despot had more than this in mind for an assassin who had been tracked for twenty years.

"Ask them, by all means."

"Do you know the identity of the man you shot?"

"I'm not admitting I shot anyone."

"You admitted that when you attempted to assault me."

"All right. I'll play along." Keep the thing talking. Say anything, admit anything. The torturers would have it out of him in any case. "I never knew who he was. In fact I'm not exactly sure what world it was. It was a rainy place, I can tell you that much."

"Who employed you?"

"They didn't mention any names. A sum of money and a job of work were involved, that was all."

"I can believe that. I can also tell you that your heartbeat and pulse are approaching normal, so I may now safely inform you that you have a slight wound on your neck.'"

Jagen laughed and touched his finger to the trickle of blood.

"My thanks for the unexpected consideration. The wound is nothing."

"I would prefer to see it cleaned and bandaged. Do I have your permission to do that?"

"Whatever you wish. There is medical equipment in the other room." If the thing left the room, he could reach the transmatter!

"I must examine the wound first."

Follower loomed over him, he had not realized the great bulk of the machine before, and touched a cool metal finger to the skin of his neck. As soon as it made contact he found himself completely paralyzed. His heart beat steadily, he breathed easily, his eyes stared straight ahead. But he could not move or speak, and could only scream wordlessly to himself in the silence of his brain.

"I have tricked you since it was necessary to have your body in a relaxed state before the operation. You will find the operation is completely painless."

The machine moved out of his fixed point of vision and he heard it leave the room. Operation? What operation? What unmentionable revenge did the Greater Despot plan? How important was the man whom he had killed? Horror and fear filled his thoughts, but did not affect his body, Steadily, the breath flowed in and out of his lungs, while his heart thudded a stately measure. His consciousness was imprisoned in the smallest portion of his brain, impotent, hysterical.

Sound told him that the machine was now standing behind him. Then he swayed and was pushed from side to side. What was it doing? Something dark flew by a corner of his vision and hit the floor. What? WHAT!

Another something, this one

spattering on the floor before him. Foamed, dark, mottled. It took long seconds for the meaning of what he saw to penetrate his terror.

It was a great gobbet of depilatory foam, speckled and filled with dissolved strands of his hair. The machine must have sprayed the entire can onto his head and was now removing all of his hair. But why? Panic ebbed slightly.

Follower came around and stood before him, then bent and wiped its metal hands on his robe.

"Your hair has been removed." *I know, I know! Why?* "This is a needed part of the operation and creates no permanent damage. Neither does the operation."

While it was speaking a change was taking place in Follower's torso. The golden alloy, so impervious to the explosives, was splitting down the center and rolling back. Jagen could only watch, horrified, unable to avert his gaze. There was a silvered concavity revealed in the openings, surrounded by devices of an unknown nature.

"There will be no pain," Follower said, reaching forward and seizing Jagen's head with both hands. With slow precision it pulled him forward into the opening until the top of his head was pressed against the metal hollow. Then, mercifully, unconsciousness descended.

Jagen did not feel the thin, sharpened needles that slid through holes in the metal bowl, then penetrated his skin, down through the bone of his skull and deep into his brain. But he was aware of the thoughts, clear and sharp, as if they were new experiences that filled his brain. Memories, brought up and examined, then discarded. His childhood, a smell, sounds he had long since forgotten, a room, grass underfoot, a young man looking at him, himself in a mirror.

This flood of memories continued for a long time, guided and controlled by the mechanism inside Follower. Everything was there that the machine needed to know and bit by bit it uncovered it all. When it was finished the needles withdrew into their sheaths and Jagen's head was freed. Once more he was seated upright in the chair—and the paralysis was removed as suddenly as it had begun. He clutched the chair with one hand and felt across the smooth surface of his skull with the other.

"What have you done to me? What was the operation?"

"I have searched your memory. I now know the identity of the people who ordered the assassination."

With these words the machine turned and started towards the transmatter. It had already punched out a code before Jagen called hoarsely after it.

"Stop! Where are you going? What are you going to do with me?"

Follower turned. "What do you

want me to do with you? Do you have feelings of guilt that must be expunged?"

"Don't play with me, Machine. I am human and you are just a metal thing. I order you to answer me. Are you from the Greater Despot's police?"

"Yes."

"Then you are arresting me?"

"No. I am leaving you here. The local police may arrest you, though I have been informed that they are not interested in your case. However, I have appropriated all of your funds as partial payment for the cost of tracking you." It turned once more to leave.

"Stop!" Jagen sprang to his feet. "You have taken my money, I can believe that. But you cannot toy with me. You did not follow me for twenty years just to turn about and leave me. I am an assassin—remember?"

"I am well aware of the fact. That is why I have followed you. I am also now aware of your opinion of yourself. It is a wrong one. You are not unique, or gifted, or even interesting. Any man can kill when presented with the correct motivation. After all, you are animals. In time of war good young men drop bombs on people they do not know, by pressing switches, and this murder does not bother them in the slightest. Men kill to protect their families and are commended for it. You, a professional hunter of animals, killed another animal, who happened to be a man, when presented with enough payment. There is nothing noble, brave or even interesting in that. That man is dead and killing you will not bring him to life. May I leave now?"

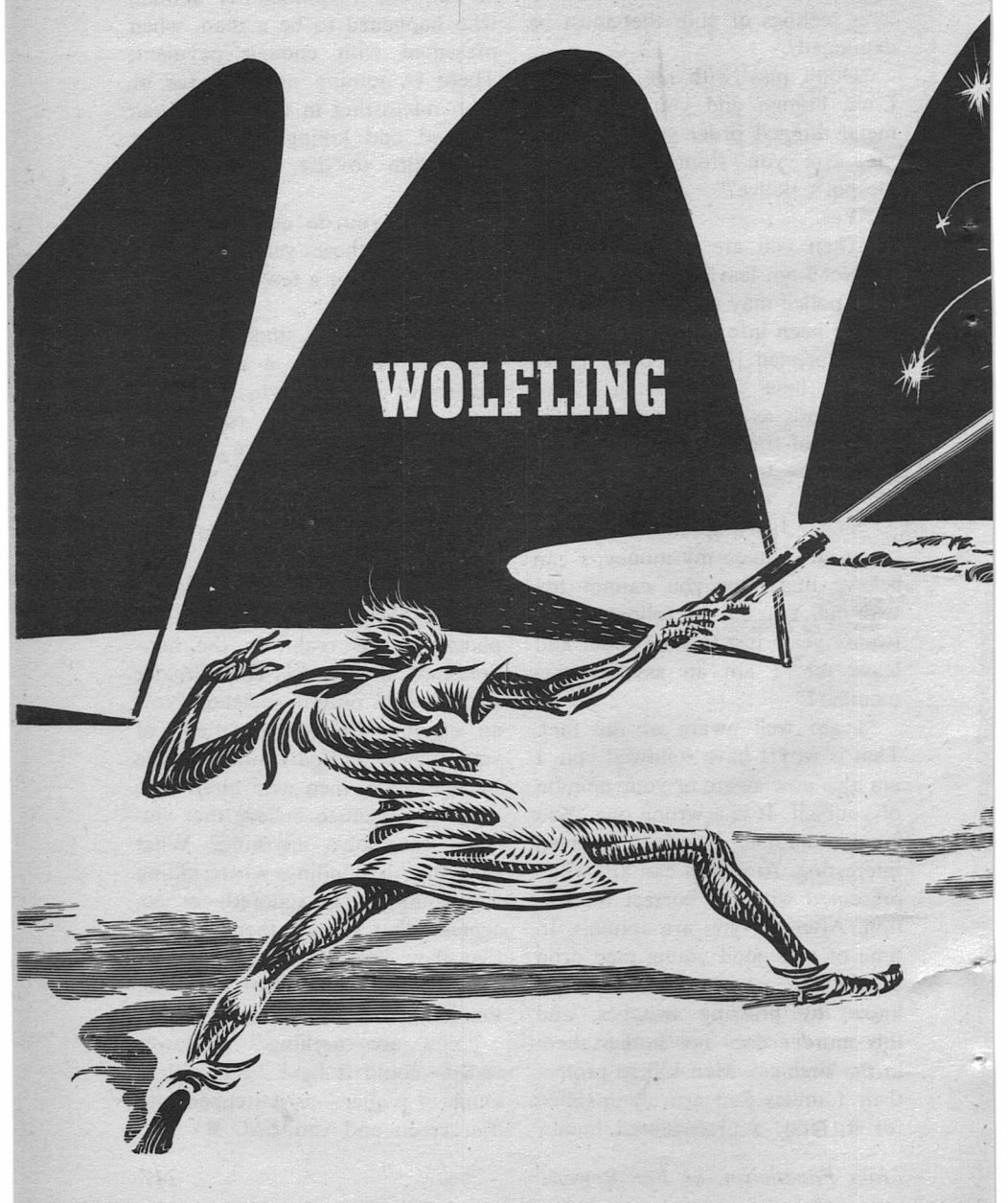
"No! If you do not want me—why spend those years following me? Not just for a few remnants of fact."

The machine stood straight, high, glowing with a mechanical dignity of its own, which perhaps reflected that of its builders.

"Yes. Facts. You are nothing, and the men who hired you are nothing. But why they did it and how they were able to do it is everything. One man, ten men, even a million are as nothing to the Greater Despot who numbers the planets in his realm in the hundreds of thousands. The Greater Despot deals only in societies. Now an examination will be made of your society and particularly of the society of the men who hired you. What led them to believe that violence can solve anything? What were the surroundings where killing was condoned or ignored—or accepted—that shaped their lives so that they exported this idea?

"It is the society that kills, not the individual.

"You are nothing," Follower added—could it have been with a touch of malice—as it stepped into the screen and vanished. ■


WOLFLING



Conclusion. The outsider coming into an ancient culture has a great advantage—if he has the wisdom and the intelligence to use it. He doesn't "already know" what's true of that culture . . .

GORDON R. DICKSON

Illustrated by Kelly Freas

Synopsis

James Keil, anthropologist, is the sole product of a massive project of Earth's, which has brought him finally to play bullfighter in an outdoor arena of the third world of Alpha Centauri. The purpose of this is not to entertain the natives of that world, but to interest a handful of the High-born, aristocrats of an interstellar Empire to which Alpha Centauri—and maybe Earth—belongs.

Ten years before a spaceship from Earth exploring out to Alpha Centauri discovered three worlds there inhabited by a people undeniably human. These informed the explorers that Alpha Centauri was merely an outpost of a huge, human Empire stretching inward into the galaxy—and that Earth can only be another part of this ancient Empire, colonized long ago and forgotten.

To Earth's people, the technological advantages of belonging to the advanced Empire are obvious. But whether such belonging would be equally advantageous emotionally and sociologically—whether, in fact, it might not be completely destructive to the independent human spirit evolved on Earth—becomes a burning question.

Therefore, Jim has been trained and sent to display the Spanish art of bullfighting in the hope of amusing the visiting High-born. Earth's hope is that, if sufficiently amused, the High-born may take him back with them to their Throne World—a world forbidden to any but the Emperor, the High-born and their servants. On the Throne World Jim can perhaps gather data with which Earth can determine to go with the Empire, or try to flee it.

Under the Alpha Centauran sun, Jim successfully fights and kills his bull. The Princess Afuan, leader of the High-born visitors and aunt to the distant Emperor, appears suddenly on the arena sand beside him. Afuan is as tall as Jim, himself, who is six feet six; and like all the High-born, she has onyx-white skin, catlike yellow eyes, white hair and eyebrows. She tells Jim to report to the High-born's ship, to be taken back to the Throne World.

Jim returns to his dressing room and finds himself confronting an angry Max Holland—Jim's liaison-man with the Project and Jim's theoretical superior in it. Max has found a small knife and a revolver in the luggage Jim is taking with him to the Throne World. This discovery has confirmed Max's long-held and growing suspicion that Jim has a personal, selfish reason for wanting to be the first Earth-human on the Throne World.

Max grimly orders Jim to abort the Project. Jim refuses—pointing out that Afuan has invited him and would hardly permit her orders to be countermanded. He repacks his archaic-seeming—by Empire standards—weapons and goes. Behind him, he hears Max:

". . . Observe! *That's what you're being sent there to do!* Nothing else! *Do anything else, Jim, to get Earth into trouble with the High-born, and we'll shoot you, like a mad dog, when you get home!"*

Outside, Jim takes a car to the spaceship of the High-born. Once aboard, he finds himself in the care of a High-born girl named Ro; a shirttail relative of Afuan, who looks after Afuan's managerie of pets—to which Jim has just been added.

Ro is a throwback, lacking the onyx skin, white hair and yellow eyes that the High-born have developed to mark their aristocracy. She is no more than five feet ten in height; but she is impulsively warm-hearted, with a deep affection for the pets, which Afuan hardly remembers possessing. Unthinkingly, Ro wraps Jim in this same affection.

She settles him aboard ship; and leaves him to change out of his bullfighting costume. While he is putting on a kilt and the little knife, a seven-foot tall High-born male appears and transfers him—all movements about the ship are by instantaneous shift from one room to another; there are no ordinary doors or corridors—to another room. He tells Jim to wait; and disappears.

In the room is a tigerlike feline which slowly begins to stalk Jim; and ends up leaping for his throat. Jim, however, does not move, and a second before contact, the beast disappears. Three of the tall, High-born males appear. One is the man who brought Jim to this room; another is a High-born named Mekon. A third, tall even for a High-born, is a languid fellow named Slotheil.

It turns out that Jim has been the subject of a bet. Mekon wagered Slotheil that Jim would run from the feline; and Mekon demands Jim tell him now why he did not. Jim answers that since the Princess Afuan was counting on showing him off to the Emperor, it seemed unlikely anything would be allowed to happen to him.

Slotheil, apparently something more than the lazy-voiced, supercilious aristocrat he appears, is favorably impressed by Jim's perceptivity and courage. Mekon, however, is enraged; and when Ro appears in search of Jim, Mekon turns on her. Jim wounds Mekon slightly with his knife in protecting Ro from the High-born; and Mekon, in a fury, goes for duelling weapons. Ro, however, goes for help and returns with Afuan and a cousin of the Emperor, Galyan—a cold-eyed High-born as tall or taller than Slotheil.

Afuan orders Mekon, now returned, to keep hands off Jim. She disappears, leaving matters in Galyan's hands, with orders to "fine" Mekon. Galyan takes Jim back to his own quarters, and demonstrates

on his servants how the High-born have faster physical reflexes than any of the lesser races. So that in a duel with Mekon, Jim could hardly have survived.

Galyan queries Jim closely about the people of Earth, with the implication that he might have a personal use for them. In parting, he warns Jim chillingly that only by pleasing him, Galyan, personally, *can Jim ever hope to see Earth again.*

Jim hunts for Ro and finds her in the menagerie, weeping over the dead body of the feline which had attacked Jim. It had been a former pet of Afuan's, later given to Mekon; and its destruction was Galyan's "fine" leveled against Mekon.

Ro, roused out of her usual gentleness, says fiercely that they may destroy her pets, but she will not let them destroy Jim. She begins to teach Jim the things he will need to know for survival on the Throne World. Jim is startled to discover that Ro, like all High-born, knows literally *everything necessary to make the Empire's advanced technology work. She, in turn, is astonished to find that Jim, unlike the usual members of the lesser races, needs to be told anything only once, in order to remember it.*

The ship reaches the Throne World. Jim is put to work training Afuan's servants to assist him in the bullfight before the Emperor. Afuan appears in Jim's dressing room just before the bullfight. She tells Jim she is not unaware that he has made quite an impression—not merely on Ro, but on Slotheil, and even Galyan. Without warning, she commands him to look at her, and triggers in herself an almost hypnotic power of seduction. Jim manages to resist her, however, leaving her startled and displeased.

". . . But, I think I understand you now, wild man," she says with slitted eyes. "Something in you at some time has made you ambitious, with an ambition larger than the universe."

She disappears. Jim goes out to fight and kill his bull. Then he approaches the Imperial box. The Emperor, a tall, pleasant, intelligent-looking High-born, gazes down at him. But then, his yellow eyes begin to shine with an unusual brightness and become slightly unfocused. A small trickle of saliva comes suddenly from one corner of his mouth.

"Waw . . ." he babbles, beaming brightly at Jim. "Waw . . ."

The High-borns seated nearby show no reaction. Plainly they are pretending nothing is happening out of the ordinary. Suddenly the Emperor becomes rational again.

" . . . Come and see me," he invites Jim. "We'll have a talk."

He vanishes. Returning thoughtfully to his quarters, Jim finds Ro there, bubbling with excitement. She tells him she has talked Slotheil into sponsoring Jim for Adop-

tion as a High-born, thus putting him under the Emperor's protection once the application is approved.

Slothiel appears and Jim tells them both of the Emperor's invitation, which he intends to accept. Ro is aghast. Such invitations are never taken seriously. Slotheil, however, is amused. When Ro will not, he shifts Jim to the Emperor's quarters.

The Emperor's bodyguards, three members of a corps of specially-bred men called Starkiens, draw their weapons at Jim's appearance. But the Emperor recognizes Jim; and insists on talking to him, over the objections of Vhotan, the Emperor's uncle and obviously the real executive authority on the Throne World. Both the Emperor and Vhotan are astonished to hear that it is Earth who has mastered spaceflight and refound the Empire, instead of the Empire refinding it.

But the Emperor's attention soon wanders. Vhotan takes Jim aside and questions him closely, to the extent of trying a variant of the hypnotic compulsion Afuan had tried to use on Jim.

As with Afuan, Jim resists successfully. Interested by this ability and the story of Earth, Vhotan promises Jim not only that his application for Adoption will be accepted; but that the Emperor will appoint him to a sinecure post as an officer of the Starkiens.

Vhotan summons Melness, Master of the Servants on the Throne World, to tell him of Jim's appointment. Jim is released. Back again with Ro, Jim asks her about the Emperor's sudden fit of idiocy. Ro claims she does not know what he is talking about—but, clearly, like the other High-born, she is refusing to admit it to herself.

A Starkien suddenly appears in the room with them.

"Who are you?" Jim demands.

"My name is Adok I," the Starkien responds. "But I am you."

Adok is to be Jim's substitute for most of Jim's ordinary Starkien duties. He is also Jim's bodyguard and trainer. He takes Jim down into the Servants' Territory—vast areas under the planet's crust—and teaches him to use Starkien weapons. Jim also discovers the existence of a library Files system in which he can hunt for records of any early Empire-colonizing expedition to Earth; and he notices that the servants—excluding the Starkiens who are always loyal to the Emperor—have a silent language of hand signals. Adok tells him their signaling has been abnormally evident lately. Jim sets himself to learn the language, by observation and deduction.

In the midst of this, Galyan—for no apparent reason—arranges for Jim to meet Wyk Ben, the Alpha Centauran Governor—and therefore, theoretically, Earth's as well. Galyan also suggests to Slo-

theil that Slotheil celebrate Jim's application acceptance with a large party. Jim asks Slothiel if the Emperor will be at this party—and is told that he will.

Jim has conquered the silent language enough to know that some plot is afoot involving certain servants. As the party starts, he sends Adok to locate a certain servant for him. Then Jim goes, as commanded, to talk with the Emperor.

They pace up and down together, and the Emperor's talk is, at turns, both sensible and wild. He particularly asks Jim if Earth has anything called a Blue Beast —and confesses he has been haunted for some time by visions of such a creature. Then he ends the talk and moves off.

Adok has discovered the servant and shows Jim where the man stands, all but hidden in a recess of the walls. Jim follows the Emperor around at the party, and when the Emperor goes into one of his spe'ls of idiocy, all the servants in the hall freeze in position —as if they are so many duplicates of the Emperor.

Jim shifts quickly to the recess, seizes the servant there and forces him to give the signal that starts the servants moving again. Vhotan, summoned by Adok at Jim's orders, witnesses this; and comes forward to question the servant— but the man collapses and dies before he can speak. Vhotan thanks Jim, nonetheless; and says he will handle the plot from here on. Jim, meanwhile, will be promoted to command of Ten-units of Starkiens and sent off-planet for his own safety.

Jim is sent, accordingly, with his Ten-units, to aid a planetary Governor of the lesser races, faced with a revolt led by his cousin, Cluth. Jim finds there is a rumor that the revolutionists have the backing of someone influential on the Throne World; and that consequently they are in unusual strength.

Against the advice of Harn II, his Adjutant-Commander—the true, Starkien officer in charge of the Ten-units—Jim does not send for reinforcements, but goes by aircraft with Harn, Adok, and the Governor to examine the rebels' camp after nightfall.

He finds it even larger than reported, but still divided into mutually distrustful sections. The nobles of these worlds, notes Jim, form noyaux*—anthropologically a gathering of small cliques and groups held together by reason of mutual antagonism. Taking advantage of this, Jim has Adok and Harn capture a sentry from the section of Notral, the noble most antagonistic to Cluth, the revolt-leader.*

Trading on his unusual height and the hissing accents of the High-born, Jim speaks to the sentry with his face in shadow and orders him to return and tell his noble that that noble is ordered to

take over from Cluth the command of the revolt—now!

Secretly, however, Jim instructs Adok and Harn to return the sentry, not to Notral's section but to Cluth's. Having done this, they return to their flying vessel and take up an air-borne patrol of the camp.

A little over an hour later, an overwhelmingly powerful flash of light winks from Cluth's section of the camp. Harn slams the flier's controls over and they flee, just in time to avoid an antimatter explosion. Antimatter weapons are available only to the High-born on the Throne World. Clearly this whole revolt has been a trap for the destruction of Jim and the Starkiens. Jim's trick with the sentry, however, by promoting dissension among the competing nobles, has caused one of them to trigger the explosion—not realizing its power.

"And now, sir?" asks Harn, as their flier streaks through the night sky back toward the capital city and their spaceship.

"Now," says Jim, grimly, "we head back to the Throne World —as quickly as possible."

"Sir!" acknowledges Harn.

He says no more after that; and both Jim and Adok sit without speaking. In the little vessel there is silence; until the Governor, recovering full consciousness after the shock wave, begins to mourn his dead cousin, with mutterings of Cluth's name, and stiffled, low-voiced sobs.

Part 3

IX

The ship that had brought Jim and the Starkiens to this world, was a smaller version of the space-going vessel that had brought Jim back from Alpha Centauri III. It was just big enough to hold the Ten-units of men; and required only one individual on duty watch in the ship's Power Room. It was directed by the same economical method according to which most things owned by the High-born were run. Whoever was in command of the ship merely visualized his destination; and left it to the ship to pick up that visualization, resolve it, match it with the destination itself and bring the ship to it. On their outward bound voyage from the Throne World, it had been Harn II who had directed the ship, since Jim had no mental picture of their destination. Now, headed back to the Throne World, Jim needed no help. He needed only to visualize any spot on the surface of the Throne World—his own quarters, if need be—and the ship would take over from there. He did so; and the ship obeyed.

As they were about to land, however, he took Harn II and Adok aside.

"Adjutant," he said to Harn, "I want you to keep the men aboard ship here, after we land. Don't go directly to your quarters to report

back. Wait here in the ship until I send for you."

Harn stood still without saying anything for a long second.

"This is against usual practice," he said, at last. "I assume it's an order?"

"It's an order," said Jim.

"In that case," said Harn, "the only thing that can override it would be either orders from the Emperor, or reason for us to believe that our staying aboard would be contrary to the Emperor's wishes. After what we've been through. I'm inclined not to think that these orders of yours can be contrary to the Emperor's wishes."

"You can believe me, Adjutant," said Jim, slowly. "It's the Emperor's welfare I'm concerned about. And that welfare may be better served if you men stay out of sight aboard this ship instead of going back to your quarters."

"Sir!" said Harn II, acknowledgingly. "You're returning to your own quarters, sir?"

"I am," said Jim, "and I'm taking Adok with me."

He touched Adok on the arm and shifted them both back into his own quarters. They were empty. He shifted to Ro's apartments.

Ro was there, in the room with all her pets—hers and Afuan's—cutting the nails of the apelike creature. But she dropped her tools and practically tackled him, in her enthusiasm in seeing him again.

"Jim!" she cried. "Oh *Jim!* . . ."

He let her squeeze him for a moment, and hugged her back briefly. Then, patting her head gently, he reached behind him and unlocked the grip of her hands so as to put her arms away from him.

"I'm sorry," he said gently. "But the situation's rather urgent."

She giggeld, almost wickedly, ignoring the fact that he held her hands. Her eyes ran over him.

"Is that your Starkien uniform?" she asked. "How big you look in it! Are those bands you're wearing still powered?"

"Yes," said Jim, not knowing quite what to make of this sudden, mad humor of hers; and hoping that a calm answer would calm her as well.

"They are?" she giggled again. "Show me! Smash that wall . . ."

She broke off, suddenly, and did sober up.

"No, no. What am I saying?" Abruptly, the ridiculous humor was gone from her. She looked up at him gravely. "What is it Jim? You look worried!"

"Worried?" He let go of her wrists. "Not exactly—but there may be something going on to be worried about. Tell me, Ro, what on the Throne World here is blue?"

"Blue? You mean the color, blue?" she asked. He nodded his head. "Why . . . white is the color we usually use. You know that. Occasionally, a little red. I don't

think there is much blue on the Throne World, nowadays, except a stray object or two that one of the High-born might've brought back from one of the colonial worlds."

"Think," said Jim, staring steadily at her. "Think hard."

"But, there really isn't any . . . oh," Ro interrupted herself, "unless you want to count the usual things. The sky here is blue. And the water is blue. Oh, and," she paused to smile again, "there's the Emperor's Blue Beast still hidden somewhere in the palace, some place, if you want to count that."

"Blue Beast?" His question was so sharp and abrupt that she paled.

"Why, yes Jim," she said, staring at him, "but it's nothing. It's just a toy that he used to have when he was a baby. Only he started to have nightmares about it, and they hid it from him. I don't know who hid it, or where it was hidden; and I don't think anybody knows, nowadays. But it got so bad that anything blue-colored was likely to—upset him. That's why there's never anything blue left lying around where the Emperor might see it. Why is it so important to you?"

He heard the question at the end of her speech; but it was like hearing an unimportant noise far off. His mind was whirring and he did not bother to answer her.

"I've got to see Vhotan, right away," he said. "How do I find him, Ro?"

"Jim, what is it?" she was really alarmed now. "Vhotan's with the Emperor. You can't just go charging in on the Emperor. Oh, I know you did it once, and got away with it. But you can't do it, now. Particularly, now."

"Why, particularly now?" Jim asked.

She took a small step back from him.

"Jim . . ." she said, uncertainly. "Don't—"

Jim made an effort to return his face to calmness.

"All right," he said. "Now tell me. Why is now so particular?"

"It's just that right now there's all this trouble going on, on the Colony Worlds," said Ro. "Vhotan's been sending out Starkiens to help the governors of the lesser races put down the trouble, until there aren't any left here on the Throne World. He doesn't have a moment to spare to talk to anyone—"

She broke off, staring at him again. *"Jim, will you tell me what it is!"*

But again, he hardly heard her. His thoughts were galloping far ahead under the impetus of this new piece of information. For a moment he gazed unseeingly out the transparent window of the pets' room at the ocean shore. An ocean shore, here too? The idea that Ro must carry a sandy beach and a piece of ocean around with her to provide a view for Afuan's pets was so ridiculous that it jolted

his thoughts back into effectiveness.

"I want to get in touch with Slothiel," he said, looking back at Ro. "Then, the four of us—you, I, Slothiel and Adok—must go and find Vhotan, whether he's with the Emperor or not."

"Are you crazy, Jim?" she said. "You can't go into the Emperor's presence wearing power bands like that! No one's allowed in his presence with anything more than a rod. His Starkiens would kill you out of reflex, the minute you appeared. If you have to do this wild thing, at least take those power bands off! You, too, Adok!"

She glanced past him at the Starkien. Her own fingers were already busy stripping the power bands off Jim's left arm. The wisdom of what she said was undeniable; and after a second, he began to assist her. A moment later, he had no weapon left but the rod in its loops at his belt. Looking around he saw that Adok had similarly rid himself of power bands.

"Now," he said to Ro. "To Slothiel's. You'll have to find him for us. I don't even know where his quarters are."

She touched his arm; and they were abruptly in a different suite of rooms.

"Slothiel!" called Jim. But no answer came back through any of the three doorways leading off from the room in which they had appeared.

"He's not here," said Ro. "And it's no use our moving all over the Throne World looking for him. He could be one jump ahead of us, and we'd never catch up with him that way. The best thing is just to wait here for him, Jim."

"Wait?" said Jim. "Waiting is the one thing we can't afford to do. Can't we—"

He broke off. For Slothiel had just appeared before them.

"Welcome home, Jim," said Slothiel. "You're the first of our conquering heroes to get back. I heard you'd landed ship; but when I went to your quarters just now, you weren't there. I tried Ro's—and all I found was a batch of discarded power bands. So I came back here to look for messages—and, here you are!"

He smiled and waved Ro and Jim graciously to hassocks. Adok, he ignored.

"Sit down," Slothiel said. "How about something to eat and drink? I can get you—"

"Nothing!" interrupted Jim. "Slothiel, you are loyal to the Emperor?"

Slothiel raised his eyebrows.

"My dear ex-Wolfling," he drawled, *"all* High-born are *loyal* to the Emperor. Otherwise how could we be loyal to ourselves?"

"There's loyalty and loyalty," said Jim bluntly. "I didn't ask you if you were loyal in the academic sense. I asked you if you were loyal in the—say—Starkien sense?"

Slothiel stiffened slightly. His white eyebrows drew together.

"What sort of catechism is this, Jim?" he asked. But the tone of his voice was no longer one of completely idle banter. Under a surface of indifference there was a note of hard interest.

"You haven't answered me, Slothiel," said Jim.

"Should I answer, then?" murmured Slothiel, in the tone of voice of a man choosing between two canapes on a serving tray. But his eyes remained unmoving on Jim. "After all, I am a High-born and this is only an ex-Wolfling, a being of the lesser races . . . yes, I will answer. I'm loyal, Jim." His voice had suddenly become hard, with none of the soft nonsense left about it. "Now, what is this? And I want a straight, direct answer!"

"My Ten-units of Starkiens on Athiya," said Jim evenly, "were baited into a military trap, that would have been no trap at all, if it hadn't been equipped with an antimatter weapon."

"Antimatter?" Slothiel's face stiffened for a second in astonishment, then quickly relaxed again as his High-born mind accepted the incredible statement and ran quickly on to examine the implications of it. Within a few seconds he looked at Jim again. "Yes, you're right, Jim. We should see Vhotan about this."

"That's what I've intended to do, all along," said Jim. "I was only waiting to find you and take you along with the rest of us."

"Rest of us?" Slothiel glanced at Ro and Adok. "You and I are sufficient."

"No," said Jim. "I need Adok with me as a witness to what happened. And Ro stays with us because it's safest for her."

"Safest?" Slothiel shot a glance at Ro, who was watching both men and looking puzzled. "Oh . . . yes, I see what you mean. She could be taken, and used as a hostage against you by whoever's behind this, if we left her unprotected. All right, Starkien!"

He beckoned Adok in close; and the four of them shifted as a group to their destination.

They appeared in a room that was not the same room in which Jim had encountered Vhotan and the Emperor before. This was a larger room; something like a ballroom with a lounge area at one end. All the other walls of the ballroom, except that which opened upon the lounge area, were covered to the high, white ceiling with light-green drapes. In the center of the ballroom floor sat a peculiar instrument with a basketball shaped head that was slowly rotating. In time with its rotation, various patterns in many colors other than blue flickered and played and swam around the ceiling. The Emperor was seated—almost sprawled—on the large has-

sock at the edge of the ballroom floor, staring raptly up at those patterns.

Nearby were three Starkiens, carrying rods and wearing power bands. Vhotan was some twenty feet away from the Emperor, standing over a table surface patterned with studs. Except that he was not seated, his position and actions were very much like those Jim had seen in him once before.

With the appearance of the four people, the three Starkiens had automatically drawn their rods. Vhotan looked up sharply, caught sight of Slothiel, and waved the rods back into their belt loops. He turned from the table surface to face the group, scowling a little at Jim.

"I wasn't notified your Ten-units had returned to quarters," he said to Jim. "I can use those men right now."

"That's why I ordered them not to return to quarters," answered Jim.

Vhotan frowned.

"What do you mean?" he said, sharply. "And who gave you the authority to—"

He was interrupted by the sudden appearance of a servant—a man of the same appearance of Melness, carrying a small white box.

"This has just been delivered for you, Vhotan," the servant said. "It was sent through the Princess Afuan from the Governor of—" the servant gave the imperial name for Alpha Centauri.

"All right," scowled Vhotan. The servant disappeared. Vhotan carried the box over to the table, felt about it for a second, and then lifted off a cover. His scowl deepened.

"What is this?" he asked. He started to swing back to face them; but at that moment a new voice interrupted him.

"Why, it's Oran," said the voice. It was the Emperor, roused from his gazing at the refulgent patterns of the ceiling, and now walking over to peer interestedly into the box. His hand went down and came up holding what looked like a chunk of granite, rough-cut, perhaps three inches in diameter. "And there's a note with it——"

He picked up a card from the box and looked at it.

"It says: *'At the request of my good friend, Jim Keil,'* " said the Emperor, turning to face Vhotan and the group as he read, " '*this specimen of rock from his homeland, the planet Earth, as a souvenir for the High-born, Vhotan.'* "

The Emperor, smiling delightedly, lifted his eyes to Vhotan.

"It's a present for you, Vhotan," he said, cheerfully, "from our ex-Wolfling, here! Here, you'd better take it!"

The Emperor tossed the rock to the older High-born, whose long hands went up automatically to catch it in mid air.

Vhotan's right hand closed about the flying object; and instantly, he was covered with a brilliant blue light—an eye-baffling light in which his outlines were distorted and altered from the human into something unclear, but heavy and thick-bodied, bestial.

The Emperor screamed, stumbling backward and throwing up both long-fingered hands to shield his face from the sight.

"Nephew—" it was the voice of Vhotan, but somehow distorted and mangled, into a growling bass. He raised blue-dazzling, thick, paw-like arms of light and took a step toward the Emperor, protectively.

The Emperor screamed again, and stumbled backward, almost falling over a hassock, but keeping to his feet. His heels rang on the bare floor beyond the lounge area. He flung up a long arm with finger pointing.

"The Blue Beast!" he screamed to his Starkiens. "Kill it! *Kill it!*"

If there was a hesitation on the part of the Starkiens, it was for less than a fraction of a second. At once the three rods were drawn and came up; and the blue-haloed figure of Vhotan, still stepping toward the Emperor with arms outstretched, was laced with white fire.

The figure slumped. The blue light went out. A small piece of reddish rock rolled unheeded across the carpeted floor of the lounge section. Silent and still, sprawled upon that same carpet, lay Vhotan; his face untouched, but his body and limbs almost dismembered by incredible burn-lines.

There was no more sound or movement in the room. The Emperor stood staring at Vhotan. He stared for a long moment, before his face and eyes began to change.

"Uncle?" he said, in a quavering, uncertain voice. "Uncle?"

Slowly he began to move toward Vhotan. As he got closer, his shoulders bowed, and his face twisted like a man undergoing some process of torture. Slowly he came up to Vhotan and stood over him. He gazed down into Vhotan's untouched face. For such a violent death, Vhotan's face was strangely serene. His eyes and mouth were closed, the muscles of his features were relaxed. From the neck up he looked like someone engaged in a moment's silent meditation.

"Vhotan . . ." began the Emperor on a note of anguish. But then his voice died in him, like the voice of a talking doll which had run down. He froze, unmoving in the position in which he was, leaning over Vhotan his arms half reaching down toward the body of the older man. For a moment, to Jim, it seemed impossible that such a pose could be maintained. But the Emperor stayed as he was, as unmoving as a statue cast in plaster of paris.

Behind Jim, Slothiel stirred. He stepped toward the Emperor.

"Oran!" Slothiel said.

There was sudden amused laughter at the far end of the ballroom floor. Out of the corner of his eye, Jim caught sight of the three Starkiens spinning about swiftly, their rods coming up.

Then there were three odd, coughing sounds; and as Jim finished raising his head, he saw the three Starkiens stumble and fall. On the polished ballroom floor, they lay as still as Vhotan lay.

Jim turned to look toward the far end of the polished floor. There, just in front of one of the green curtains, stood Galyan, holding a black rod in his right hand, and a strange, handgun sort of device, with a long, twisted barrel, in his left. Behind Galyan were Melness and Afuan. As Jim caught sight of them, Galyan tossed the handgun contemptuously away from him. It skidded across the polished floor until its further progress was blocked by a leg of one of the dead Starkiens.

Followed by Melness and Afuan, Galyan walked toward the lounge end of the room. His heels rapped with a strange loudness on the polished surface of the floor. He laughed again at the small group still standing there, as he came.

"You're quite a problem, Wolfling," he said to Jim. "Not only do you come back alive; but, having come back, you force me into taking action ahead of schedule. But it's come out all right."

He reached the end of the polished floor and stepped onto the carpet. He stopped, and transferred his gaze from Jim to Slothiel.

"No, Slothiel," he said, mockingly. "Not 'Oran'. 'Galyan'. We will have to teach you to say 'Galyan'."

X

Galyan's words seemed to echo all about them. Looking at Slothiel, Jim saw the other High-born begin to stiffen and straighten. Galyan was the tallest of the High-born that Jim had seen—with the exception of the Emperor, himself. But Slothiel was almost as tall. And now that he abandoned his carefully indifferent slouch, it could be seen how tall he was. The two men, both well over seven feet, faced each other across a distance of perhaps a dozen feet of carpeting.

"You've never been able to teach me anything, Galyan," said Slothiel, in a dry, hard voice. "If I were you, I wouldn't expect to begin now."

"Slothiel, don't be an idiot—" Afuan spoke up. But Galyan cut her short.

"Never mind!" he said sharply, his lemon yellow eyes still glittering unmovingly on Slothiel. "Who are we to tell Slothiel what to do? As he said—we've never been able to teach him anything."

"We?" Slothiel smiled bitterly, "Are you into the Emperor's plural form already, Galyan?"

"Did I say—*we?"* responded Galyan. "A slip of the tongue, Slothiel."

"Then you don't intend to kill him?" said Slothiel, indicating the frozen figure of the Emperor with a slight movement of his head.

"Kill him?" said Galyan. "Of course not. Care for him—that's what I'm going to do. Vhotan never did take the best care of him. He's not well, you know."

"Are you?" asked Jim.

Galyan's eyes flickered for a moment to Jim.

"Be patient, little Wolfling," Galyan purred. "Your time is coming. Right now I'm amusing myself with Slothiel."

"Amusing yourself?" said Slothiel, with a grim irony that matched the cruel humor in Galyan's voice. "You'd better be thinking up explanations for how Vhotan died."

"I?" chuckled Galyan. "The Emperor's Starkiens killed Vhotan, at the Emperor's order. You saw that."

"And who killed the Starkiens?" said Slothiel.

"You, of course," said Galyan. "You went out of your head at the sight of Vhotan ordered killed for no reason—"

"No reason?" echoed Slothiel. "What about that disguised blue distortion light? Jim never had the Alpha Centauran Governor send it to Vhotan. That was your doing."

Galyan twitched a finger. Melness scuttled forward and sideways, to pick up the small granitic-looking shape from the carpet and tuck it into a pocket in his kilt. He retreated hastily behind Galyan again.

"What distortion light?" asked Galyan.

"I see," said Slothiel. He took a deep breath. "But, of course, I didn't kill the Starkiens."

"I wouldn't go around telling the other High-born that, if I were you," said Galyan. "The Emperor will need someone to look after him, now that Vhotan's dead I'll be taking our uncle's place. If you go around telling a wild story like that the Emperor may well decide that you need treatment and isolation for your own good."

"Oh? But even if I say nothing," drawled Slothiel, "those three Starkiens were killed by a heavy duty intersperser. The other Starkiens, when they get back, will wonder how three of their number could have been killed by a rod while those three were wearing full power bands. I can prove that I haven't been near the heavy-duty weapon armory for years."

"No doubt," said Galyan. "But you said—when the other Starkiens get back. They won't be back."

Slothiel looked about suddenly at Jim. Jim nodded.

"So the Wolfling brought back

word of our little traps on the Colony planets, did he?" said the voice of Galyan. Both Jim and Slothiel looked back at the tall High-born. "You know then, Slothiel. The Starkiens won't be back. I've got it in mind to create some new Starkiens—some responsible to me, rather than to the Emperor. At any rate, you see your own choice. Be silent—or be removed from the social scene."

Slothiel laughed; and, reaching over, drew the rod from the loops in Adok's belt.

Galyan laughed also—but with a half-incredulous note of contempt in his voice.

"Have you really lost your senses, Slothiel?" he said. "We've fenced as boys. You've got fast reflexes, but you know that no one's faster than I am. Except—" He nodded at the still-paralyzed figure of the Emperor.

"But we haven't tried it as men," said Slothiel. "Besides, I'm a little tired of all our play-acting here on the Throne World. I think I'd like to kill you."

He took a step forward. Galyan stepped hastily back onto the polished surface of the ballroom floor; and slowly drew the rod from the loops in his own belt.

"Shall we bet on it?" he said. "Let's bet a banishment amount of Lifetime Points, Slothiel. How about fifty Lifetime Points? That ought to put either one of us over the limit."

"Don't talk to me of toys," said Slothiel slowly advancing foot after foot, as Galyan equally slowly backed and circled away from him. "I think I've lost my taste for gambling. I want something a little more exciting."

They were almost in the center of the polished floor area now. There was still a dozen feet between them; but, tall and bent over as they were, their wide shoulders hunched forward, the rods held low before them, it seemed as if scarcely an arm's length separated the two of them.

Abruptly, the rod in Slothiel's hand spouted the white lightning of its charge. At the same time he leaned back and to one side in an attempt to outflank Galyan.

Galyan, however, crouched under the white bolt that crackled where his head had been a moment before; and spun on his heels, still in crouched position, to come up facing Slothiel and with his own rod shooting white fire.

A little faster, and Galyan would have been able to drive the fire of his own rod under the line of fire from Slothiel's rod. However, the moment of Galyan's turning, was enough time to allow Slothiel to lower the aim of his own weapon; so that the discharge from Galyan's rod met the discharge from Slothiel's head on, and the two lines of white fire splashed harmlessly into an aurora of sparks. From

that first moment, the lines of fire from the two rods were never disengaged.

Following that first wild gamble by both men—and Jim had practiced at the rods enough with Adok to understand what gambles they had been—Slothiel's attack, and Galyan's counter—both of the High-born fought defensively and warily for more than a dozen fairly routine engages. As Jim had discovered with Adok, fighting with the rods was very similar to fencing with sabers, provided they were sabers which changed lengths frequently and unexpectedly. The focal point of the fire put forth by the rods—that point at which the discharge was most destructive—was at the tip of an inner cone of pure white light; and this cone could be extended by the man holding the rod at will, from a length of six inches to ten feet. This was the point at which the utmost power of the rod was exerted. Directly in counter, the point of the cone of fire in one rod could only be blocked by the point of the cone of fire in another. However, if the cone tip should miss its target and the opposing rod could project its cone tip into the stream of fire behind the other tip, the penetrative cone could be bent aside, so that the attacking cone could go on to strike its target.

It was not just a matter of deflecting the stream of fire from the opponent's rod, therefore, but of deflecting it with a portion of your own flame which was stronger than that part of the opponent's flame it encountered.

Slothiel and Galyan moved about the polished floor, each careful to avoid being backed against one of the green-draped walls. From the encounters of their weapons came a steady succession of spark showers—exploding suddenly into near fountains of light, when the two cone points were the parts of the flames to make contact. Galyan was smiling grimly, thin lipped and narrow-nostriled. Slothiel, on the other hand, after his first savage attack, fought with a sort of dreamy grace and a relaxed face; as if this was not a duel to the death, but some minor sporting engagement in which he had perhaps backed himself with a small bet.

But Slothiel's apparent indifference was no true clue to the way in which the duel was progressing. Hardly more than a few weeks ago, it would have looked to Jim more like some smoothly expert dance by two large men with some sort of Roman candles in their hands—a dance intended to demonstrate the rhythm of the men and the beauty of the fireworks, rather than anything else. Now, he knew better. Moreover, because he knew better, he was able to see that the duel could have only one ending. As graceful and swift as Slothiel was, half a dozen times al-

ready Galyan had almost caught him on the disengage from an encounter of the cone tips of their weapons. Sooner or later, Slothiel's luck and skill would not prevent him from being a little bit too slow in deflecting the other man's fire.

Galyan was, indeed, the quicker of the two. And in this sort of duel, that meant everything.

In fact, as they all watched, the end came. Galyan leaped to his left suddenly, struck high with his flame, dropped down under the line of Slothiel's countering discharge, and flicked up again inside to slash across Slothiel's left thigh and left upper arm, which held the rod.

Slothiel went down on the polished floor on his right knee, his left arm dangling. His rod dropped and skidded a little ways across the floor.

He laughed up into the face of Galyan.

"You find it funny, do you?" panted Galyan. "I'll wipe that smile off your face!"

Galyan lifted his rod to bring it down across Slothiel's features.

"Galyan!" shouted Jim, running forward.

The sound of his voice did not stop Galyan, but the rapid beating of Jim's shoes upon the polished floor, did. Galyan whirled like a cat.

Jim had drawn the rod from his own belt as he ran. He had just time to get it up, and send the flame lancing from it, ahead of him, before Galyan's rod joined its discharge with his in a shower of sparks.

Jim broke the flames of both rods high, disengaged and stepped back. Galyan laughed.

"Wolfling, Wolfling . . ." he said, shaking his head. "You never really have learned what High-born means, have you? It seems I'll have to give you a lesson?"

"Jim!" called Slothiel, from the floor behind Galyan. "Don't do it! You haven't got a chance! Run!"

"You're both wrong," said Jim. Now that he was actually engaged with Galyan, his mind was as cold as ice, and the remote coldness of his voice echoed that iciness within him.

He engaged with Galyan and they fought through at least a dozen engage-and-disengage actions. Galyan's eyebrows rose.

"Not bad at all," he said. "In fact, very good for anyone not a High-born—and unthinkably good for a wild man. I do hate to waste you, Wolfling."

Jim did not answer. He continued to fight on—warily and conservatively, concerned only with keeping the cone tip of the discharge from Galyan's weapon always out beyond the cone tip of his own flame and making sure he would not be backed against one of the walls. If he had not had experience fencing with foil, epee and

saber back on Earth, he would never have been able to pick up enough of the technique of handling the rods in the few short weeks in which he had trained with Adok. But that experience, combined with his own native ability, was now paying off. Little by little, as the duel went on, he found himself making his moves more surely.

"In fact, why should I waste you?" panted Galyan, during one of the engages in which their faces came within a few feet of each other. The white skin of the High-born's features, gleamed with perspiration. "Be sensible, Wolfling; and don't make me kill you. Slothiel has to die anyway—now. But I had large plans for you, as head of my own, new Starkiens."

Jim maintained his silence. But he stepped up the pressure of his attack. Off to one side, without warning, he heard the sound of running feet on the bare floor, and Ro's voice shouting.

"Keep back!"

Jim dared not look up at the moment; but a few seconds later, he found himself facing toward the lounge end of the room; and he caught a quick glimpse of Ro, standing beside the fallen Slothiel, holding the rod Slothiel had dropped and covering Afuan with it. Melness lay sprawled at Adok's feet—and it looked as if the Master Servant's neck had been broken. Only the unmoving figure of the Emperor, standing over the dead Vhotan, was unchanged.

"Who do you think you are?" snarled Galyan, suddenly. "When I speak to you, I want an answer, Wolfling!"

Jim countered a high thrust from the taller figure, and stepped to the left in a disengage, without a word.

"All right!" said Galyan, showing his teeth in an almost-mechanical smile. "I've had enough of this! I've been playing with you, hoping you'd come to your senses. Now I'm through with that. I'm going to kill you, Wolfling!"

The High-born attacked suddenly, in a shower of sparks; and Jim found himself fighting for his life. Galyan had a tremendous advantage in reach over him, and the taller man was using that reach, as well as the spring in his long legs, to the upmost advantage. Parrying swiftly and continuously, Jim was still forced to give ground. He backed away, and Galyan crowded close upon him, driving him still farther backward. Jim attempted to circle to the right, but found that way cut off by the blazing white lightning of Galyan's weapon. He tried to break to the left, but Galyan outreached him. Out of the corners of his eyes he could see the other walls of the room; and from their distances he knew that the fourth wall must be close behind him. If Galyan could pin him against that wall, the restriction of

Jim's movements would give the High-born an advantage that would end the duel quickly.

Galyan's teeth were bared fixedly now; and sweat dripped from his chin. His great advantage in reach cut off any escape to right or left. Shortly, also, there would be no possible retreat straight backward for Jim.

There was only one way out of this prison of flame with which Galyan was fencing him about. That was to outdo Galyan at the High-born's strongest point. Jim must counter Galyan's attack with an attack of his own, that would force Galyan first to halt, then to retreat in his turn. And in such an attack, there could be only one counter to Galyan's advantage in reach—and that was speed. Jim would have to be quicker than the High-born.

There was no point in further hesitation. Jim came out of a disengage and attacked savagely. At the first fury of Jim's onslaught, Galyan gave ground along three steps out of sheer, reflexive, surprise. But then he stood his ground.

He laughed, hoarsely, pantingly and briefly. He seemed about to say something—but evidently decided against wasting his breath, of which neither he nor Jim had any to spare. For better than a dozen engages-and-disengages they stood essentially toe to toe on the gleaming floor, neither giving an inch.

It was a murderous pace. One that neither man could keep up for another minute without dropping from exhaustion and breathlessness. But Jim did not slacken off; and slowly Galyan's eyes began to widen. He stared at Jim across the twin, clashing streams of fire, through the showers of white sparks.

"You . . .can't . . . do . . ." he gasped.

"I am—" panted Jim.

Galyan's face unexpectedly contorted into a staring mask of fury. He disengaged from Jim's current attack; and went immediately into a sweeping circle with the fire from his instrument—almost the type of maneuver that singlestick fighters call a *moulinet.*

It was a simple, raw bid to outspread the cone tip of flame from Jim's weapon. If Galyan could get ahead of that guarding cone tip, he would have a fraction of a second in which to go back in over Jim's guard and destroy him. Galyan's flame whipped over and down; and Jim's blurred along with it. For a full arc, the desperate race held, without Galyan's weapon gaining—and then, it was Jim whose cone-tip moved ahead.

He gained coming up on the second arc, broke in over the line of Galyan's weapon; and shot the full force of his flame into the taller man's unprotected chest.

Galyan tottered and fell, his own weapon coming around and down

to tap its rod-end against Jim's right side just below the ribs, before falling from his hand to the floor. Jim felt a sudden coldness and hollowness inside him. Then Galyan was slumped at his feet.

Jim lifted his head slowly, his lungs pumping heavily to restore oxygen to his exhausted body.

He saw through sweat-blurred eyes, that Slothiel now held the rod that Ro had held earlier, covering Afuan. Not only that, but Slothiel was, amazingly, back on his feet; although he leaned heavily on Ro. As soon as he had breath left to spare for walking, Jim moved slowly from Galyan's dead body over toward Ro and Slothiel.

"Jim . . ." said Slothiel, wonderingly, looking at him and slowly putting the rod he held, back into his belt. Now he ignored Afuan, as Jim came up, "What are you?"

"A Wolfling," said Jim. "What're you doing back on your feet?

Slothiel laughed, not entirely cheerfully.

"We heal fast, with the help of our power sources, we High-born," he said. "How about you?"

"I'll do," said Jim. He kept his right elbow pressed close against his side. "But I've left another body for you to clean up. I think it's time for me to go home.

"Home?" Slothiel echoed.

"Back to Earth—the world I came from," said Jim. "The more thoroughly this is hushed up, the better for the Emperor. Nobody will miss me if I disappear; and you can tell the other High-born that Galyan killed Vhotan and the Starkiens in a fit of madness; and you had to kill him in return, to protect the Emperor."

He glanced over at Afuan, who stood like a tall, white statue.

"That is," Jim said, "if you can persuade the Princess to keep quiet."

Slothiel looked at her only briefly.

"Afuan won't disagree with me," Slothiel said. "Galyan suggested that if I didn't agree with him, the Emperor might decide I needed isolation and treatment. The same can apply to her."

He turned, letting go of Ro, and walked, a little limpingly but completely under his own power, off the polished floor onto the carpet and up to the unmoving figure of the Emperor. Jim and Ro followed him.

Slothiel touched the Emperor lightly on the arm.

"Oran . . ." he said gently.

For a moment the Emperor did not move. Then, slowly he straightened and turned about, breaking into a warm smile as he did so.

"Slothiel!" he said. "Good of you to come so quickly. Did you know that I can't find Vhotan anywhere? He was here just a few minutes ago, and I could swear he hadn't left the room, but he's vanished completely."

The Emperor looked down the long length of the polished floor, around the draped walls, back up and around the lounge, at the carpet and at the ceiling over which the colored shapes still played. He looked everywhere, but at the still shape down at his feet.

"You know I had a dream, Slothiel," the Emperor went on, wistfully looking back at the other High-born. "It was just last night —or at least, it was some time recently. I dreamed that Vhotan was dead, Galyan was dead, and all my Starkiens were dead. And when I went looking around the palace and the Throne World to find the other High-born to tell them about this, there was no one —not in the palace, not on the whole world. I was all alone. You don't think I would ever be left alone like that, do you, Slothiel?"

"Not while I'm alive, Oran."

"Thank you, Slothiel," said the Emperor. He looked around the room again, however, and his voice became a little fretful. "But I wish I knew what happened to Vhotan. Why isn't he here?"

"He had to go away for a while, Oran," said Slothiel. "He told me to stay with you until he gets back."

The Emperor's face lit up once more with his warm smile.

"Well then, everything's all right!" he said happily. He threw an arm around Slothiel's shoulders and looked around the room. "Why, there's Afuan—and little Ro and our little Wolfling. Ex-Wolfling, I should say."

He gazed at Jim, and his smile slowly faded into a solemn, rather sad expression.

"You're going away, aren't you . . . Jim?" he said, plainly dredging up the name from some hidden corner of his memory. "I thought I heard you say something about that, just now."

"Yes, Oran," said Jim. "I have to go now."

The Emperor nodded, his face still sadly solemn.

"Yes, I heard it, all right," he said, half to himself. His eyes fastened on Jim. "I hear things sometimes, you know; even when I'm not really listening. And I understand things, too; sometimes I understand them better than any of the other High-born. It's a good thing you're going back to your own world, Jim."

The Emperor's hand slipped from Slothiel's shoulder. He took a step forward and stood looking down at Jim.

"You're full of young energy out there, Jim," he said. "And we're tired, here. Very tired, sometimes. It's going to be all right for you and your Wolflings, Jim. I can see it, you know—very often I see things like that, quite clearly . . ."

His lemon yellow eyes seemed to cloud, going a little out of focus, so that he stared through Jim, rather than at him.

"I've seen you doing well, Jim," he said. "You and the other Wolflings. And what's well for you is well for all . . . all of us." His eyes unclouded and once more he was focused on Jim again. "Something tells me you've done me a signal service, Jim. I think before you go, I'd like to finish your Adoption. Yes, from now on I declare you to be a High-born, Jim Keil." He laughed, a little, suddenly. "I'm not giving you anything you don't already have."

He straightened up and turned back to Slothiel.

"What should I do now?" he asked Slothiel.

"I think you should send Afuan back to her quarters, now," said Slothiel, "and tell her that she's to stay there until she hears something more from you."

"Yes," the Emperor's glance swung around to fasten on Afuan; but she only met it for a moment, before turning furiously upon Jim and Ro, who stood beside him.

"Mud-face! Wild man!" she spat. "Crawl off into the bushes and mate!"

Jim stiffened; but Ro caught hold of his left arm.

"No!" she said, almost proudly. "You don't need to. Don't you see —she's jealous! Jealous of *me!*"

Still holding strongly to his arm she looked up into his face.

"I'm going with you, Jim," she said. "Back to this world of yours."

"Yes," said the Emperor unexpectedly, but thoughtfully, "that's right. I saw it that way. Yes, little Ro should go with him . . ."

"Afuan!" said Slothiel, sharply.

The Princess threw him a glance as full of hatred as the one she had directed at Ro and Jim. She disappeared.

Jim's head swam, suddenly. He took a strong grip on himself, internally; and the room steadied.

"We have to go quickly, then," he said. "I'll send you those Starkiens from my ship, Slothiel. You can keep them close to the Emperor, until you're able to get back as many as possible of the other units who've been sent out to the Colony Worlds. If you order them back quickly, you shouldn't lose too many of them to Galyan's anti-matter traps."

"I'll do that. Good-bye, Jim," said Slothiel. "And thank you."

"Good-bye, Jim," said the Emperor. He stepped forward offering his hand. Jim freed his left arm from Ro's grasp and took the long finger awkwardly with his own left hand.

"Adok," said the Emperor, without letting go of Jim's hand, but glancing over at the Starkien, "do you have a family?"

"No more, Oran," answered Adok in his usual flat tone. "My son is grown, and my wife has gone back to the women's compound."

"Would you like to go with Jim?" asked the Emperor.

"I—" for the first time since Jim had known him, the Starkien seemed at a loss for words. "I am not experienced in liking or not liking, Oran."

"If I order you to go with Jim and Ro, and stay with them for the rest of your life," said the Emperor, "will you go willingly?"

"Yes, Oran. Willingly," said Adok.

The Emperor let go of Jim's hand.

"You'll need Adok," he said to Jim.

"Thank you, Oran," said Jim.

Ro's grip tightened on his arm once more.

"Good-bye, Oran. Good-bye, Slothiel," said Ro. And at once they were no longer in the palace room, but at the docking berth where Jim had left the ship containing his Ten-units of Starkiens.

Harn was standing just outside the ship, like a man on watch, when they appeared. He turned quickly to face Jim.

"It's good to see you, sir," he said.

Jim unexpectedly felt ship and berthing dock waver and slip around him once more. He pulled himself back to clear-headedness again just in time to hear Adok speaking to Harn.

"The High-born Vhotan and the Prince Galyan are dead," Adok was saying briefly, "and three Starkiens have been killed. The High-born Slothiel has taken Vhotan's place. You and your men are to go to the Emperor."

"Yes," Jim managed to say.

"Sir!" acknowledged Harn, and vanished.

Abruptly they were inside the ship, Jim, Ro and Adok. Another wave of disorientation passed through Jim and he felt Ro helping him down gently onto the level surface of a hassocklike bed.

"What is it . . . Adok!" he heard her voice; but distantly, as if at the far end of a tilted corridor, down which he was sliding, ever faster, ever farther away from her. He made a great effort, and visualized in his mind, first the spaceport at Alpha Centauri III, and then from there the spaceport back on Earth from which he had taken off. It was his last effort—from now on it would be up to the ship. But from what he had read out of the Files of the Throne World's Learning Centers, he had no doubt the ship would be able to locate Earth from the directions he had just given it.

He let go, and went back to sliding away down the tilted corridor. But there was one thing more yet, he had to do. He fought his way back to consciousness and Ro, for a second.

"Galyan burnt my side as he died," he muttered to her. "Now I'm dying. So you'll have to tell them for me, Ro. On Earth. Tell them everything . . ."

"But you won't die!" Ro was crying, holding him fiercely with both her arms about him. "You won't die . . . you *won't* . . ."

But even as she held him, he slipped out of her grasp and went sliding—this time with no further check or hope of return—down that long tilted corridor into the utter darkness.

XI

When Jim opened his eyes at last to light after that long slide into darkness, it took him a long time with the help of the light to recognize the shapes of things around him. He felt as if he had been dead for years. Gradually, however, vision sharpened. Perception returned. He became aware that he lay on his back on a surface harder than any hassock; and the ceiling he stared up at was white, but oddly grainy and close above him.

With a great effort he managed to turn his head; and saw shapes that he gradually made out to be a small bedside table, several chairs and a white screen of the sort used in hospitals. In all, a single room, with a window at the far end which let in a yellow, summer sunlight he had not seen for quite a while. Through the window he could see only sky; blue sky, with a few isolated puffs of white clouds scattered about it. He lay staring at the sky, slowly trying to put things together.

Obviously, he was on Earth. That meant that at least five days must have passed while he was unconscious. But if he was on Earth, what was he doing here? Where was here? And where were Ro and Adok, to say nothing of the ship?

He lay still, thinking. After a while, absently, he felt the side where the flame of Galyan's torch had penetrated as the High-born had died. But his side felt smooth and well. Interested, he pulled down the covers, pulled up the blue pajama top he was wearing, and examined that side. As far as he could see, it looked as if he had never been wounded at all.

He pulled the covers up again, and lay back. He felt well, if a little heavy-bodied, as if the lassitude of a long sleep was still clinging to him. He turned his head and looked at the small table by his bedside. It held an ordinary plastic pitcher, a glass with some remnants of ice floating at the top of the water within it, and a small box of paper handkerchiefs. The signs were overwhelming that he was in a hospital. This would not be surprising, if he still had the deep wound in his side that Galyan's rod had made. But there was no wound.

He investigated further. Below the top level of the table by his bed was a vertical surface with a telephone handset clinging magnetically to it. He picked up the handset and listened; but there was no

dial tone. Experimentally, he tried dialing some numbers on the dial set in the center of the inner face of the handset. But the phone remained dead. He put it back; and, in the process of doing so, discovered a button also on the vertical surface with the word *Nurse* printed below it.

He pressed the button.

Nothing happened. After about five minutes of waiting, he pressed it again.

This time, it was only a matter of seconds before the door swung open. What entered was not the uniformed lady he had been expecting; but a heavy-bodied young man not much shorter than himself, with a thick, powerful looking body dressed in white slacks and white jacket. He came up to the bed, looked down at Jim without a word, and reached to the bed to take Jim's left wrist. Lifting the wrist up, he counted the pulse, gazing at his wristwatch as he did so.

"Yes, I'm alive," Jim told him. "What hospital is this?"

The male nurse, as he seemed to be, made a noncommittal sound in his throat. Finished counting, he dropped Jim's wrist back onto the bed and turned toward the door.

"Hold on!" said Jim, sitting up suddenly.

"Just lie there!" said the man, in a deep, gruff voice. Hastily, he opened the door and went out, slamming it slightly behind him.

Jim threw back the covers and jumped out of bed in the same quick motion. He took three steps to the door and grasped its handle. But his fingers slipped around the smooth, immovable metal as he tried to turn it. It was locked.

He shook the handle once; and then stepped back. His first impulse—quenched almost as soon as it was born by the immediate caution of his now thoroughly-awakened mind—was to pound on the door until someone came. Now, instead, he stood gazing at it thoughtfully.

This place was beginning to look less like a hospital and more like a place of care for the violently insane. He spun about quickly and went to the window. What he saw confirmed the growing suspicion in him of his surroundings. Invisible from his bed, a mesh of fine wire covered the window opening completely, some four inches beyond the window itself. The wire looked relatively thin—but it was undoubtedly strong enough to be escape-proof for anyone lacking tools.

Jim looked out of the window and down; but what he saw gave him little information—merely a width of green lawn bordered on all sides by tall pine trees. The trees were tall enough to cut off the view of whatever lay beyond them.

Jim turned around and thoughtfully went back to sit down on the edge of his bed. After a moment,

he lay down and pulled the covers up over him again.

With the patience that was so much an innate part of him, he waited.

At least a couple of hours must have gone by before anything more happened. Then, without any advance notice, the door to his room opened and the male nurse came back in, followed by a slight man in his late forties or early fifties with a balding head and narrow face, wearing a white physician's coat. They came up to the head of the bed together; and the slight man in the white physician's coat met Jim's eyes.

"Well, all right," he said, turning his head slightly toward the male nurse. "I won't need you."

The male nurse went out, clicking the door shut behind him. The physician, for such he certainly must be, reached out for Jim's wrist and took his pulse.

"Yes," he said, as if to himself after a moment. He dropped the wrist, pulled back the covers, lifted the pajama coat and examined Jim's side—the one that had been wounded. His fingers probed here and there. Abruptly, Jim stiffened.

"Sore?" the physician asked.

"Yes," said Jim, flatly.

"Well, that's interesting," said the doctor. ". . . If true."

"Doctor," said Jim quietly, "is there something wrong with you —or with me?"

"No, there's nothing wrong with you," said the physician, yanking Jim's pajama top down and tossing the covers up on him again. "As for me—I don't believe it. The only thing I believe is what I saw when you came in here—and that was a small perforation in your right side."

"What is it you don't believe, then?" asked Jim.

"I don't believe that you had a burned area where that perforation was, a burned area at least two inches wide and six inches deep six days ago," said the physician. "Yes, I've seen the pictures of your ship on television; and I know what that tall girl told me; but I don't believe it. In the first place, with that kind of damage done to you internally, you'd be dead long before you got here. Now, I can believe in a small perforation that heals without a visible scar. But I can't swallow the larger story."

"Is there any reason you should?" asked Jim, gently.

"No, there isn't," said the physician. "So I'm not going to worry about it. As far as I'm concerned you're well and ready for anything —and I'll so advise them."

"Them?" asked Jim.

The physician stared down at him.

"Doctor," said Jim, quietly, "for some reason you seem to have a bad opinion of me. That's your privilege. But I don't think it's your privilege to keep a patient in

the dark about where he is and who is concerned about him. You mentioned a tall girl who told you about me. Is she outside right now?"

"No, she isn't," said the physician. "As for answering your question, the people who are concerned about you are officials of the World Government. I've been told that it's my duty not to talk to you except as required in your treatment. You don't require any more treatment; and so I've got no more excuse to talk to you."

He turned and headed for the door. With his hand on the knob, he seemed to experience a twinge of conscience, for he paused and turned back to Jim.

"They'll be sending someone in to see you, shortly after I tell them you're well," he said. "You'll be able to ask him all the questions you like."

He turned away from Jim once more, tried the door and found it locked. He pounded on it with his fist, and shouted through it to someone who was evidently on the far side. After a moment the door was cautiously unlocked, and he was allowed to slip out through the least possible opening. The door slammed and clicked shut once more.

The wait was considerably shorter this time. It was no more than fifteen or twenty minutes before the door opened again—and immediately clicked shut once more—behind a man about ten years younger than the physician, with a brown, tanned face and a gray business suit. He came in, nodded unsmilingly at Jim, and briskly drew one of the chairs up to the bed. Jim sat up on the edge of the bed.

"I'm Daniel Wylcoxin," the man said, "call me Dan, if you like. There's going to be a Government Committee Inquiry, and I've been assigned as your counsel."

"What if I don't want you?" asked Jim, mildly.

"Then, of course, you don't have to have me," said Wylcoxin. "Actually the Inquiry has nothing to do with a court trial. That's to come later, if the Inquiry decides to take that course of action. Actually, you don't legally need counsel, and if you don't want me, I'm not going to be forced on you. On the other hand, it's not likely the Committee would recognize someone else as counsel for you, since—as I say—counsel really isn't supposed to be necessary for you."

"I see," said Jim. "I'd like to ask a few questions."

"Fire away," said Wylcoxin, leaning back in his chair and laying his arms flat on the armrests of it.

"Where am I?" asked Jim, bluntly.

"That, I'm afraid, I can't tell you," said Wylcoxin. "This is a Government hospital for special people and situations where secrecy

is required. I was brought here in a closed car, myself. *I* don't know where we are—except that we're no more than twenty minutes ride from Government Center, where my own office is."

"Where's my spaceship? And where are the woman and the man who came with me?"

"Your ship is at Government Center spaceport," said Wylcoxin, "surrounded by Security guards that keep everyone at a quarter mile distance. Your two companions are still aboard the ship—for which you can thank the Governor of Alpha Centauri III. He's here on Earth; and when Government people wanted to move your two friends out and put their own men aboard the ship, the Governor evidently talked them out of it. It seems the woman you have with you is what they call a High-born; and the Governor is evidently scared silly of anyone in that classification. I suppose I can't blame him—"

Wylcoxin broke off to look curiously at Jim.

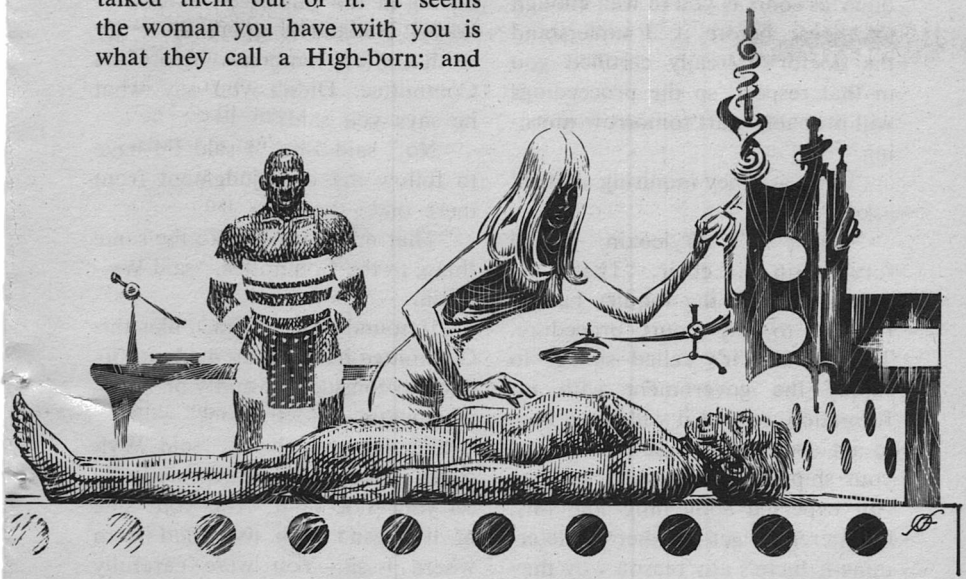
"I understand the High-born run the Empire?" he wound up.

"They do," said Jim flatly. "What am I doing here?"

"This lady, this High-born—"

"Her name is Ro," interrupted Jim, grimly.

"Ro, then," said Wylcoxin, "met the first Government people to come aboard your spaceship after it landed. There was quite a well-known group, I understand; because the Alpha Centauri Governor, who's visiting Government



Center here, recognized the ship as being one belonging to these High-born. Anyway, Ro let them aboard, and told them quite a story, including how you got wounded fighting some kind of duel with a Prince of the Empire. She said you were a lot better; but she didn't object when the Government offered to take you to one of our own hospitals for care. Evidently they convinced her that whatever she could do, the kind of medicine you were used to might do you more good in the long run."

"Yes," murmured Jim. "She's not the suspicious kind."

"Evidently," said Wylcoxin. "At any rate, she let them take you. And here you are. And the Committee's scheduled to start its Inquiry as soon as you're well enough to appear before it. I understand the doctor's already certified you in that respect, so the proceedings will probably start tomorrow morning."

"What are they inquiring about?" asked Jim.

"Well . . ." Wylcoxin leaned forward in his chair. "That's the point. As I say the Inquiry has no relation to any court procedure. Theoretically it's called simply to supply the government with information, so that it will know how to act about you, your friends and your ship. Actually, and I imagine you expected something like this, it's merely a get-together to determine if there's any reason why they shouldn't set the wheels in motion to bring you to trial for treason."

The final word of Wylcoxin's sentence fell softly on the still air of the hospital room. Jim looked at him for a second.

"You said—as I probably expected it." Jim echoed, quietly. "What makes you think I expected something like this when I got back here?"

"Why—" Wylcoxin paused and shot him a keen glance, "Maxwell Holland came back after you left Alpha Centauri III for the Throne World with those other High-born; and evidently he reported you as saying then that you meant to pay no attention to your orders, but to raise any kind of hell you felt like raising at the Imperial Court. Certainly, Holland is going to testify to that effect tomorrow before the Committee. Didn't you say what he says you said?"

"No," said Jim. "I said I'd have to follow my own judgment from there on."

"That might sound like the same thing, to the Committee," said Wylcoxin.

"It sounds," said Jim, "like this Committee has already made up its mind to consider me guilty of . . . what was it . . . treason?"

"I'd say they have," said Wylcoxin. "But then I'm automatically on your side of it. And your side of it doesn't look too good from where I sit. You were carefully

selected to be the man sent in to the Throne World, and trained at a great deal of trouble and expense, so that you could go among these High-born and observe them. Then you were to report back to Earth with your observations. The Government would make up its mind whether we were really a lost bit of this Empire, and bound to consider ourselves a part of it, or whether there was a chance we'd evolved on Earth here entirely separately—and really were a different race entirely from the so-called human beings of the Empire. Right?"

"Yes, that's right," said Jim.

"Good, so far," said Wylcoxin. "But now, according to this Ro, instead of merely observing you started out by getting into a fight with one of the High-born and knifing him aboard the ship going to the Throne World; then followed that up by joining some military bodyguard belonging to the Emperor when you got there, winding it all up by involving yourself in some kind of intrigue in which the Emperor's uncle and cousin were killed, as well as several bodyguards. Is *that* right?"

"It covers the physical fact of what happened," said Jim evenly, "but it distorts them, and the situations that gave rise to them, completely out of recognition."

"You're saying that this girl Ro is a liar?" Wylcoxin demanded.

"I'm saying that she didn't tell it that way," said Jim. "Tell me, did you get the story direct from her, or secondhand from somebody else who heard it from her?"

Wylcoxin sank thoughtfully back in his chair and rubbed his chin.

"I got it secondhand," he admitted. "But, if the man who reported what she said to me can make it sound the way I made it sound just now to you, then that's the way Government witnesses will be making it sound to the Committee tomorrow morning."

"It sounds more than ever like a hanging Committee," said Jim.

"Maybe . . ." Wylcoxin rubbed his chin thoughtfully again. Suddenly he jumped to his feet and began to walk up and down the room.

"I'll tell you," he said, stopping in front of Jim. "I wasn't too happy about being assigned as your counsel. Maybe I'd been brainwashed a little myself."

He checked himself.

". . . I don't say that because so far you've said anything to make me alter my own feelings about you and the situation," he said, hastily. "I say that simply because you've opened my eyes to the fact that there might—I say *might*—be a certain amount of prejudice on the other side."

He sat down again in his chair before Jim.

"Well," he said, "let's hear your side of it. What happened from the time you left Alpha Centauri III until you landed back here?"

"I got myself taken to the Throne World," said Jim, looking straight at the other man, "to find out, as you say, whether the Empire was populated by humans we were related to, or whether we were a separate stock from them entirely. Everything else happened after that as necessity dictated."

Wylcoxin sat for several seconds after Jim had stopped talking; almost as if he expected Jim to continue.

"Is that all you've got to say?" he demanded then.

"That's all for now," said Jim. "I'll tell a more complete story to that Committee tomorrow if they care to listen."

"You're deliberately not telling me anything you know that might help you, then," said Wylcoxin. "Don't you understand I can't be of any use to you unless you're as open with me as you possibly can be?"

"I understand it," said Jim. "Quite frankly, I don't trust you. I trust your good will and honesty toward me; but I don't trust your capability to understand what I tell you; any more than I'd trust the capability of any one else who hadn't been to the Throne World."

"Why, man," said Wylcoxin, "that takes in everyone on Earth!"

"That's right," said Jim. "I don't think anyone from Earth could help me much. Not if Max Holland, as you say, is there to testify against me and the Committee seems determined to find ground for bringing me to trial for treason."

"Then I can't be any good to you!"

Wylcoxin jumped to his feet out of the chair and headed toward the door.

"Wait a minute," said Jim. "Perhaps you can't help me by defending me, anymore than any other Earth-born human can, but you can help me in other ways."

"How?" Wylcoxin turned almost belligerently, with one hand on the doorknob.

"To start off with," said Jim quietly, "by considering me innocent until I'm proven guilty."

Wylcoxin stood for a second with his hand on the doorknob, then his hand dropped free. He came back slowly and sat down in the chair once more.

"My apologies," he said, looking up to Jim. "All right. You tell me what I can do."

"Well," said Jim, "for one thing, you can go to that Committee meeting with me tomorrow as my counsel. For another thing, you can answer a few questions. First—why should the Committee and the Government and people in general be so eager to find me guilty of treason when all I've done is come back safe, with a valuable spaceship and a couple of people from the Throne World? I don't see how either of those things could suggest that I had treason in my heart

when I was on the Throne World. Of course there's Max Holland wanting to nail me. But if he was the only one, it doesn't seem to me that I'd have too much to worry about."

"Why, don't you understand?" Wylcoxin frowned up at him. "All this talk of treason—all this is because they're afraid that you did things on the Throne World that will make the Empire want to take it out of Earth, in payment or revenge."

"Why?" asked Jim.

"Why . . ." Wylcoxin did not quite sputter, but he came close to it. "Maybe it's because of you that an uncle and a cousin of the Emperor are dead. Isn't it possible that this Emperor would want to make somebody pay for those deaths?"

Jim chuckled. Wylcoxin's eyebrows rose in astonishment and bafflement.

"You think that's funny?" the other man demanded.

"No," said Jim. "It's just that I suddenly see where it all came from, this fear that has me threatened with a charge of treason. Treason carries the death penalty, doesn't it?"

"Sometimes . . ." said Wylcoxin, grudgingly. "But what're you talking about?"

"I'm afraid I couldn't explain it to you," said Jim. "Tell me, can you go and see Ro, aboard the spaceship?"

Wylcoxin shook his head.

"I tried that earlier," he said. "The authorities wouldn't let me go out to the ship."

"Can you send her a message?" asked Jim.

"I think I can do that," Wylcoxin frowned. "I don't know if I can get an answer for you though."

"An answer won't be necessary," said Jim. "Ro gave me up to Earth's doctors without any protest. So she must be trusting them, where I'm concerned. That leads me to believe that she doesn't know what this Committee is aiming at with me, tomorrow. Could you get word to her of what they're after, and what their attitude toward me is likely to be?"

"I think so," said Wylcoxin. More energetically he added, "Yes, I know I can! If nothing else, I can get word to her when she comes in tomorrow morning. They'll be calling her to repeat her story to the Committee. She'll be there tomorrow, too, undoubtedly."

"If you can get word to her this evening on the ship, I'd appreciate that more," said Jim.

"I should be able to," Wylcoxin looked at him oddly. "But what do you expect from her? She can't very well change her story from what it was earlier."

"I don't expect her to," said Jim.

"But you said no one from Earth could help you. That leaves only Ro and that other passenger you brought back from the Throne World," said Wylcoxin. "Let me

warn you that these are almost in the position of being prosecution star witnesses. In short, you don't have anyone to testify for you."

"I might have," Jim smiled slightly. "There's the Governor of Alpha Centauri III."

"Him!" Wylcoxin's eyes lit up. "I'd never thought of him! That's right—he did put in a good word for your Ro, when she wanted to stay aboard the spaceship. Maybe he would speak up in your defense tomorrow. Want me to get in touch with him?"

Jim shook his head.

"No," he said. "Leave that to me."

Wylcoxin shook his head.

"I don't know," he said, helplessly. "I just don't know. But I guess I'm along for the ride. Anything else?"

He looked up at Jim.

"No," said Jim. "Just get that message to Ro, if you can."

"All right." Wylcoxin got to his feet. "I'll be around about half an hour before it's time for you to be taken into Governement Center; and I'll ride in with you."

He went over to the door, rattled the doorknob and pounded on the door panel.

"It's Wylcoxin!" he shouted through the door. "Let me out!"

After a second, the door opened gingerly. Wylcoxin looked over at Jim.

"Well, good night," he said. "And good luck."

"Thank you," said Jim quietly.

Wylcoxin went out, and the door was shut and locked behind him. Jim lay down on the bed, and closed his eyes. For a moment the rush of thoughts that came immediately upon him threatened to overwhelm him. But he stemmed and silenced them with a grim self-control. After a little while, like a soldier in the field and under arms, he slept.

XII

Daniel Wylcoxin came for him at eight fifteen the following morning; and rode along as Jim was transferred by closed car to the Committee Room in one of the Government buildings at Government Center. The Inquiry, Wylcoxin told him, was to start at nine.

Jim only asked the other man whether he had been able to get in touch with Ro. Wylcoxin nodded.

"They wouldn't let me out to the ship to see her," Wylcoxin said, "but I was able to talk into the ship from the guard line outside it, on a field phone they've rigged in order to keep in touch with her and that other fellow aboard. I asked her a lot of general questions, ostensibly for answers I needed in acting as your counsel, and slipped the information you wanted given her in between the lines, so to speak."

"Good," said Jim.

However, after that, and during the half-hour ride into Government Center in the closed car, Jim withdrew into himself and ignored the questions Wylcoxin put him. To the point where the other man finally got exasperated, and forced himself on Jim's attention by jogging Jim's elbow.

"Look. Give me some answers, will you?" demanded Wylcoxin. "In half an hour I'm going to have to be up there, theoretically aiding and representing you as your counsel. You *owe* me some answers! Don't forget I got through to Ro for you; and that wasn't easy. There was absolutely no line of communication open to her except that field telephone from the spaceport outside into your ship."

Jim looked at him.

"Government Center is less than ten miles from Government Center spaceport," he said. "Isn't that right?"

"Why . . . yes," said Wylcoxin, wondering.

"If I'd been held in a building in Government Center, I wouldn't have needed you to get in touch with Ro," said Jim. "At this distance, I could've talked directly to the ship myself."

Wylcoxin looked at him with a mixture of disbelief and puzzlement.

"I'm only pointing out," said Jim quietly, "that there's no point in my wasting valuable thinking time giving you answers you're not going to be able to understand, even if you could believe them. As far as the Committee Members, Max Holland, and the other witnesses are concerned—it doesn't matter what they say, or what they ask me. All I ask of you, now that you've got word to Ro, is to sit by my side and do whatever seems necessary as things come up."

Jim went back to his thoughts. This time Wylcoxin left him alone with them.

They reached Government Center and the building where the Inquiry was to take place. Jim was kept in a small side room, until just before the Committee Members were due to appear. Then he and Wylcoxin were taken to their seats in an already filled Committee Room.

Jim and Wylcoxin were installed at one of the several tables directly in front of the raised platform with its long table at which the six Committee Members would sit. As he came in he saw, seated separately in the crowd a few rows back from the front-row tables, Max Holland, Styrk Jacobsen—the executive heads of the program that had trained him to go to the Throne World—and Ro. Also a handful of other, minor figures out of his past from the time when he had been selected to be trained and sent.

Ro caught his eye, looking a little pale and anxious, as he came in. She was dressed in a plain white

clothlike tunic and skirt, not too remarkably different from the lightweight, summer-colored clothes of the Earth women seated in the same room. But some general effect of her total appearance made her stand out in the crowd as if spotlighted. Jim's eyes had adjusted to the height and cleanliness of feature of the High-born on the Throne World. Now, in spite of himself, the people of his own world, thronging this courtroom, seemed shrunken and small and drab by comparison. Ro, ignoring all the rest, was looking at him anxiously. Jim smiled to reassure her, as he took his seat, necessarily turning his back on her and the rest of those in seats behind him. The six Committee Members came in, representatives of their various area sectors on Earth. The audience rose on order, to wait for the Members to take their seats; and at the same time a buzz of excitement ran through them, as there came in with the other Members a small reddish brown man, who took his seat to the right of Alvin Heinman, Representative from the powerful, Central European Sector. Jim looked at the small man and smiled, faintly. But the other only looked back with extreme solemnity. The Members seated themselves and the audience was told they could regain their seats as the Committee went on to open proceedings.

". . . And let the records show," said Heinman, a little nasally into the recording senors built in the table before him, "that the Governor of Alpha Centauri III has consented to sit with this board unofficially; in order to give it the benefit of his experience and knowledge in the matter under Inquiry."

Heinman rapped on the table with the gavel, and called for the Government's Investigating Officer to describe the matter under Inquiry.

The Investigating Officer did so. The word "treason" was carefully avoided; but the Investigating Officer talked a clever circle around it until there was no doubt left in the minds of those listening to him that this Inquiry had been brought to determine—not whether the Government should commence treason proceedings against Jim, but whether there was the slightest doubt that the Government should not do so. The Investigating Officer sat down again, and Styrk Jacobsen was brought up to answer the questions of the Committee.

These questions had to do mainly with Jim's background and the procedure which had chosen him, from several hundred candidates carefully preselected on a worldwide basis, to be the man trained to go to the Throne World.

"James Keil," Jacobsen said, "was unusually qualified in many respects. His physical condition was superb. As it needed to be, since we planned to train the man

we would send, as a bullfighter. Also, at the time Jim came to our attention, he not only had degrees in history and chemistry, as well as anthropology, but he had established himself as a respectable authority in the field of social and cultural studies."

"Would you say," broke in Heinman, "in character he was markedly different from the other candidates?"

"He was a strong individualist. But then they all were," said Jacobsen, dryly. He was a spare, erect man with silver hair, in his mid-sixties, originally from Odense, Denmark. Jim remembered that Jacobsen from the first had taken what seemed to be an instinctive liking to him, as opposed to Max Holland's immediate instinctive dislike.

". . . That was one of the requirements for the job," Jacobsen was saying. He went on to list, in order, those requirements as they had originally been laid out. Roughly, they covered unusual physical and mental capacity, emotional stability, and a broad educational background.

"But about this matter of emotional stability," Heinman pounced again. "Didn't you find him unusually . . . say . . . unsocial? To the point of being noncommunicative and withdrawn from the people around him. What I mean is, wasn't he from the start pretty much of a loner?"

"Yes. Again," said Jacobsen, "we wanted someone with exactly those traits. Our man would be plunged into an unfamiliar culture —much more unfamiliar than anything he could encounter here on Earth. We wanted him to be as self-sufficient as possible."

Jacobsen had not backed up a step. Though Heinman picked up the questioning for some little time, the silver-haired man refused to give ground. His testimony amounted to the fact that Jim was no more and no less than the man the project had been set up to find, train, and send out.

With Max Holland, who followed Jacobsen before the Committee, the response was entirely different.

". . . The other members of the team engaged in the Project," Holland said, leaning forward over the table, a cigarette burning between his fingers, "weren't equipped to consider the risk involved in it— the risk to the Earth as a whole, I mean. In resources and population, our world, to the Empire, is like a baby chick to an elephant. The chick's so small that it's likely to be safe through being ignored, unless by accident or mistake it gets under one of the elephant's feet. Then there's no hope for it. It seemed to me the whole project ran a serious danger of bringing us under one of the elephant feet of the Empire, either accidentally or by error on the part of the man

we were sending in to look at their Throne World. And my uneasiness was increased by the character and attitudes of James Keil, himself . . ."

Holland, like Jacobsen, was closely questioned by Heinman and a couple of the other Committee Members. Unlike Jacobsen, Holland was ready and willing to paint a dangerous picture of Jim. Jim, he testified, had struck him as being socially withdrawn to the point of near paranoia, self-confident and arrogant to the point of near-megalomania. Then, coldly, he reported the conversation he had had with Jim underneath the stands of the arena of Alpha Centauri III, in which Jim had told him that from then on he would have to make his own decisions.

"Then, in your opinion," said Heinman, "this man, even before he reached the Throne World, was already determined to ignore the directives given him, and do whatever he chose, regardless of the consequences to the rest of the people of Earth?"

"I do," said Holland, as fervently as any bridegroom. That ended his appearance before the Committee.

Ro was called up next. But her appearance consisted only of sitting and listening to a recording that had been made of her own account of what had happened to Jim from the time she had first met him aboard the Princess Afuan's spaceship, to the time in which she had brought him back to the spaceport outside Government Center, Earth.

As the recording ended, Heinman cleared his throat and leaned forward as if to speak to her. But the Governor of Alpha Centauri III, beside him, hastily leaned over in his turn and whispered in the Committee chairman's ear. Heinman listened, and then sank back in his seat. Ro was released from her interview with the Committee without any further questions.

Beside Jim, through all this, Wylcoxin had been fidgeting in his chair. Now he leaned over and spoke urgently, low-voiced to Jim.

"Look!" he said, "at least let me take advantage of your right to cross-question her. That Alpha Centauran Governor made a mistake when he stopped Heinman from asking her questions. It may have been a kindness to her; but it wasn't any help to you. She *wants* to testify in your favor. If we get her up there, I'm sure we can make a good impression with her!"

Jim shook his head. In any case, there was no more time to argue because now he was being called upon to answer the questions of the Committee, himself. Heinman began, mildly enough, by reviewing Jim's qualifications for being sent as an observer to the Throne World. But he drifted from these almost imperceptibly into sensitive territory.

"Did you at any time have doubts about the wisdom of this Project?" he asked Jim.

"No," said Jim.

"But at some time between your selection as the man to go and when you arrived at the Throne World, you seemed to have developed such doubts." Heinman plowed among the notes before him on the table and finally located what it was he sought. "Mr. Holland reports you as saying on Alpha Centauri III—and I quote: '. . . Max, it's too late for you to interfere, now. I've been invited. From now on I make my own decisions.' Is that correct?"

"No," said Jim.

"No?" Heinman frowned at him over the notes he held in his hand.

"The wording isn't correct," said Jim. "What I actually said was: 'I'm sorry, Max. But it was bound to come to this sooner or later. From here on out the Project can't guide me any longer. From now on I have to follow my own judgment.' "

Heinman's frown deepened.

"I don't see any essential difference," he said.

"Neither did Max Holland, evidently," said Jim. "But I did—or else I wouldn't have phrased it that way."

Jim felt his left sleeve below the tabletop being plucked, frantically.

"Easy!" hissed the whispering voice of Wylcoxin in his ear. "For God's sake, take it easy!"

"You didn't?" said Heinman, with a faint note of triumph in his voice. He sat back and looked right and left along the table at the other Members of the Committee. "And do you deny taking a knife and a revolver in your luggage to the Throne World, over Mr. Holland's objections?"

"No," said Jim.

Heinman coughed dryly, took out a white handkerchief and patted his lips, then tucked the handkerchief away again and sat back in his chair.

"Well," he said, "that seems to cover that."

He reached for a fresh sheet of paper and wrote something on it in pencil.

"Now," he began leaning forward over the table once more, "you've heard the account of your actions from the time you left Alpha Centauri III until you returned to Earth that's been given us by Miss . . . the High-born Ro. Have you any exception to take with that account?"

"No," said Jim.

Once more he was aware of Wylcoxin's fingers plucking at his sleeve. But he paid no attention.

"No exception," said Heinman, leaning back once more. "Then I take it you've no explanation at all for these extraordinary actions of yours, completely at odds with your original purpose in being sent to the Throne World?"

"I didn't say that," said Jim. "The account you got is correct. The interpretation of it you've made, is wrong. Just as wrong as your assumption that my intentions, or actions, were at variance with the reason for which I was originally sent to the Throne World from Earth."

"Then you'd better explain those intentions, don't you think, Mr. Keil?" said Heinman.

"I intend to," said Jim.

The response brought a little color to Heinman's somewhat gray cheeks. But the chairman of the Committee evidently decided in favor of letting the implied challenge pass. He waved to Jim to continue.

"The explanation is simple enough," said Jim. "The High-born of the Empire's Throne World—I'm sure the Governor of Alpha Centauri III will agree with me—are quite literally superior beings, not only to what they call the lesser races on their own Colony Worlds, men like the Governor himself"—Jim glanced at the Governor, but the small man avoided his eye—"but to our kind of human on Earth, as well. Accordingly, no preplanning of my actions, no matter how thoroughly or capably done here on Earth, could guide me in an unfamiliar culture of a race whose least member was more capable than our best, here on Earth. So I had to face the fact early in my training that I would have to react to situations as I found them on the Throne World, following my own best judgment, and paying no attention to how I knew people back on Earth would have decided."

"You didn't tell your superiors during the training period about this decision, I take it," asked Heinman, stilll leaning back in his chair.

"No," answered Jim. "If I'd told them early enough in my training to be replaced, undoubtedly I'd have been replaced."

Jim heard a little explosion of breath to his left, a gusty exhalation of despair from Wylcoxin.

"Of course, of course," said Heinman, pleasantly. "Go on, Mr. Keil."

"Accordingly," said Jim, evenly, "when I got to the Throne World, I discovered that the best interests of Earth would be served there by involving myself in the situation about the Emperor, rather than just staying an observer. The Emperor was mad; and his cousin Galyan had been conspiring for a long time to gain control over the Emperor, by eliminating the man who really ran the Empire, Vhotan—the Emperor's uncle and Galyan's also. Galyan's plan called for him to eliminate Vhotan and the Starkiens, who were unswervingly loyal to the Emperor. Then Galyan would assume Vhotan's place, take over control of the Throne World and the Empire; and develop a new corps of Starkiens, loyal not to the

Emperor but to himself. The Starkiens were literally a special breed of men, created originally by gene control and controlled breeding over several generations. But Galyan knew he could produce a new breed within two or three generations, given the means and the raw material. And the raw material was to come from us—from Earth."

He stopped; and looked at the Committee Members behind their long table.

XIII

It was a second or two after Jim had stopped talking before his last few quiet words exploded with their proper implication upon the minds of his Earth-born audience. Then the effect was, in a small way, dramatic. Heinman sat straight up. The other Members of the Committee, all up and down the table, reacted with an equal and sudden alertness.

"What was that, Mr. Keil?" demanded Heinman. "You're accusing this Prince Galyan—he was one of the ones killed, wasn't he—of wanting to alter us genetically to some sort of single-minded bodyguards for his own purposes?"

"I'm not accusing him," said Jim, evenly. "I'm stating a fact—the acknowledged fact of Galyan's intentions. The fact he acknowledged to me. He planned to do exactly what I say. I don't think you understand"—for the first time a little touch of irony swept into Jim's voice—"his doing that, by itself, wouldn't have seemed so terrible to the rest of the High-born on the Throne World. After all, the lesser breeds of human on their Colony Worlds were available material for the High-borns' using. And we weren't even that important. We were Wolflings—wild men and women living out beyond the fringe of the civilized Empire."

Heinman leaned back and turned to whisper to the Governor of Alpha Centauri beside him. Jim sat without speaking until the whispered conversation came to an end. Heinman turned back to Jim and leaned forward. His face was slightly flushed.

"A little while earlier," Heinman said, "you told us that the High-born on the Throne World were superior beings. How can you reconcile the fact they were superior beings with such inhuman plans on the part of this Prince Galyan? Let alone the fact that, according to you, he planned to murder his uncle and dominate his Emperor? If the High-born are what you say they are—and the Governor of Alpha Centauri III, here, agrees with you, at least in that—the Prince Galyan would've been far too civilized to entertain such savage and murderous intentions."

Jim laughed.

"I still don't think you, or the other Members of this Committee,

understand the cultural situation between the High-born, and the humans on the Colony Worlds—or us," he said. "Galyan's plan against the Emperor was an ultimate in crimes, from the viewpoint of any decent High-born like Slothiel. But his plans about us weren't inhuman at all, as any High-born would see it. In fact, most High-borns would consider us lucky to have the benefit of Galyan's attention. In making us into Starkiens, they'd have pointed out, he'd have rid us of disease and made us a much more healthy, happy and uniform race. Just as the Emperor's Starkiens are disease free, happy and uniform."

Once more, Heinman held a whispered consultation with the Governor. This time when it broke off, however, both men looked annoyed and a little dissatisfied.

"Are you trying to tell us, Mr. Keil," said Heinman—and it was more of an honest, open demand for information than any of the questions the Committee chairman had asked Jim earlier—"that all the actions you took on the Throne World were justified, not merely for the good of the Emperor, there, but for the good of the people of Earth, back here?"

"Yes," said Jim.

"I'd like to believe you," said Heinman and at the moment it sounded as if he actually would have liked to believe Jim. "But you're asking us to take a great deal on faith. Not the least of which is how you could come to know the plans of this Prince Galyan, when they necessarily must have been kept extremely secret."

"They were kept secret," said Jim. "Certain of the Governors and Nobles on the Colony Worlds"—his eyes lingered for a second on the Alpha Centauran Governor—"had to know about his plan to get rid of the Starkiens. The Princess Afuan, and Melness, the Master Servant in the Throne World palace, had to know other parts. But as much as possible, Galyan told nobody but himself."

"Then how could you find out?" demanded another Member of the Committee—a short-bodied, fat man in high middle age whom Jim did not recognize.

"I'm an anthropologist," said Jim, dryly. "My main field of interest is human culture, in all its types and variations. And there's a certain limit to the variations that can take place in human culture, given concentrated population; no matter how advanced the culture may be. The social arrangement of the High-born on the Throne World, and the social arrangements of the Nobles on the Colony Worlds, which mirrored the Throne World arrangement, were at odds with the cultural level which the High-born themselves believed they had achieved. The High-born—and the colonial nobles in imitation—were split into small artificial cliques or

groups which operated essentially like *noyaux*."

Jim paused and waited for them to ask him what *noyaux* were Heinman did.

"The French ethologist Jean-Jacques Petter coined the term *noyau* as a label for a society of inward antagonism," Jim answered. "Robert Ardrey, writing some years later, identified it as a 'neighborhood of territorial proprietors bound together by a dear-enemy relationship'. The Callicebus monkey is an example of the *noyau* in nature. Each Callicebus family spends its time, apart from eating and sleeping, in going to the borders of that territory which they have marked out for their own among the general treetops, and engaging in screaming and threatening with the adjoining family of Callicebus, who have also come to their boundary so that the display of antagonism can take place. This, except for the fact that physical territory was replaced by 'position' and screaming and threats were replaced by intrigue to make the next person or group lose status among his fellows, exemplifies the *noyau*-like situation existing among the High-born on the Throne World. The only ones exempt from it were those like the High-born Ro, because she was an avatism—a throwback at a time when the High-born specialized physical and mental type was not yet fully developed—and, therefore, the others considered her not able to compete. Although, she was."

Jim paused again. For a moment no one on the Committee said anything. Then Heinman spoke again.

"A little earlier," he said, "you were likening these High-born to superior beings, compared to us here on Earth. Now you're comparing them to a society of monkeys. They can't be both."

"Oh yes, they can," said Jim. "Ardrey also made the statement that 'nations produce heroes, *noyaux* geniuses.' In the case of the Throne World, which set the pattern for the colonial Governors and Nobles, the process was reversed. Geniuses made *noyaux*. The Callicebus monkey lives in what is essentially a utopia. Food and drink are right at hand for him on the trees. Just so, the High-born on the Throne World also lived in a utopia where their technology took care of every possible physical need or want they could have. Normally, under utopian conditions, they should have grown soft and become easy prey to the members of the human race on the Colony Worlds who did not have it quite so soft. That's the historical turnover of society, in which an aristocracy weakens and becomes supplanted by those from below."

"Why didn't it happen with the High-born?" asked Heinman.

"Because they succeeded in achieving something unique—a

practical, self-perpetuating aristocracy," said Jim. "The Empire began by pooling all its best minds on the planet that was later to become the Throne World. When it became the Throne World, it still drew to it anyone of unusual talent who appeared on any of the other worlds. This gave it a small trickle, a small but continuous supply, of new blood. In addition to this, the aristocracy that developed on the Throne World and became the High-born, did something earlier aristocracies never were able to do. It required each member of the aristocracy to know everything there was to know about the technology that made the Empire work. In other words the High-born were not merely pan-geniuses, they were pan-authorities. The High-born Ro, behind me now, given time, materials and labor, could turn the Earth into a complete small duplicate of the Empire in every technological respect."

Heinman frowned.

"I don't see the connection between this, and they're being *noyaux*", the chairman said.

"An indefinitely self-perpetuating aristocracy," said Jim, "runs counter to the instinctive process of human evolution. In effect, it creates an artificial situation in which social, and, therefore, individual, evolution can't take place. Such an aristocracy, while it can't be destroyed from the outside, therefore has to end up destroying itself. In short—the High-born after certain lengths of time had no alternative than to begin to become decadent. And they are decadent."

The Governor leaned over urgently to whisper in Heinman's ear. But Heinman shrugged him off, almost angrily.

"As soon as I realized they were decadent," said Jim, keeping his eye not only on Heinman, but on the Governor, "I realized that the seeds of the destruction of their Empire were already sown. The *noyaux* into which their social patterns had degenerated was evidence of that decadence. In other words, within a few centuries at most, the Empire would start to break up; and no one there would have any time to bother with us back here on Earth. Unfortunately, at the same time, I discovered Galyan's plan to seize power for himself. Not all the High-born were ideally satisfied by the outlet the *noyaux* gave their emotions and hungers. A few individuals like Galyan, and Slothiel, and Vhotan wanted and needed the real thing in the matter of conflict and victory, rather than the shadow of its substance, which the bickering between the *noyaux* and the Game of Points offered them. Also, Galyan was dangerous. Like the Emperor, he was mad—but he was *effectively* mad; the kind of man who could put his madness to practical use, in contrast to his cousin. And Galyan had plans for Earth. He would have sucked us

into the decadence of the Empire, before the Empire had time to collapse of its own weight."

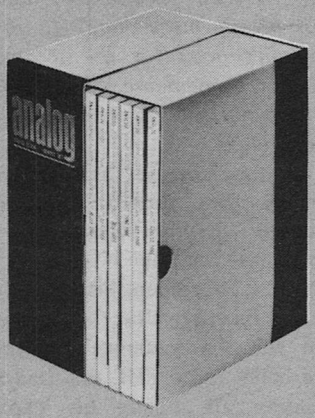
Jim paused. He felt a sudden longing to look around at Ro, to see how she was taking this revelation. But he dared not turn.

"So," he said, "I set out to stop and destroy Galyan—and I did."

He stopped speaking. The Committee Members at the table, the Governor—even the people sitting silent in the room behind him, continued to stay noiseless and unmoving for several seconds as if they expected him to continue talking. Finally a slow stir along the line of the Committee Members, signaled their recognition of the fact that he was through.

"And so that's your explanation," said Heinman, slowly leaning forward and peering directly at Jim. "You did what you did to save Earth from a decadent madman. But, how do you know you were right?"

"I'll tell you," said Jim. He smiled a little grimly. "Because I found enough evidence in the records on the Throne World to satisfy me that Earth was, in fact, originally colonized by the Empire —by a party including several High-born, as they were just then beginning to be called. And—" he hesitated, then said the words very slowly but clearly. *"I myself am a throwback to those High-born Colonists just as Ro is a throwback. I am a High-born. Otherwise I*



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couldn't have done what I did, in competition with Galyan and the other High-born. I was a throwback to an earlier, healthier, version of their aristocracy, and I'd look it even more than I do now, if it hadn't been for the treatments that were given me here on Earth to stop my growth when I was ten years old!"

In the silence following this remark, Jim turned and looked squarely at the Governor. The Governor sat as if frozen, his mouth a little open, his brown eyes staring fixedly at Jim. In one sweep, Jim felt the audience's sympathy and belief in himself, that had been building all during his explanation—even among the Committee Members, even in Heinman himself—swept away by a cooling reaction of incredulity and distrust.

"High-born? You?" said Heinman in a low voice, staring at him.

It was almost as if the chairman questioned himself. For a long moment he continued to stare at Jim; then he shook himself back into self-control. Clearly, he remembered who he was and where he was.

"That's hard to believe," he said; and his voice had the same note of faint, underlying sarcasm that had been in it at the beginning of his questioning of Jim. "What kind of proof have you got, to back up a claim like that?"

Jim nodded quietly at the Governor of Alpha Centauri III.

"The Governor knows the High-born," said Jim, his eyes fixed on the small man. "Not only that, but he saw me on the Throne World in the midst of the native High-born there. He should be able to tell you whether I am one, or not—if you'll accept his evidence."

"Oh," said Heinman, not only leaning back, but tilting back a little in his chair. "I think we can accept the Governor's opinion." He turned to the small figure beside him and asked, loudly enough for the room to hear, "Mr. Keil claims to be one of the High-born. What do you think, Governor?"

The Governor's eyes stared fixedly at Jim. He opened his mouth, hesitated, and spoke, thickly accenting the Earthborn words.

"No, no," he said. "He is not a High-born. He could never be a High-born. No . . . *No!"*

A sort of low gasp, a groan of reaction, trembled through the audience behind Jim. Jim rose slowly to his feet and folded his arms.

"Sit down, Mr. Keil!" snapped Heinman. But Jim ignored him.

"Adok!" he said, addressing the empty air.

Suddenly, Adok was with them, standing in front of Jim's table, in the little clear space between it and the raised platform on which stood the table of the Committee Members. He stood silent, his powerful body darkly gleaming a little under the lights, white power-bands stark on his arms, body and legs.

There was a new, shuddering gasp from the rest of the room. Then silence.

Jim turned and pointed at one long wall of the room.

"Adok," he said, "that's an outside wall. I want you to open it up. I don't want any falling debris, or undue heat. I just want it opened."

Adok turned a little toward the wall Jim indicated. The Starkien did not seem to move, otherwise, but there was a wink of light that seemed brilliant enough to blind them all, if it had not been for the extremely short duration of its existence; and something like an unbearable sound, equally cut short.

Where the wall had been there was an irregular opening ten feet in height, fifty feet in length, and with edges smoothly rounded as if the stone of the wall had been melted.

Through the opening they could see, over the rooftops of a few adjoining buildings, blue sky in which half a dozen cloud masses floated. Jim pointed at the sky.

"Those clouds, Adok," he said, softly, "take them away."

There were five or six short, whistling noises—again like mighty sounds cut so short that the human ear did not suffer from hearing them.

The sky was clear.

Jim turned back to face the table on the raised platform. Slowly he he raised his arm and pointed at the Governor of Alpha Centauri III.

"Adok—" he began. The squat brown figure came hurdling over the table before him, down off the platform and across the table to Jim himself, reaching out his hands supplicatingly.

"No, no, High-born!" cried the Governor in the language of the Empire. Then, desperately, he switched to English.

"No!" he shouted, twisting his head sideways to look back over his shoulder at the Members of the Committee. His voice in its thickly accented speech rang wildly against

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PLACE	TITLE	AUTHOR	POINTS
1.	The Custodians	*James H. Schmitz*	2.15
2.	Pipeline	*Joe Poyer*	2.51
3.	The Form Master	*Jack Wodhams*	2.96
4.	The Reluctant Ambassadors	*Stanley Schmidt*	3.28
5.	A Learning Experience	*Theodore Litwell*	4.03

The Editor.

the silence of the room. "I was wrong! Wrong! He *is* High-born. I tell you he is!"

The Governor's voice rose frantically; for Heinman and the other Committee Members were staring at him with expressions of mixed horror and disbelief. He twisted around on the table top to confront them.

"No, no!" he cried, thickly. "I don't say that because he pointed at me. No! It's because of the Starkien! You don't understand! The Starkiens obey nobody but the Emperor, and those other High-born the Emperor tells the Starkiens to obey. The Starkien couldn't obey like that, for anybody but a High-born! It's true! He *is* High-born; and I was wrong! I was wrong! You have to treat him like a High-born! Because he *is!*"

The Governor collapsed into a fit of hysterical weeping, huddled up on the tabletop. Jim felt a hand slide into his own. And looking down saw that Ro had come from her seat to stand at his side.

"Yes, indeed," Ro said slowly, in careful but unpracticed English, to Heinman. "I am a High-born and I tell you that Jim is one, too. The Emperor adopted him as one; but even the Emperor said that he was giving Jim nothing Jim did not already have. Jim risked his life for all of you; and he brought me and Adok back to make you a people who will someday inherit the Empire."

She pointed at the Governor.

"This man," she said, "must have been one of the Colonials in Galyan's plot. He sent a stone from Earth in Jim's name. Only it was not a stone, but a device to project a blue, distorting light over Vhotan; and when it did this, the poor Emperor thought he saw the Blue Beast of his nightmares, and was so afraid he ordered Vhotan killed; just as Galyan had planned. Wasn't it this man who suggested you should try Jim for treason?"

"I lied. I told them the Princess Afuan would shortly remove the High-born Slothiel and then she would seek payment from Earth for what Jim had done," moaned the Governor, swaying on the table with his face hid in his hands. "But I was wrong—*wrong!* He *is* High-born. Not just by Adoption, but by birth. I was wrong, wrong . . ."

On Heinman's face there was a war of expressions; but gradually dominating them all came the look of a man who had just emerged from many miles of dark tunnels to find a daylight so much brighter than he had expected that it was almost too painful to bear.

Jim looked at him, then nodded down at the weeping Governor before returning his eyes grimly to Heinman once more.

"Yes," Jim said. "So now you understand. And you can also understand why the Empire was something to be kept from Earth, at any cost." ■

the reference library

P. Schuyler Miller

THAT OLD-TIME S F

I feel sure there are venerable individuals—other venerable individuals—among Analog's constant readers who remember the glorious day when Volume 1, Number 1 of *Astounding Stories* appeared on the newsstands. There may even be some—diligent readers of *Science and Invention*—who were waiting for the first issue of *Amazing Stories* back in the spring of 1926. A smaller number of you recall the first issue of *Weird Tales* in 1923—that one I wasn't allowed to read until I reached college age.

Before that—long before that—were the Munsey magazines: *Argosy, All-Story* and the combined *Argosy All-Story* of my own salad days. (I couldn't buy 'em, but I could borrow them from a boy down the block who had a generous uncle.) And before that?

I had no idea how much science fiction was published before that until I read Sam Moskowitz's new anthology, "Science Fiction by Gaslight."

The new book is one of his series of companion volumes—appreciations of writers with accompanying anthologies of their work—for World Publishing Company (364 pages; $6.95). He calls them "Men and Milestones of Science Fiction," and this book combines the two. It opens with a long essay on the popular magazines of the late nineteenth and early twentieth century, in which primitive science fiction appeared more regularly than most of us supposed. The twenty-six stories are introduced by condensed accounts of the authors. With a very few exceptions the names will be strange, but the themes and the way in which they are developed will take you right back to those early years of *Amazing* when Hugo Gernsback was reprinting these and other stories while he was egging new writers on to imitate them. The stories are grouped by theme, and most of them are still viable sub-genres within the science fiction field: catastrophes, marvelous inventions (including a "lost" short story by Jules Verne, "An Express of the Future"), monsters, future warfare, man-eating plants, burlesque humor, scientific crime and detection, medical miracles, and "adventures in psychology."

These themes were already stereotypes in the popular fiction of 1891 to 1911, which the book covers. Their style is Late Victorian pseudo-literary, even though they were published in the low-brow magazines of the time. But a story like "The Tilting Island" by the otherwise unknown Thomas J. Vivian and Grena J. Bennett—in which Manhattan breaks in two—was decades ahead of itself in its natural style. It suggests that critics should emulate Sam in searching through these neglected magazines for the roots of the "good" writing that became acceptable to the establishment a little later. I wonder what Ernest Hemingway read when he was in knee-pants?

The book is for collectors and students—that must be admitted. The background information makes it a valuable reference. It may be that nobody has seen so many of these "gaslight era" magazines as Sam. English and American, he has 'em all.

Also for antiquarians, it must be admitted, are the books from the Fitzroy edition of Jules Verne that Ace is reprinting in paperback. This is an English series, edited and abridged and occasionally translated by I.O. Evans. The hardback editions are published by a Connecticut company, Associated Booksellers, that doesn't send out review copies. Gnome Press used to send them to me while it was still active, and now Ace is bringing out the less known titles in paperback. You'll find that this shows a side of Verne that you never imagined if, like me, you've read only the books "available in every library" as the scholars say, naïvely and untruthfully.

Did you know that Verne wrote a yarn about a haunted castle in the heart of Dracula's Transylvania? That's "Carpathian Castle" (Ace No. H-60; 190 pp.; 60¢). As you might expect, it is scientifically haunted by a mad scientist, but in his characteristic manner Verne drops the names of an assortment of Central European haunts and bogles that even the scholarly Mr. Evans, with the resources of British libraries behind him, hasn't been able to identify.

Did you know that Verne rose to the challenge of Darwinian evolution with a story about a race of ape men living in a treetop village in darkest Africa? Here, long before Tarzan, was a story about a scientist learning the language of the great apes—and Burroughs couldn't have been "inspired" by the book, because this is its first translation into English. It is Ace No. H-67, "The Village in the Treetops." Same length; same price.

You may have heard of the yarn—Evans says it is the only one of Verne's posthumously published books to be published in English—which is here called "The Hunt for the Meteor" (Ace No. H-78; 189

pp.; 60¢). The Verne who objected bitterly to Wells' "unscientific" favorite here gives us a mad scientist with something mighty like one of Doc Smith's pressor rays. I get the feeling that he may have written the book with the idea of converting it into a play for the Late Victorian stage, for it has in it all the stereotypes of the turn-of-the-century popular stage: the aforesaid mad scientist, absent-minded but omnipotent; a pair of fanatic amateur astronomers, Americans, who fan rivalry over discovery of the meteor into a feud that threatens a Romeo-and-Juliet romance; another mysterious couple, anticipators of the "jet set," who drift in and out of the story, in and out of marriage, in and out of the plot; and, of course, the meteor. This is gold, our super-scientist—name of Zephyrin Xirdal—drags it down out of orbit with his ray, and there is a mad rush to Greenland to find and claim it.

The fourth of the recent Ace "Fitzroy" reprints is an assortment of Verne's short stories, collected as "Yesterday and Tomorrow" (No. H-52; 189 pp.; 60¢). Only a few could be considered science fiction. "The Eternal Adam," Evans tells us, is thought to be Verne's last story. It deals with the inundation of the continents and repeopling of the world. "An Ideal City" is a delight, and must be more so for people who know the city of Amiens: in an alleged address to the people of the city, Verne offers a tongue-in-cheek vision of a far future in which some long-proposed civic improvements have been made—and others still haven't. "Gil Braltar," which you may have seen in *F&SF,* is a yarn about the madman, who attempts to take Gibraltar from the British, at the head of an army of Barbary apes. Finally "In the Twenty-ninth Century" is Verne's projection of a day in the life of an American publishing tycoon of 2889. If you are interested in Verne for more than his science fiction, the other stories will round out your picture of him.

THE LOST ONES

By Tan Cameron. William Morrow & Co., New York • 1968 • 220 pp. • $4.50

LOST THRESHOLD

By Thomas Gerald Wheeler • S. G. Phillips, New York • 1968 • 189 pp. • $4.95

The "lost race" segment of science fiction pretty well had the pins knocked out from under it in World War II, when readers personally poked into or flew over all those unexplored patches on the map. The English, however, have never abandoned the belief that there are strange things to be found on the other side of the hill. Both these lost-race books have been successful abroad.

"The Lost Ones" is the more conventional of the two. John Buchan would have made a better

story of it, but he wouldn't have changed the formula. The lost ones of the title are the vanished Greenland colony, who disappeared from history only a century or so before acknowledged and unacknowledged explorers began to poke around the coasts of North America. It seems that they found a refuge on Prince Patrick Island in the Canadian arctic—an island that you can find, big as life, on any not-very-good atlas—and there they are today, or were ten years ago when a party of explorers set out to find them and the ambergris-littered "Graveyard of the Whales" that they guard. From there on it's straight adventure with strictly natural hazards and wonders providing the opposition.

"Lost Threshold" is something else again. It's peddled as a juvenile, but it's right off the same shelf as Buchan and Haggard—except that its author has either reinvented or knows some of the gimmicks of science fiction. (I apologize: Dr. Wheeler is an M.D. who was born into the British Army, and in India, but has settled down to enjoy life in California.) Its hero is a young Scottish medical student who finds a loose stone in the floor of the abandoned farmhouse from which his father has disappeared, and deep in the bowels of the moor what we all recognize immediately as a "gate" into another continuum.

Less sophisticated than we, young James MacGregor plunges through into a strange world where a little colony of mixed strays from Earth—there evidently are other gates—mines and peddles gold to a barely seen race of dominant humans or humanoids, the Graen. Aided by a monastic group of scholars, Jamie spurs the people of Gold Harbor into revolt, learns the secret of the intelligent Pulling Birds, trounces the Graen. It's an oddly old-fashioned, thoroughly flavorful yarn, and I hope Dr. Wheeler writes more.

A TORRENT OF FACES

By James Blish and Norman L. Knight • Doubleday & Co., Garden City, N.Y. • 1967 • 270 pp. • $4.95

Parts of this book appeared here last year as "To Love Another"—the love story of the human woman and the mutated, reconstructed amphibian Triton. Other parts were in *Galaxy,* and the seeds of the book were in two stories by Knight, hero in Astounding in 1937 and 1940. The title refers to the overpopulated world of 2794, when a million million people have to be maintained on Earth by some kind of viable society. The protagonists are the only kind of people who can exist as individuals in such a hive-world . . . the executives who run it.

This is a planet where every detail of every life must fit into the total plan, yet a few degrees of freedom must somehow be main-

tained. It is a planet where Mankind has gone back to the sea and is groping for Space, but has reconciled himself to making do with what he has. It is a planet where a world forest crawls over the face of the earth, generating the oxygen without which the trillion of air-gulpers would suffocate.

But these are the details: the theme is the inertia of gigantism—the diplodocus who remained alive because he didn't know he was dead. When the floating resort hotel of the Australian Barrier Reef goes adrift and is wrecked, we slowly realize that it is simply too big to be evacuated in time. And so, though plans have been made to evacuate endangered people into refuge cities, they, too, are simply too big for the plan to work when an asteroid swings into a collision course with Earth.

And as our own population grows, our cities sprawl and decay, we begin to accept the "naturalness" of a permanently jobless predator class, the question presents itself—have we already reached the point of no return? Is our inertia, our momentum, already too great for a solution to be possible?

On the negative side, I am afraid the authors have become too wrapped up in their equilibrated dystopia to give their story much life. The problems are there, and they are clearly seen and logically handled, but they lack the urgency to make them real. I don't think it is intentional in this case . . . but is this, too, a mirror of ourselves? Have we let the urgency go out of life, so that poverty, war, starvation, predation have become academic to the people who can and must cope with them? Has mankind dissolved into a torrent of featureless faces, none of which are our own?

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THE MAN WHO WANTED STARS

By Dean McLaughlin • Lancer Books, New York • No. 74-949 • 222 pp. • 75¢

The cover calls this novel "taboo-shattering." I can't imagine why. What it is, is the portrait of an utterly ruthless monomaniac

who is resolved to get Mankind off Earth and into Space, and lets nothing stand in his way.

Joe Webber epitomizes the philosophy, popular again these days, that the end justifies any means used to attain it. He is wholeheartedly convinced that Man must colonize the Moon and other planets and go on to the stars, and he will use anyone and anything to bring it about. Congress has dismantled an orbital station, leaving the crew of the exploring ship *Jove* no way to get down to the surface when they return from Jupiter. (This part of the book was a short story here in 1956.) When the ship crashes in an attempted landing, Webber uses the one crippled survivor to get his scheme for a fusion rocket under weigh. When a biochemist discovers the secret of regeneration and immortality, he turns that to use, too.

Webber is the antihero with a vengeance—yet the reader has to understand what drives him, and almost sympathize with his goal. And it may very well be that without a Joe Webber somewhere, we never will get to the Moon or planets, for the very reasons against which he struggles. Fanatics are like this.

RESTOREE

By Anne McCaffrey. Ballantine Books, New York • No. U-6108 • 252 pp. • 75¢

Analog readers know Anne McCaffrey for her "Weyr" stories—soon to be combined in a full-length book. This novel doesn't have the fascination of her stories of the dragon world, but it shows a similarly ingrown, pseudofeudal society.

The heroine is a plain, self-pitying old maid snatched out of New York's Central Park by fish-smelling critters in a flying saucer. She comes to herself, and the story properly begins, in a new body, in some kind of psychiatric ward where she is a kind of zombie nurse or attendant. She finds that she and her patient are being drugged, withholds the dope, and sets off a revolution-from-within. From here on the plot follows predictable channels in not always predictable ways. The seedy society of the distant planet is made entirely real and the characters have individuality even though they may not stand out as individuals.

It's a house rule of "serious" literature that the protagonist of a novel must undergo a progressive change of character in the course of the book. The kind of resistance to change that may have deflected a presidential election by the time you read this is not recognized as permissible or posssible. Sara the restoree does change by reacting to a society where her old ways would simply have no place. But it happens in the course of a good story—so the book simply can't be good. Too bad.

THE RING

By Piers Anthony and Robert E. Margroff • Ace Books, New York • No. A–19 • 254 pp. • 75¢

Piers Anthony is the author of last year's complex and impressive "Chthon." Robert Margroff I've overlooked if he is writing regularly. Who has contributed what to this collaboration I don't know, but the result is an excellent, thought-provoking novel with no little significance for our own era.

The "ring" of the title is the Establishment's punishment for those who rock the boat. Grafted into one of the convicted person's fingers and connected into his nervous system, it inflicts hideous torment on him if he so much as thinks wrong by Society's tenets. Jeff Font is doggedly determined to hazard the sentence of the Ring if it is necessary to get evidence that his father was framed by his partner—and once he has been caught and the sentence passed, he is determined to defy it, and does.

But there is a good deal more to the book than a picture of a contorted future society and the grim working out of ruthless justice as that society strives to protect itself. Where does insistence on an individual's rights cease to be praiseworthy and become anarchy? In the ultimate welfare society, whose members have discarded any idea of individual responsibility, are individual rights still valid? Can the kind of automatic, self-regulating governor on antisocial action that the Ring represents ever function justly, or is it bound to be used oppressively to stabilize the status quo? Read it and find your own answers in your own ideas: the book won't offer any easy ones.

A GIFT FROM EARTH

By Larry Niven • Ballantine Books, N. Y. • No. 72113 • 254 pp. • 75¢

Here is a fat novel occurring in the same era as the short stories of the author's "Neutron Star," but on just one planet, if a very strange one. Mankind has moved out to the stars by sending out hydrogen-gulping ramrobot ships. When one lands on a planet which its instruments register as meeting human standards, it tolls a shipload of deep-sleeping colonists in. This over-automated procedure has produced some major mistakes, and Lookitthat—a world rather like what Venus seems to be, with one forty-mile-high mountain raising its small, livable top above a poisonous, sizzling lowland—is one of them.

The crew of the colonist ship that landed on Lookitthat has created a tightly knit heirarchy which perpetuates itself through the Hospital—an organ bank kept filled by rounding up, and cutting up, any among the descendants of the colonists who get out of line. Naturally there is an underground into which the hero is more or less

accidentally drawn. But Larry Niven has a lively and fertile imagination and he is not one to waste it, so you'll find that the yarn is anything but formula.

Let's hope for many more stories about the universe of Lookitthat, We Made It of the 1500 mph winds, Jinx with its "peculiarities," and many another fascinating world.

THE TWO-TIMERS

By Bob Shaw • Ace Books, New York • No. H-79 • 191 pp. • 60¢

"Light of Other Days" is one of the most outstanding short stories Analog has published in recent years, and not only for its unique invention of slow glass. The author showed his ability to handle an old-fashioned, highly sentimental theme freshly and believably. He did a paperback original, "Night Walk," in 1967 for Banner Books, a publisher who doesn't distribute in Pittsburgh. Now Ace has his second novel, a time-travel story with a difference.

The difference isn't in plot or even in gimmick, this time. It is the weary old one about the man who travels back in time to prevent a tragedy and change his own past. What is different is that Shaw uses this quite ordinary plot as the vehicle for a human story about the personalities of the people involved.

You may remember that apart from the slow glass, apart from the plot line of the farmer's window, there was an atmosphere of domestic tension in "Light of Other Days." In "The Two-Timers" this atmosphere generates the story. It has made life increasingly unbearable for nine years for John and Kate Breton, ever since Breton let his wife flounce off into an attack by a possible maniac, from which she was saved by a mysterious stranger who killed the mugger. Then there is a phone call, and it appears that the caller is "Jack" Breton, another self who devised a time machine with which to go back and rescue his wife . . . a wife who was not saved in his time track.

Thus Kate Breton is required to decide which husband she will keep—Jack, who saved her, or John, with whom she has lived for nine years of growing hostility. Easy? But Jack Breton is soon shown as an embittered and ruthless individual, made so by *his* nine years of monomaniacal devotion to his single cause. He has no intention of giving Kate any choice: he will kill John and pretend he has gone away—the gentlemanly way out.

Sound like soap opera? It is. But any theme can be anything in the hands of a gifted writer, which Bob Shaw certainly is. This book isn't in a class with "Light of Other Days," and I doubt that it is going to be very popular, but he is certainly a writer to watch.

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hardworking and practical, but anything but bright.

So in fact—individual—the statistical fact was that the child showed up way out on the toe of the distribution curve; the highly improbable happened, and Abraham was a major genius of the human race.

Now observe closely, for this is the tragedy of genetics that louses up human societies which won't arrange to handle it: Abraham Lincoln had no educational opportunities. He had no teachers, no schools, no tutors—except himself. Despite those very real and very great handicaps, he became a great scholar, and—more important—a wise and understanding man.

His children, however, had every possible opportunity. Growing up in a highly educated environment, with the best possible opportunity for development of their intellectual abilities . . . anybody know what happened to Lincoln's descendants?

The difficulty is that *potentials,* are established unalterably by genetics; *abilities* result when potentials are developed. The clearest example is with respect to learning itself. A Chimpanzee is quite intelligent—but it has no potential to learn to speak, in the sense of using verbal symbology to communicate ideas. No amount of elaborate and prolonged teaching has ever been able to get a chimp to talk—even when human tutors invented a language made up entirely of chimp-type sounds, to obviate the difficulty that human vocal arrangements are more flexible than the chimpanzee's. It's perfectly obvious that *you can't teach someone how to learn.* If he has a built-in-by-genetics ability to learn, then he can be taught, and tremendous ability can be developed. Without the pre-existence of the *ability to learn,* no matter what potentials might exist, they cannot be developed.

Thus dogs, far less intelligent than chimpanzees, can be taught to speak—and speak understandable English, despite the grossly maladapted canine vocal mechanism. They have the ability-to-learn-to-speak; chimpanzees do not.

The potential for greatness *must be present at birth;* it cannot be taught, even under the very best of conditions.

Genetics is statistical; it was statistically highly improbable that Abraham Lincoln's parents should produce such a magnificent person. But, considering the statistical nature of genetics, it was highly probable that Lincoln's descendants would resemble his ancestors.

In any cultural system, individuals of great ability will achieve

great influence. (In an iron-clad absolute monarchy ruled by a nit-wit king, the Grand Vizier, or the Prime Minister, or the Major Domo of the Household, will manage, somehow, to be running things. You don't have to have the title to have the power.) And in any culture, the man of great power and influence will inevitably seek to assure his children the comforts and security he has struggled to achieve and has won. He will give them the best education he can—will tend to see that the society establishes laws and customs that will protect his children and secure them the advantages he wants for them. In simpler terms—he will do his best to do his best by his children.

What do you expect of worthy men?

Unfortunately, that's an individual-type truth. It is *not* the optimum situation for the society, which needs statistical truths, not individual truths, built into its structure.

The society must have a mechanism that transfers power from generation A to generation B, *strictly on a basis of individual competence.*

For the good of the society, individual competence alone must determine rank in the society. There must be ranks and levels in the culture—because there are differences of ability among individuals *of all races.* There must be mechanisms where by any individual, no matter what rank or level he is born into, must be able to advance without limit on a basis of pure individual ability.

Just how violently that sort of system is resented is readily apparent; fathers of great influence—due to ability—want their sons—regardless of ability!—to have the rewards and comforts the father earned. Sure—but that's far from the most powerful force in the society! One of the most potent forces against advancement-by-ability in our own society today is the Union Seniority concept—the proposition that a young, highly competent individual is not to be promoted over, or allowed to displace, a less competent man who's been there longer. It's also manifested in the concept of Tenure in teaching in schools and universities.

The simple fact is that the Universe and Genetics are so constituted that some men are superior to others as individuals—and a viable society must recognize that fact, and allow those superior individuals to demonstrate their ability, and rise freely in the society.

That there are statistical truths concerning gene pools, known as "races" or "breeds" that society must recognize and react to, just as they recognize and react to the laws of gravity, and thermodynamics.

There simply is no truth in the wishful statement "all men are equal;" genetics is the fundamental law of human nature, and it establishes as a fact that they are not, were not, and never will be equal—so long as the genetic dice roll to determine what men are! Find some way to change the reproductive process—get it under complete control—and then we can make all men equal.

Equal, identical robots.

Education, no matter how elaborate, can't do it; face the fact and work *with* it, not against it. Abraham Lincoln, individual, had no educational opportunities whatever, and no encouragement from an educated family environment—but he did have a genetic drive to learn, to accomplish. His children, given magnificent opportunities, did not have his potential—because of the operation of the statistical laws of genetics—and despite the finest educational opportunities, the encouragement of a highly educated environment, and, undoubtedly, the pressure of an anxious father, were not outstanding in any way.

Education can develop potentials that are there—but it can't generate potentials that aren't present genetically. And potentials in human beings *are not equal.*

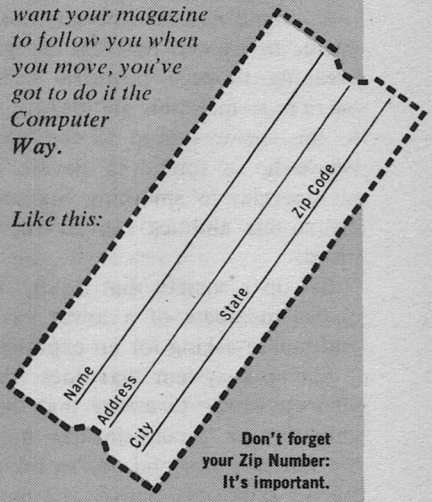
It's undoubtedly true that we, today, do not know anywhere near as much as would be necessary to

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establish a cultural system that truly matched Man and the Universe. We're just beginning to realize how appallingly ignorant we are—which is a great advance indeed.

However, we do know more than any culture that preceded us. It should be possible for wise men to sit down together, apply what we've learned of the realities of Man's nature, and Man's generation, and of the Universe, and work out a way of passing the mechanisms of society from one generation to another in a more efficient manner.

It should not be necessary for a genius to expend half his energies breaking through powerful social barriers to make his abilities useful to the society—even to the point where he is forced to devote all his energies to smashing the society so his abilities can be recognized.

Set up a society that rigidly excludes members of a lower caste, and you're asking for an explosion.

Set up a system that does what all men want—to assure that their children are secure in the status the father won—and you're asking for an explosion. Satisfy the natural desire of individuals that they be advanced steadily in rank—the Union Seniority principle, and the Tenure principle—and you're headed for destruction of the system.

Give human beings the social regulations they most want, on the fine principle of democracy—and you will most certainly guarantee collapse.

Because men are individuals, and their truths are the individual-truths that are, again and again, the exact reverse of the statistical truths that societies *must* work with. Men *are not* Man. That which is good for men is not thereby good for Man.

Men want acceptance and respect by right; Man needs to test every individual competitively, and reward the most effective men, whoever they may be.

The harsh fact of the Universe is that the only way Man can be secure is through the constant, striving, insecurity of individual men.

History shows pretty clearly that those human groups who have had the least struggle, the least insecurity, have accomplished least. Their men were happily secure in a stable system; their race achieved least, and developed least potential. Those groups that were chivied and chased and harassed and attacked and knew little peace and quiet and security —produced the highest achievements, the greatest leaders and geniuses.

It comes down to a simple problem.

If Utopia is the perfect society —who's it perfect for? Man or men? The Editor.



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