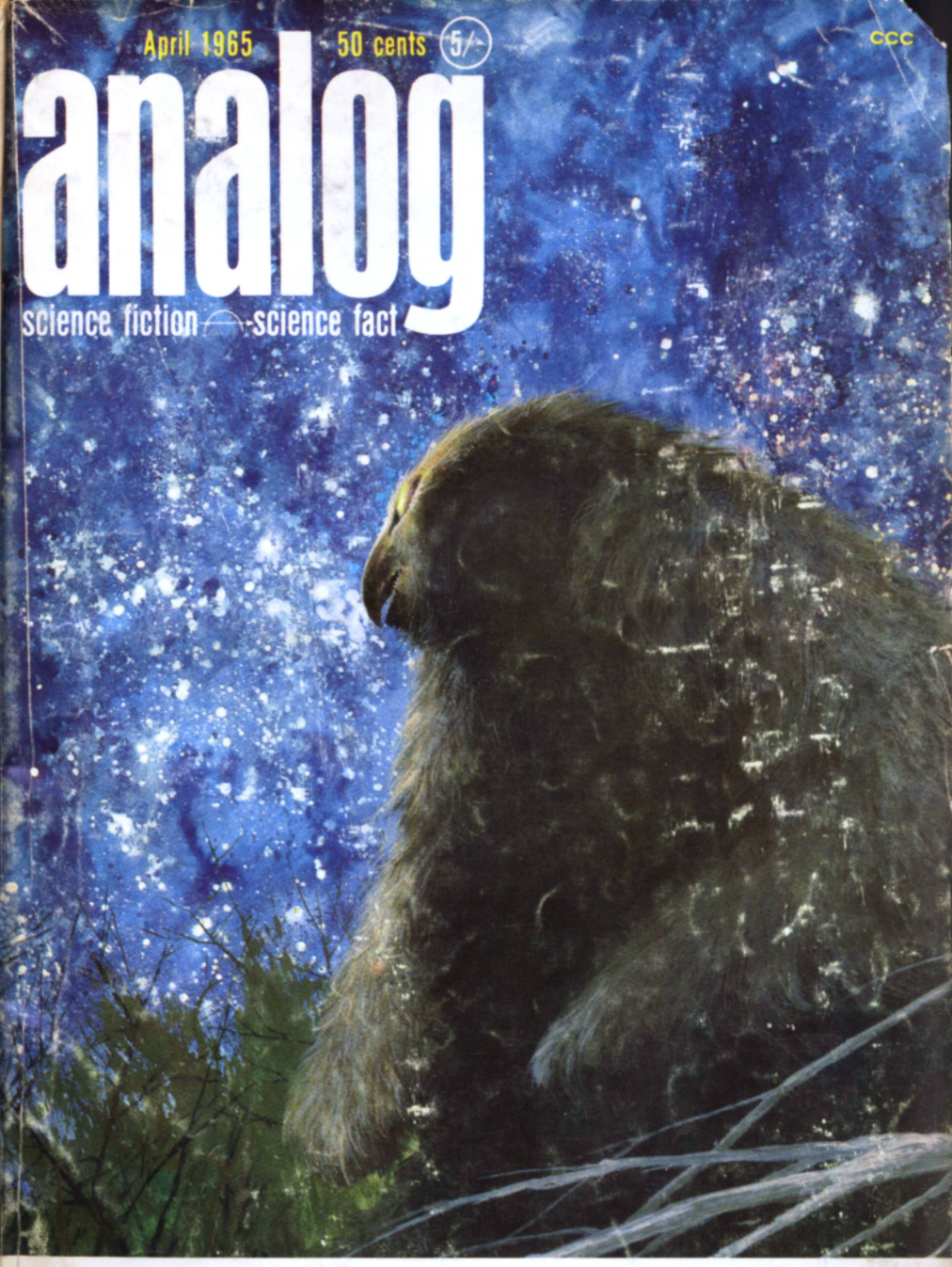
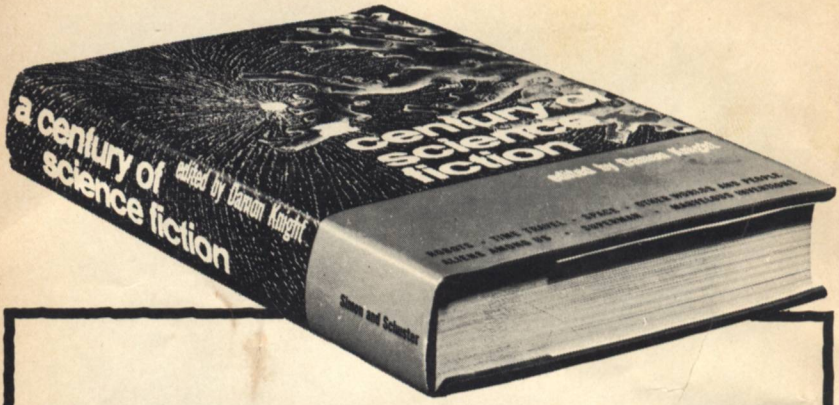
April 1965 50 cents 5/-

analog

science fiction — science fact



GOBLIN NIGHT by JAMES H. SCHMITZ



A Century of Science Fiction

Edited by DAMON KNIGHT

DAMON KNIGHT'S selection of the best science fiction stories written during the past hundred years — from Ambrose Bierce's *Moxon's Master* to Arthur C. Clarke's *The Star* . . . from a surprise selection by Mark Twain to Robert A. Heinlein's *Sky Lift* and Isaac Asimov's *Reason* . . . from H. G. Wells and Jules Verne to Poul Anderson, Bryan W. Aldiss, Will Stanton, Edgar Pangborn and 14 other master storytellers. In the collection: brilliant examples from every field of S-F invention — Robots and Supermen to Time Travel — and a feast of great reading. With an introduction and commentaries by the editor.

$4.95, at your bookstore, or order from Simon and Schuster. Dept. HK, 630 Fifth Avenue, New York 20, N. Y.

—MAIL TODAY FOR 10-DAY FREE EXAMINATION—

Simon and Schuster, Publishers
Dept. HK, 630 Fifth Avenue
New York 20, N. Y.

Please send me ..... copy (ies) of A CENTURY OF SCIENCE FICTION. If not completely satisfied, I may return the book (s) in 10 days and owe nothing. Otherwise, bill me at $4.95 per copy, plus postage, as payment in full.

Name.....

Address.....

City.....Zone....State.....

SAVE. Enclose remittance and we pay postage. Same return guarantee applies. (NYC residents please add 15¢ sales tax.)

COPYRIGHT © 1965 BY THE CONDE NAST PUBLICATIONS INC. ALL RIGHTS RESERVED. PRINTED IN THE UNITED STATES OF AMERICA. Analog Science Fiction/Science Fact is published monthly by The Conde Nast Publications Inc. Editorial and advertising offices: 420 Lexington Avenue, New York, N. Y. 10017. Executive and publishing offices: Greenwich, Connecticut. I.S.V.-Patcevitch, President; Alfred W. Cook, Treasurer; Mary E. Campbell, Secretary. Second class postage paid at Greenwich, Connecticut, and at additional mailing offices, under the Act of March 3, 1879. Subscriptions: In U. S., possessions and Canada, $5 for one year, $9 for two years, $12 for three years. Elsewhere, $7.50 for one year, $15 for two years. Payable in advance. Single copies: In U. S., possessions and Canada, 50¢. Six weeks are required for change of address. In ordering a change, write to Analog Science Fiction/Science Fact, Boulder, Colorado. Give both new and old address as printed on last label. 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, BOULDER, COLORADO.

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

JOHN W. CAMPBELL
Editor
KAY TARRANT
Assistant Editor
HERBERT S. STOLTZ
Art Director
ROBERT E. PARK
Business Manager
WALTER J. McBRIDE
Advertising Manager

NEXT ISSUE ON SALE
APRIL 8, 1965
$5.00 PER YEAR
IN THE U.S.A.
50 CENTS PER COPY
COVER BY
JOHN SCHOENHERR

analog
science fiction—science fact

Vol. LXXV, No. 2 April 1965

NOVELETTE
GOBLIN NIGHT, James H. Schmitz 8

SHORT STORIES
FAD, Mack Reynolds 40
NO THRONE OF HIS OWN, Lawrence A. Perkins 61

SERIAL
THE PROPHET OF DUNE, Frank Herbert 99
(Part Four of Five Parts)

SCIENCE FACT
THE SPACE TECHNOLOGY OF A TRACK MEET, Robert S. Richardson 83

READERS' DEPARTMENTS
THE EDITOR'S PAGE 4
IN TIMES TO COME 149
THE REFERENCE LIBRARY, P. Schuyler Miller 150
BRASS TACKS 155
THE ANALYTICAL LABORATORY 159

familiar mystery

No matter how weird, wild, wonderful and outrageously improbable something is, if it's familiar it will seem to be normal, natural, ofcourse, and by no means mysterious or supernatural.

The most primitive men observed that eggs turned into birds—or turtles or snakes, depending on where they were making their observations. That an egg could turn into something as fantastically different, and obviously immensely more complex as a bird didn't seem at all remarkable. Why . . . everybody knew that! It was perfectly familiar —not at all mysterious!

But if, to those blasé primitives, there came a man who could simply wave his hands around in the air, and have another man ten miles away "telepathically" understand what he wanted to communicate—*that's* magic! That's supernatural! That's semaphore telegraphy!

At a somewhat more sophisticated level, the fact that a caterpillar can wrap itself up in a dull, gray mass of exuded threads, then dissolve itself into a mass of liquid jelly, and magically reform that jelly into a brilliantly colored butterfly—why, *that's* not mysterious, that's natural!

The Mysterious, the Unknown, the Supernatural is always some unfamiliar, unexperienced phenomenon that we can't understand, and can't approximate by analogy.

For instance, the familiar cliché about explaining blue to a man born blind recognizes that for someone who has never experienced the phenomenon of color vision, the experience called "blue" is utterly indescribable, however familiar it may be to us.

When the Greeks were studying the stars, they soon observed that some "stars" wandered around, and named them "planets," or *wanderers*. These familiar mysteries didn't impress them too much, because they were, of course, natural—i.e., common experiences and therefore not to be wondered at.

The greatest consequence of

Copernicus and Galileo's work, and the introduction of the telescope, was to produce an immense change of attitude; the realization that Earth, this familiar world, was itself of the same nature, the same basic class of entities, as the wanderers—that Earth, too, wandered among the stars—was a tremendous philosophical revolution. Of course it didn't change the awareness of Earth's nature, but it made an enormous change in the awareness of Mars' nature, as well as of Venus, Jupiter . . .

Please note carefully; such a discovery of analogy (1) does not change Earth's nature, (2) does not change the planet's nature, but does change, and change only, *our understanding of the nature* of the newly-realized other entities.

Science today is exploring with immense success the area of objective reality—but has been unable to gain any useful foothold in the area of subjective reality, largely because Science currently holds that "subjective" and "reality" are mutually exclusive terms, like "true" and "false".

A major consequence of that is that *only* objective techniques have been developed, *only* objective experimental methods worked out, and it is held that *only* such methods are "proper experimental conditions".

I want to call attention to a familiar mystery, one that is purely subjective, that science has never been able to experiment with successfully, and one that, nevertheless, Science is absolutely dependent on. It is, actually, a member of the class Extrasensory Perception; it belongs to a group of entities including telepathy, clairvoyance, et cetera, which most scientists deny exist. They're "subjective," and to the scientist, that tends to mean "imaginary, unreal".

Yet no man could be worthy of the name scientist if he did not in fact depend on this purely subjective talent.

I'm going to describe its charac-

teristics accurately and honestly; you'll notice the description fits perfectly such talents as telepathy, clairvoyance, precognition, et cetera, yet I assure you that I am in fact describing a well-known, fully accepted human characteristic. See how long it takes you to recognize it!

It's a talent some human beings possess in high degree, some have in moderate degree, but most seem to lack the ability entirely.

It's purely subjective, the ability to perceive a relationship between purely nonmaterial entities—entities that have no objective existence whatever.

Those who have the talent in high degree, and use it in their daily living, are totally unable to describe how they do so, or what they do, or how it feels when they do it, or to teach anyone else how to do what they do.

The talent is so erratic, even in those highly talented individuals, that it can not be called into play when consciously desired, can't be shut off when not wanted, and, like many ESP talents, seems to work at least as well when you're asleep as when you're awake.

It is not under conscious control, in other words, and can not be demonstrated on demand. Actually, any time someone is put on the spot by someone else and told "O.K.—you claim you can do it. Let's see you, right now, while we can check up on you!" will almost invariably be one hundred percent unable to use his real talent at all.

Because this talent is absolutely essential to modern technology, science, and business, thousands of hours have been spent in efforts to understand it—with no appreciable results. No one has been able to demonstrate the power under properly controlled laboratory conditions.

Yet every library is filled with thousands of volumes of instances of spontaneous occurrences of the power and its results. In fact, neither libraries nor laboratories could exist without it.

It's truly an extrasensory perception, because there is no sensory organ capable of performing the observed function, since the entities it perceives are themselves completely nonobjective, nonphysical, and unobservable by any known sensory mechanism.

Moreover, any logician can give you positive proof that what it does is logically impossible. The results it produces *cannot* be produced by any logical process.

Because it is a completely familiar talent, as familiar as the Earth, we do not see that it is a "supernatural mystery". The other members of its class—subjective perception—are enormously less familiar, and in them we see "supernatural

mystery" and deny their existence. The situation is, actually, like the pre-Galileans, who did not see that Mars, Jupiter, Venus and the other planets were of the same order of entities as the familiar rocks and seas of Earth.

Actually, clairvoyance is more nearly objective than is this familiar mystery; clairvoyance allows the talented individual to perceive relationships between objective entities—a physical situation. The ESP talent science relies on—but doesn't believe in!—perceives instead the relationship between totally immaterial entities—concepts.

Physics holds that anything that can't be observed and detected doesn't exist. This brings up some extremely sticky questions. For instance, "Does the Earth's orbit exist?" Physical instruments can observe the Earth—but no instrument can observe the Earth's orbit; that requires ESP, the subjective talent that can perceive relationship between concepts which have no physically-measurable existence.

Reading a recent account of the detection of the omega-minus particle, I was fascinated by the proof of its existence. They spent several months, using a 33 billion volt machine, an immense staff of scientists, a huge liquid-hydrogen detection chamber, and believe they have two proof-of-existence photographs. The crucial step in the argu-

continued on page 160

The MATHATRON

A programmable electronic calculator that does the work of a computer.



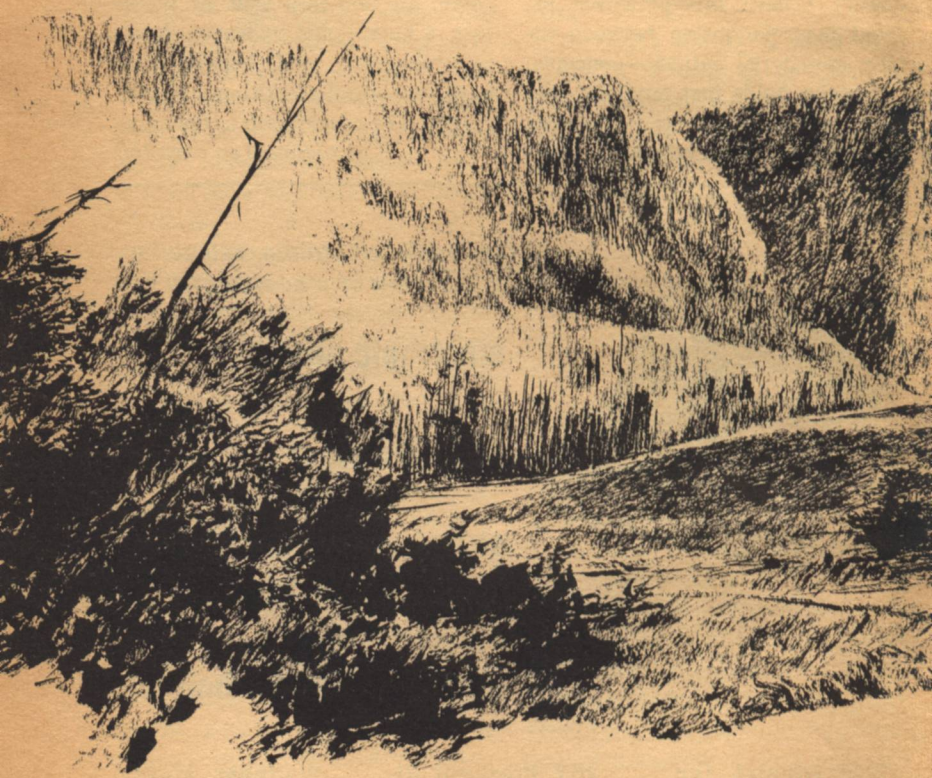
electronic speed

printed output

stored-program digital computation

floating point arithmetic

Mathatronics, Inc. 257 Crescent St. Waltham, Mass.

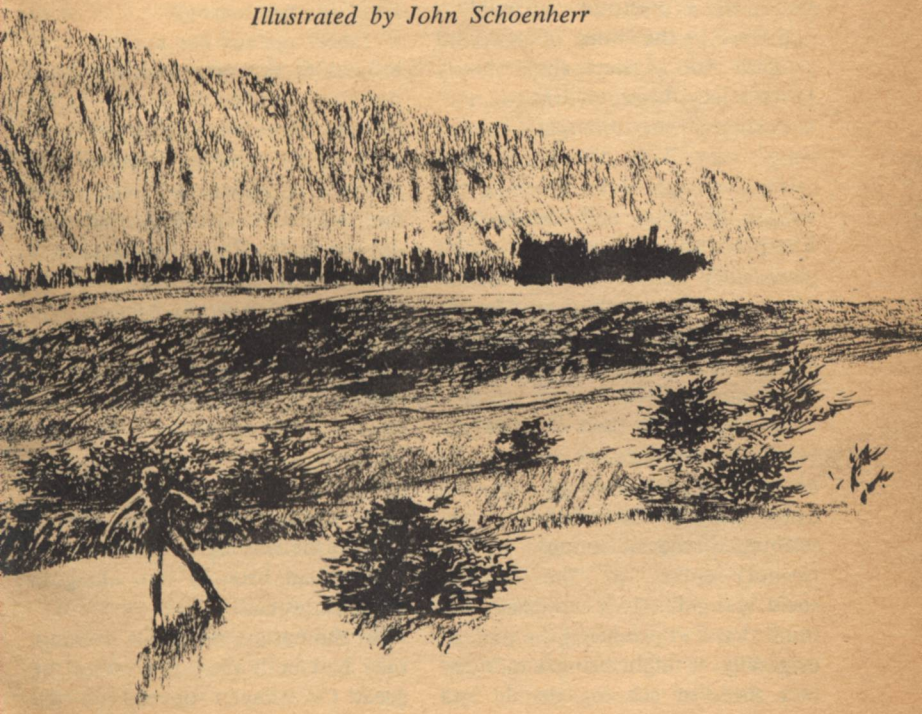


Goblin Night

One of the most interesting points Schmitz makes in this one is, I think, that Nature can produce killers—but it takes Man to produce the ultra-super in the way of killers!

JAMES H. SCHMITZ

Illustrated by John Schoenherr



There was a quivering of psi force. Then a sudden, vivid sense of running and hiding, in horrible fear of a pursuer from whom there was no escape—

Telzey's breath caught in her throat. A psi screen had flicked into instant existence about her mind, blocking out incoming impulses. The mental picture, the feeling of pursuit, already was gone, had touched her only a moment; but she stayed motionless seconds longer, eyes shut, pulses hammering out a roll of primitive alarms. She'd been dozing uneasily for the past hour, aware in a vague way of the mind-traces of a multitude of wildlife activities in the miles of parkland around. And perhaps she'd simply fallen asleep, begun to dream . . .

Perhaps, she thought—but it wasn't very likely. She hadn't been relaxed enough to be touching the fringes of sleep and dream-stuff. The probability was that, for an instant, she'd picked up the reflection of a real event, that somebody not very far from here had encountered death in some grisly form at that moment.

She hesitated, then thinned the blocking screen to let her awareness spread again through the area, simultaneously extended a quick, probing thread of thought with a memory-replica of the pattern she'd caught. If it touched the mind that had produced the pattern originally, it might bring a momentary flash of echoing details and further information . . . assuming the mind was still alive, still capable of responding.

She didn't really believe it would still be alive. The impression she'd had in that instant was that death was only seconds away.

The general murmur of mind-noise began to grow up about her again, a varying pulse of life and psi energies, diminishing gradually with distance, arising from her companions, from animals on plain and mountain, with an undernote of the dimmer emanations of plants. But no suggestion came now of the vividly disturbing sensations of a moment ago.

Telzey opened her eyes, glanced around at the others sitting about the camp fire in the mouth of Cil Chasm. There were eleven of them, a group of third and fourth year students of Pehanron College who had decided to spend the fall holidays in Melna Park. The oldest was twenty-two; she herself was the youngest—Telzey Amberdon, age fifteen. There was also a huge white dog named Chomir, not in view at the moment, the property of one of her friends who had preferred to go on a spacecruise with a very special date over the holidays. Chomir would have been a little in the way in an IP cruiser, so Telzey had brought him along to the park instead.

In the early part of the evening, they had built their fire where the great Cil canyon opened on the

rolling plain below. The canyon walls rose to either side of the camp, smothered with evergreen growth; and the Cil River, a quick, nervous stream, spilled over a series of rocky ledges a hundred feet away. The boys had set up a translucent green tent canopy, and sleeping bags were arranged beneath it. But Gikkes and two of the other girls already had announced that when they got ready to sleep, they were going to take up one of the aircars and settle down in it for the night a good thirty feet above the ground.

The park rangers had assured them such measures weren't necessary. Melna Park was full of Orado's native wildlife—that, after all, was why it had been established—but none of the animals were at all likely to become aggressive towards visitors. As for human marauders, the park was safer than the planet's cities. Overflights weren't permitted; visitors came in at ground level through one of the various entrance stations where their aircars were equipped with sealed engine locks, limiting them to contour altitudes of a hundred and fifty feet and to a speed of thirty miles an hour. Only the rangers' cars were not restricted, and only the rangers carried weapons.

It made Melna Park sound like an oasis of sylvan tranquility. But as it turned towards evening, the stars of the great cluster about Orado brightened to awesomely burning splendor in the sky. Some of them, like Gikkes, weren't used to the starblaze, had rarely spent a night outside the cities where night-screens came on gradually at the end of the day to meet the old racial preference for a dark sleep period.

Here night remained at an uncertain twilight stage until a wind began moaning up in the canyon and black storm clouds started to drift over the mountains and out across the plain. Now there were quick shifts between twilight and darkness, and eyes began to wander uneasily. There was the restless chatter of the river nearby. The wind made odd sounds in the canyon; they could hear sudden cracklings in bushes and trees, occasional animal voices.

"You get the feeling," Gikkes remarked, twisting her neck around to stare up Cil Chasm, "that something like a lullbear or spook might come trotting out of there any minute!"

Some of the others laughed uncertainly. Valia said, "Don't be silly! There haven't been animals like that in Melna Park for fifty years." She looked over at the group about Telzey. "Isn't that right, Pollard?"

Pollard was the oldest boy here. He was majoring in biology, which might make him Valia's authority on the subject of lullbears and

spooks. He nodded, said, "You can still find them in the bigger game preserves up north. But naturally they don't keep anything in public parks that makes a practice of chewing up the public. Anything you meet around here, Gikkes, will be as ready to run from you as you are from it."

"That's saying a lot!" Rish added cheerfully. The others laughed again, and Gikkes looked annoyed.

Telzey had been giving only part of her attention to the talk. She felt shut down, temporarily detached from her companions. It had taken all afternoon to come across the wooded plains from the entrance station, winding slowly above the rolling ground in the three aircars which had brought them here. Then, after they reached Cil Chasm where they intended to stay, she and Rish and Dunker, two charter members of her personal fan club at Pehanron, had spent an hour fishing along the little river, up into the canyon and back down again. They had a great deal of excitement and caught enough to provide supper for everyone; but it involved arduous scrambling over slippery rocks, wading in cold, rushing water and occasional tumbles, in one of which Telzey knocked her wrist-talker out of commission for the duration of the trip.

Drowsiness wasn't surprising after all the exercise. The surprising part was that, in spite of it, she didn't seem able to relax completely. As a rule, she felt at home wherever she happened to be outdoors. But something about this place was beginning to bother her. She hadn't noticed it at first, she had laughed at Gikkes with the others when Gikkes began to express apprehensions. But when she settled down after supper, feeling a comfortable muscular fatigue begin to claim her, she grew aware of a vague disturbance. The atmosphere of Melna Park seemed to change slowly. A hint of cruelty and savagery crept into it, of hidden terrors. Mentally, Telzey felt herself glancing over her shoulder towards dark places under the trees, as if something like a lullbear or spook actually was lurking there.

And then, in that uneasy, half-awake condition, there suddenly had been this other thing, like a dream-flash in which somebody desperately ran and hid from a mocking pursuer. To the terrified human quarry, the pursuer appeared as a glimpsed animalic shape in the twilight, big and moving swiftly, but showing no other details.

And there had been the flickering of psi energy about the scene . . .

Telzey shifted uncomfortably, running her tongue tip over her lips. The experience had been chillingly vivid; but if something of the sort really had occurred, the victim had died moments later. In that respect, there was no reason to

force herself to quick decisions now. And it might, after all, have been a dream, drifting up in her mind, created by the mood of the place. She realized she would like to believe it was a dream.

But in that case, what was creating the mood of the place?

Gikkes? It wasn't impossible. She had decided some time ago that personal acquaintances should be off limits to telepathic prowling, but when someone was around at all frequently, scraps of information were likely to filter through. So she knew Gikkes also had much more extensively developed telepathic awareness than the average person. Gikkes didn't know it and couldn't have put it to use anyway. In her, it was an erratic, unreliable quality which might have kept her in a badly confused state of mind if she had been more conscious of its effects.

But the general uneasiness Telzey had sensed and that brief psi surge—if that was what it was—fragmentary but carrying a complete horrid little story with it, could have come to her from Gikkes. Most people, even when they thought they were wide awake, appeared to be manufacturing dreams much of the time in an area of their minds they didn't know about; and Gikkes seemed nervous enough this evening to be manufacturing unconscious nightmares and broadcasting them.

But again—what made Gikkes so nervous here? The unfamiliar environment, the frozen beauty of the starblaze overhanging the sloping plain like a tent of fire, might account for it. But it didn't rule out a more specific source of disturbance.

She could make sure, Telzey thought, by probing into Gikkes' mind and finding out what was going on in there. Gikkes wouldn't know it was happening. But it took many hours, as a rule, to develop adequate contact unless the other mind was also that of a functioning telepath. Gikkes was borderline—a telepath, but not functional, or only partly so—and if she began probing around in those complexities without the experience to tell her just how to go about it, she might wind up doing Gikkes some harm.

She looked over at Gikkes. Gikkes met her eyes, said, "Shouldn't you start worrying about that dog of Gonwil's? He hasn't been in sight for the past half-hour."

"Chomir's all right," Telzey said. "He's still checking over the area."

Chomir was, in fact, only a few hundred yards away, moving along the Cil River up in the canyon. She'd been touching the big dog's mind lightly from time to time during the evening to see what he was doing. Gikkes couldn't know that, of course—nobody in this group suspected Telzey of psionic talents. But she had done a great deal of experimenting with Chomir, and

nowadays she could, if she liked, almost see with his eyes, smell with his nose, and listen through his ears. At this instant, he was watching half a dozen animals large enough to have alarmed Gikkes acutely. Chomir's interest in Melna Park's wildlife didn't go beyond casual curiosity. He was an Askanam hound, a breed developed to fight man or beast in pit and arena, too big and powerful to be apprehensive about other creatures and not inclined to chase strange animals about without purpose as a lesser dog might do.

"Well," Gikkes said, "if I were responsible for somebody else's dog, if I'd brought him here, *I'd* be making sure he didn't run off and get lost—"

Telzey didn't answer. It took no mind-reading to know that Gikkes was annoyed because Pollard had attached himself to Telzey's fan club after supper and settled down beside her. Gikkes had invited Pollard to come along on the outing; he was president of various organizations and generally important at Pehanron College. Gikkes, the glamour girl, didn't like it at all that he'd drifted over to Telzey's group, and while Telzey had no designs on him, she couldn't very well inform Gikkes of that without ruffling her further.

"I," Gikkes concluded, "would go look for him."

Pollard stood up. "It would be too bad if he strayed off, wouldn't it?" he agreed. He gave Telzey a lazy smile. "Why don't you and I look around a little together?"

Well, that was not exactly what Gikkes had intended. Rish and Dunker didn't think much of it either. They were already climbing to their feet, gazing sternly at Pollard.

Telzey glanced at them, checked the watch Dunker had loaned her after she smashed the one in her wrist-talker on the fishing excursion.

"Let's wait another five minutes," she suggested. "If he isn't back by then, we can all start looking."

As they settled down again, she sent a come-here thought to Chomir. She didn't yet know what steps she might have to take in the other matter, but she didn't want to be distracted by problems with Gikkes and the boys.

She felt Chomir's response. He turned, got his bearings instantly with nose, ears, and—though he wasn't aware of that—by the direct touch of their minds, went bounding down into the river and splashed noisily through the shallow water. He was taking what seemed to him a short cut to the camp. But that route would lead him high up the opposite bank of the twisting Cil, to the far side of the canyon.

"Not that way, stupid!" Telzey thought, verbalizing it for emphasis. "Turn around—go back!"

And then, as she felt the dog

pause comprehendingly, a voice, edged with the shock of surprise—perhaps of fear—exclaimed in her mind, *"Who are you? Who said that?"*

There had been a number of occasions since she became aware of her abilities when she'd picked up the thought-forms of another telepath. She hadn't tried to develop such contacts, feeling in no hurry to strike up an acquaintanceship on the psionic level. That was part of a world with laws and conditions of its own which should be studied thoroughly if she was to avoid creating problems for herself and others, and at present she simply didn't have the time for thorough study.

Even with the tentative exploration she'd been doing, problems arose. One became aware of a situation of which others weren't aware, and then it wasn't always possible to ignore the situation, to act as if it didn't exist. But depending on circumstances, it could be extremely difficult to do something effective about it, particularly when one didn't care to announce publicly that one was a psi.

The thing that appeared to have happened in Melna Park tonight had seemed likely to present just such problems. Then this voice spoke to her suddenly, coming out of the night, out of nowhere. Another telepath was in the area, to whom the encounter was as unexpected as it was to her. There was no immediate way of knowing whether that was going to help with the problem or complicate it further, but she had no inclination to reply at once. Whoever the stranger was, the fact that he—there had been a strong male tinge to the thoughts—was also a psi didn't necessarily make him a brother. She knew he was human; alien minds had other flavors. His questions had come in the sharply defined forms of a verbalization; he might have been speaking aloud in addressing her. There was something else about them she hadn't noticed in previous telepathic contacts—an odd, filtered quality as though his thoughts passed through a distorting medium before reaching her.

She waited, wondering about it. While she wasn't strongly drawn to this stranger, she felt no particular concern about him. He had picked up her own verbalized instructions to Chomir, had been startled by them, and, therefore, hadn't been aware of anything she was thinking previously. She'd now tightened the veil of psi energy about her mind a little, enough to dampen out the drifting threads of subconscious thought by which an unguarded mind was most easily found and reached. Tightened further, as it could be in an instant, it had stopped genuine experts in mind-probing in their tracks. This psi was no expert; an expert wouldn't

have flung surprised questions at her. She didn't verbalize her thinking as a rule, and wouldn't do it now until she felt like it. And she wouldn't reach out for him. She decided the situation was sufficiently in hand.

The silence between them lengthened. He might be equally wary now, regretting his brief outburst.

Telzey relaxed her screen, flicked out a search-thought to Chomir, felt him approaching the camp in his easy, loping run, closed the screen again. She waited a few seconds. There was no indication of interest from the other psi; apparently, even when he had his attention on her, he was able to sense only her verbalized thoughts. That simplified the matter.

She lightened the screen again. "Who are *you*?" she asked.

The reply came instantly. "So I wasn't dreaming! For a moment, I thought . . . Are there two of you?"

"No. I was talking to my dog." There *was* something odd about the quality of his thoughts. He might be using a shield or screen of some kind, not of the same type as hers but perhaps equally effective.

"Your dog? I see. It's been over a year," the voice said, "since I've spoken to others like this." It paused. "You're a woman . . . young . . . a girl . . ."

There was no reason to tell him she was fifteen. What Telzey wanted to know just now was whether he also had been aware of a disturbance in Melna Park. She asked, "Where are you?"

He didn't hesitate. "At my home. Twelve miles south of Cil Chasm across the plain, at the edge of the forest. The house is easy to see from the air."

He might be a park official. They'd noticed such a house on their way here this afternoon and speculated about who could be living there. Permission to make one's residence in a Federation Park was supposedly almost impossible to obtain.

"Does that tell you anything?" the voice went on.

"Yes," Telzey said. "I'm in the park with some friends. I think I've seen your house."

"My name," the bodiless voice told her, "is Robane. You're being careful. I don't blame you. There are certain risks connected with being a psi, as you seem to understand. If we were in a city, I'm not sure I would reveal myself. But out here . . . Somebody built a fire this evening where the Cil River leaves the Chasm. I'm a cripple and spend much of my time studying the park with scanners. Is that your fire?"

Telzey hesitated a moment. "Yes."

"Your friends," Robane's voice went on, "they're aware you and I . . . they know you're a telepath?"

"No."

"Would you be able to come to see me for a while without letting them know where you're going?"

"Why should I do that?" Telzey asked.

"Can't you imagine? I'd like to talk to a psi again."

"We *are* talking," she said.

Silence for a moment.

"Let me tell you a little about myself," Robane said then. "I'm approaching middle age—from your point I might even seem rather old. I live here alone except for a well-meaning but rather stupid housekeeper named Feddler. Feddler seems old from *my* point of view. Four years ago, I was employed in one of the Federation's science departments. I am . . . was . . . considered to be among the best in my line of work. It wasn't very dangerous work so long as certain precautions were observed. But one day a fool made a mistake. His mistake killed two of my colleagues. It didn't quite kill me, but since that day I've been intimately associated with a machine which has the responsibility of keeping me alive from minute to minute. I'd die almost immediately if I were removed from it.

"So my working days are over. And I no longer want to live in cities. There are too many foolish people there to remind me of the one particular fool I'd prefer to forget. Because of the position I'd held and the work I'd done, the Federation permitted me to make my home in Melna Park where I could be by myself . . ."

The voice stopped abruptly but Telzey had the impression Robane was still talking, unaware that something had dimmed the thread of psi between them. His own screen perhaps? She waited, alert and quiet. It might be deliberate interference, the manifestation of another active psionic field in the area —a disturbing and malicious one.

". . . On the whole, I like it here." Robane's voice suddenly was back; and it was evident he didn't realize there had been an interruption. "A psi need never be really bored, and I've installed instruments to offset the disadvantages of being a cripple. I watch the park through scanners and study the minds of animals . . . Do you like animal minds?"

That, Telzey thought, hadn't been at all a casual question. "Sometimes," she told Robane carefully. "Some of them."

"Sometimes? Some of them? I wonder . . . Solitude on occasion appears to invite the uncanny. One may notice things that seem out of place, that are disquieting. This evening . . . during the past hour perhaps, have you . . . were there suggestions of activities . . ." He paused. "I find I don't quite know how to say this."

"There was something," she said. "For a moment, I wasn't sure I wasn't dreaming."

"You mean something ugly . . ."

"Yes."

"Fear," Robane's voice said in her mind. "Fear, pain, death. Savage cruelty. So you caught it, too. Very strange! Perhaps an echo from the past touched our minds in that moment, from the time when creatures who hated man still haunted this country.

"But—well, this is one of the rare occasions when I feel lonely here. And then to hear another psi, you see . . . Perhaps I'm even a little afraid to be alone in the night just now. I'd like to speak to you, but not in this way—not in any great detail. One can never be sure who else is listening . . . I think there are many things two psis might discuss to their advantage."

The voice ended on that. He'd expressed himself guardedly, and apparently he didn't expect an immediate reply to his invitation. Telzey bit her lip. Chomir had come trotting up, had been welcomed by her and settled down. Gikkes was making cooing sounds and snapping her fingers at him. Chomir ignored the overtures. Ordinarily, Gikkes claimed to find him alarming; but here in Melna Park at night, the idea of having an oversized dog near her evidently had acquired a sudden appeal—

So Robane, too, had received the impression of unusual and unpleasant events this evening . . . events he didn't care to discuss openly. The indication that he felt frightened probably needn't be taken too seriously. He was in his house, after all; and so isolated a house must have guard-screens. The house of a crippled, wealthy recluse, who was avoiding the ordinary run of humanity, would have very effective guard-screens. If something did try to get at Robane, he could put in a call to the nearest park station and have an armed ranger car hovering about his roof in a matter of minutes. That suggestion had been intended to arouse her sympathy for a shut-in fellow psi, help coax her over to the house.

But he had noticed something. Something to judge from his cautious description, quite similar to what she had felt. Telzey looked at Chomir, stretched out on the sandy ground between her and the fire, at the big, wolfish head, the wedge of powerful jaws. Chomir was not exactly an intellectual giant but he had the excellent sensory equipment and alertness of a breed of fighting animals. If there had been a disturbance of that nature in the immediate vicinity, he would have known about it, and she would have known about it through him.

The disturbance, however, might very well have occurred somewhere along the twelve-mile stretch between the point where Cil Chasm split the mountains and Robane's house across the plain. Her impression had been that it was uncomfortably close to her. Robane appeared to have sensed it as uncom-

fortably close to him. He had showed no inclination to do anything about it, and there was, as a matter of fact, no easy way to handle the matter. Robane clearly was no more anxious than she was to reveal himself as a psi; and, in any case, the park authorities would be understandably reluctant to launch a search for a vicious but not otherwise identified man-hunting beast on no better evidence than reported telepathic impressions—at least, until somebody was reported missing.

It didn't seem a good idea to wait for that. For one thing, Telzey thought, the killer might show up at their fire before morning . . .

She grimaced uneasily, sent a troubled glance around the group. She hadn't been willing to admit it but she'd really known for minutes now that she was going to have to go look for the creature. In an aircar, she thought, even an aircar throttled down to thirty miles an hour and a contour altitude of a hundred and fifty feet, she would be in no danger from an animal on the ground if she didn't take very stupid chances. The flavor of psi about the event she didn't like. That was still unexplained. But she was a psi herself, and she would be careful.

She ran over the possibilities in her mind. The best approach should be to start out towards Robane's house and scout the surrounding wildlands mentally along that route. If she picked up traces of the killer-thing, she could pinpoint its position, call the park rangers from the car and give them a story that would get them there in a hurry. They could do the rest. If she found nothing, she could consult with Robane about the next moves to make. Even if he didn't want to take a direct part in the search, he might be willing to give her some help with it.

Chomir would remain here as sentinel. She'd plant a trace of uneasiness in his mind, just enough to make sure he remained extremely vigilant while she was gone. At the first hint from him that anything dangerous was approaching the area, she'd use the car's communicator to have everybody pile into the other two aircars and get off the ground. Gikkes was putting them in the right frame of mind to respond very promptly if they were given a real alarm.

Telzey hesitated a moment longer but there seemed to be nothing wrong with the plan. She told herself she'd better start at once. If she waited, the situation, whatever it was, conceivably could take an immediately dangerous turn. Besides, the longer she debated about it, the more unpleasant the prospect was going to look.

She glanced down at Dunker's watch on her wrist.

"Robane?" she asked in her mind.

The response came quickly. "Yes?"

"I'll start over to your house now," Telzey said. "Would you watch for my car? If there is something around that doesn't like people, I'd sooner not be standing outside your door."

"The door will be open the instant you come down," Robane's voice assured her. "Until then, I'm keeping it locked. I've turned on the scanners and will be waiting . . ." A moment's pause. "Do you have additional reason to believe—"

"Not so far," Telzey said. But there are some things I'd like to talk about—after I get there . . ." She didn't really intend to go walking into Robane's house until she had more information about him. There were too many uncertainties floating around in the night to be making social calls. But he'd be alert now, waiting for her to arrive, and might notice things she didn't.

The aircar was her own, a fast little Cloudsplitter. No one objected when she announced she was setting off for an hour's roam in the starblaze by herself. The fan club looked wistful but was well trained, and Pollard had allowed himself to be reclaimed by Gikkes. Gikkes clearly regarded Telzey's solo excursion as a fine idea . . .

She lifted the Cloudsplitter out of the mouth of Cil Chasm. At a hundred and fifty feet, as the sealed engine lock clicked in, the little car automatically stopped its ascent. Telzey turned to the right, along the forested walls of the mountain, then swung out across the plain.

It should take her about twenty minutes to get to Robane's house if she went there in a straight line; and if nothing else happened, she intended to go there in a straight line. What the park maps called a plain was a series of sloping plateaus, broken by low hills, descending gradually to the south. It was mainly brush country, dotted with small woods which blended here and there into patches of forest. Scattered herds of native animals moved about in the open ground, showing no interest in the aircar passing through the clusterlight overhead.

Everything looked peaceful enough. Robane had taken her hint and remained quiet. The intangible bubble of the psi screen about Telzey's mind thinned, opened wide. Her awareness went searching ahead, to all sides . . .

Man-killer, where are you?

Perhaps ten minutes passed before she picked up the first trace. By then, she could see a tiny, steady spark of orange light ahead against the dark line of the forest. That would be Robane's house, still five or six miles away.

Robane hadn't spoken again. There had been numerous fleeting contacts with animal minds savage

enough in their own way, deadly to one another. But the thing that hunted man should have a special quality, one she would recognize when she touched it.

She touched it suddenly—a blur of alert malignance, gone almost at once. She was prepared for it, but it still sent a thrill of alarm through her. She moistened her lips, told herself again she was safe in the car. The creature definitely had not been far away. Telzey slipped over for a moment into Chomir's mind. The big dog stood a little beyond the circle of firelight, probing the land to the south. He was unquiet but no more than she had intended him to be. His senses had found nothing of unusual significance. The menace wasn't there.

It was around here, ahead, or to left or right. Telzey let the car move on slowly. After a while, she caught the blur for a moment again, lost it again . . .

She approached Robane's house gradually. Presently she could make it out well enough in the clusterlight, a sizable structure, set in a garden of its own which ended where the forest began. Part of the building was two-storied, with a balcony running around the upper story. The light came from there, dark-orange light glowing through screened windows.

The second fleeting pulse of that aura of malevolence had come from this general direction; she was sure of it. If the creature was in the forest back of the house, perhaps watching the house, Robane's apprehensions might have some cause, after all. She had brought the Cloudsplitter almost to a stop some five hundred yards north of the house; now she began moving to the left, then shifted in towards the forest, beginning to circle the house as she waited for another indication. Robane should be watching her through the telescanners, and she was grateful that he hadn't broken the silence. Perhaps he had realized what she was trying to do.

For long minutes now, she had been intensely keyed up, sharply aware of the infinite mingling of life detail below. It was as if the plain had come alight in all directions about her, a shifting glimmer of sparks, glowing emanations of life-force, printed in constant change on her awareness. To distinguish among it all the specific pattern which she had touched briefly twice might not be an easy matter. But then, within seconds, she made two significant discoveries.

She had brought the Cloudsplitter nearly to a stop again. She was now to the left of Robane's house, no more than two hundred yards from it, close enough to see a flock of small, birdlike creatures flutter about indistinctly in the garden shrubbery. Physical vision seemed to overlap and blend with her inner awareness, and among the uncomplicated emanations of small ani-

mal life in the garden, there was now a center of mental emanation which was of more interest.

It was inside the house, and it was human. It seemed to Telzey it was Robane she was sensing. That was curious, because if his mind was screened as well as she'd believed, she should not be able to sense him in this manner. But, of course, it might not be. She had simply assumed he had developed measures against being read as adequate as her own.

Probably it was Robane. Then where, Telzey thought, was that elderly, rather stupid housekeeper named Feddler he'd told her about? Feddler's presence, her mind unscreened in any way, should be at least equally obvious now.

With the thought, she caught a second strong glow. That was not the mind of some stupid old woman, or of anything human. It was still blurred, but it was the mind for which she had been searching. The mind of some baleful, intelligent tiger-thing. And it was very close.

She checked again, carefully. Then she knew. It was not back in the forest, and not hidden somewhere on the plain nearby.

It was inside Robane's house.

For a moment, shock held her motionless. Then she swung the Cloudsplitter smoothly to the left, started moving off along the edge of the forest.

"Where are you going?" Robane's voice asked in her mind.

Telzey didn't answer. The car already was gliding along at the thirty miles an hour its throttled-down engine allowed it to go. Her forefinger was flicking out the call number of Rish's aircar back at the camp on the Cloudsplitter's communicator.

There'd been a trap set for her here. She didn't yet know what kind of a trap, or whether she could get out of it by herself. But the best thing she could do at the moment was to let other people know immediately where she was—

A dragging, leaden heaviness sank through her. She saw her hand drop from the communicator dial, felt herself slump to the left, head sagging down on the side rest, face turned half up. She felt the Cloudsplitter's engines go dead. The trap had snapped shut.

The car was dropping, its forward momentum gone. Telzey made a straining effort to sit back up, lift her hands to the controls, and nothing happened. She realized then that nothing could have happened if she had reached the controls. If it hadn't been for the countergravity materials worked into its structure, the Cloudsplitter would have plunged to the ground like a rock. As it was, it settled gradually down through the air, swaying from side to side.

She watched the fiery night sky shift above with the swaying of the car, sickened by the conviction that

she was dropping towards death, trying to keep the confusion of terror from exploding through her . . .

"I'm curious to know," Robane's voice said, "what made you decide at the last moment to decline my invitation and attempt to leave."

She wrenched her attention away from terror, reached for the voice and Robane.

There was the crackling of psi, open telepathic channels through which her awareness flowed in a flash. For an instant, she was inside his mind. Then psi static crashed, and she was away from it again. Her awareness dimmed, momentarily blurred out. She'd absorbed almost too much. It was as if she'd made a photograph of a section of Robane's mind—a pitiful and horrible mind.

She felt the car touch the ground, stop moving. The slight jolt tilted her over farther, her head lolling on the side rest. She was breathing; her eyelids blinked. But her conscious efforts weren't affecting a muscle of her body.

The dazed blurriness began to lift from her thoughts. She found herself still very much frightened but no longer accepting in the least that she would die here. She should have a chance against Robane. She discovered he was speaking again, utterly unaware of what had just occurred.

"I'm not a psi," his voice said. "But I'm a gadgeteer—and, you see, I happen to be highly intelligent. I've used my intelligence to provide myself with instruments which guard me and serve my wishes here. Some give me abilities equivalent to those of a psi. Others, as you've just experienced, can be used to neutralize power devices or to paralyze the human voluntary muscular system within as much as half a mile of this room.

"I was amused by your cautious hesitation and attempted flight just now. I'd already caught you. If I'd let you use the communicator, you would have found it dead. I shut it off as soon as your aircar was in range . . ."

Robane not a psi? For an instant, there was a burbling of lunatic, silent laughter in Telzey's head. In that moment of full contact between them, she'd sensed a telepathic system functional in every respect except that he wasn't aware of it. Psi energy flared about his words as he spoke. That came from one of the machines, but only a telepath could have operated such a machine.

Robane had never considered that possibility. If the machine static hadn't caught her off guard, broken the contact before she could secure it, he would be much more vulnerable in his unawareness now than an ordinary nonpsi human.

She'd reached for him again as he was speaking, along the verbalized thought-forms directed at her. But the words were projected through a machine. Following them

back, she wound up at the machine and another jarring blast of psi static. She would have to wait for a moment when she found an opening to his mind again, when the machines didn't happen to be covering him. He was silent now. He intended to kill her as he had others before her, and he might very well be able to do it before an opening was there. But he would make no further moves until he felt certain she hadn't been able to summon help in a manner his machines hadn't detected. What he had done so far he could explain—he had forced an aircar prowling about his house to the ground without harming its occupant. There was no proof of anything else he had done except the proof in Telzey's mind, and Robane didn't know about that.

It gave her a few minutes to act without interference from him.

"What's the matter with that dog?" Gikkes asked nervously. "He's behaving like . . . like he thinks there's something around."

The chatter stopped for a moment. Eyes swung over to Chomir. He stood looking out from the canyon ledge over the plain, making a rumbling noise in his throat.

"Don't be silly," Valia said. "He's just wondering where Telzey's gone." She looked at Rish. "How long has she been gone?"

"Twenty-seven minutes," Rish said.

"Well, that's nothing to worry about, is it?" Valia checked herself, added, "Now look at that, will you!" Chomir had swung around, moved over to Rish's aircar, stopped beside it, staring at them with yellow eyes. He made the rumbling noise again.

Gikkes said, watching him fascinatedly, "Maybe something's happened to Telzey."

"Don't talk like that," Valia said. "What could happen to her?"

Rish got to his feet. "Well—it can't hurt to give her a call . . ." He grinned at Valia to show he wasn't in the least concerned, went to the aircar, opened the door.



Chomir moved silently past him into the car.

Rish frowned, glanced back at Valia and Dunker coming up behind him, started to say something, shook his head, slid into the car and turned on the communicator.

Valia inquired, her eyes uneasily on Chomir, "Know her number?"

"Uh-huh." They watched as he flicked the number out on the dial, then stood waiting.

Presently Valia cleared her throat. "She's probably got out of the car and is walking around somewhere."

"Of course she's walking," Rish said shortly.

"Keep buzzing anyway," Dunker said.

"I am." Rish glanced at Chomir again. "If she's anywhere near the car, she'll be answering in a moment . . ."

"Why don't you answer me?" Robane's voice asked, sharp with impatience. "It would be very foolish of you to make me angry."

Telzey made no response. Her eyes blinked slowly at the starblaze. Her awareness groped, prowled, patiently, like a hungry cat, for anything, the slightest wisp of escaping unconscious thought, emotion, that wasn't filtered through the blocking machines, that might give her another opening to the telepathic levels of Robane's mind. In the minutes she'd been lying paralyzed across the seat of the aircar, she had arranged and comprehended the multidetailed glimpse she'd had of it. She understood Robane very thoroughly now.

The instrument room of the house was his living area. A big room centered about an island of immaculate precision machines. Robane rarely was away from it. She knew what he looked like, from mirror images, glimpses in shining instrument surfaces, his thoughts about himself. A half-man, enclosed from the waist down in a floating, mobile machine like a tiny aircar, which carried him and kept him alive. The little machine was efficient; the half-body protruding from it was vigorous and strong. Robane in his isolation gave fastidious attention to his appearance. The coat which covered him down to the machine was tailored to Orado City's latest fashion; his thick hair was carefully groomed.

He had led a full life as scientist, sportsman, man of the world, before the disaster which left him bound to his machine. To make the man responsible for the disaster pay for his blunder in full became Robane's obsession and he laid his plans with all the care of the trophy hunter he had been. His work for the Federation had been connected with the further development of devices permitting the direct transmission of sensations from one living brain to another and their adaptation to various new uses. In his retirement in Melna Park, Robane patiently refined such devices for his own purposes and succeeded beyond his expectations, never suspecting that the success was due in part to the latent psionic abilities he was stimulating with his experiments.

Meanwhile, he had prepared for the remaining moves in his plan, installed automatic machinery to take the place of his housekeeper and dismissed the old woman from his service. A smuggling ring provided him with a specimen of a savage natural predator native to the continent for which he had set up quarters beneath the house. Robane trained the beast and himself, perfecting his skill in the use of the instruments, sent the conditioned animal out at night to hunt, brought it back after it had made the kill in which he had shared through its mind. There was sharper excitement in that alone than he had

found in any previous hunting experience. There was further excitement in treating trapped animals with the drug that exposed their sensations to his instruments when he released them and set the killer on their trail. He could be hunter or hunted, alternately and simultaneously, following each chase to the end, withdrawing from the downed quarry only when its numbing death impulses began to reach him.

When it seemed he had no more to learn, he had his underworld connections deliver his enemy to the house. That night, he awakened the man from his stupor, told him what to expect and turned him out under the starblaze to run for his life. An hour later, Robane and his savage deputy made a human kill, the instruments fingering the victim's drug-drenched nervous system throughout and faithfully transmitting his terrors and final torment.

With that, Robane had accomplished his revenge. But he had no intention now of giving up the exquisite excitements of the new sport he had developed in the process. He became almost completely absorbed by it, as absorbed as the beast he had formed into an extension of himself. They went out by night to stalk and harry, run down and kill. They grew alike in cunning, stealth and savage audacity, were skillful enough to create no unusual disturbance among the park animals with their sport. By morning, they were back in Robane's house to spend most of the day in sleep. Unsuspecting human visitors who came through the area saw no traces of their nocturnal activities.

Robane barely noticed how completely he had slipped into this new way of living. Ordinarily, it was enough. But he had almost no fear of detection now, and sometimes he remembered there had been a special savor in driving a human being to his death. Then his contacts would bring another shipment of "supplies" to the house, and that night he hunted human game. Healthy young game which did its desperate best to escape but never got far. It was something humanity owed him.

For a while, there was one lingering concern. During his work for the overgovernment, he'd had several contacts with a telepath called in to assist in a number of experiments. Robane had found out what he could about such people and believed his instruments would shield him against being detected and investigated by them. He was not entirely sure of it, but in the two years he had been pursuing his pleasures undisturbed in Melna Park his uneasiness on that point had almost faded away.

Telzey's voice, following closely on his latest human kill, startled him profoundly. But when he realized that it was a chance contact, that she was here by accident, it occurred to him that this was an

opportunity to find out whether a telepathic mind could be dangerous to him. She seemed young and inexperienced—he could handle her through his instruments with the slightest risk to himself.

Rish and Dunker were in Rish's aircar with Chomir, Telzey thought, and a third person, who seemed to be Valia, was sitting behind them. The car was aloft and moving, so they had started looking for her. It would be nice if they were feeling nervous enough to have the park rangers looking for her, too; but that was very unlikely. She had to handle Chomir with great caution here. If he'd sensed any fear in her, he would have raced off immediately in her general direction to protect her, which would have been of no use at all.

As it was, he was following instructions he didn't know he was getting. He was aware which way the car should go, and he would make that quite clear to Rish and the others if it turned off in any other direction. Since they had no idea where to look for her themselves, they would probably decide to rely on Chomir's intuition.

That would bring them presently to this area. If she was outside the half-mile range of Robane's energy shut-off device by then, they could pick her up safely. If she wasn't, she'd have to turn them away through Chomir again or she'd simply be drawing them into danger with her. Robane, however, wouldn't attempt to harm them unless he was forced to it. Telzey's disappearance in the wildlands of the park could be put down as an unexplained accident; he wasn't risking much there. But a very intensive investigation would get under way if three other students of Pehanron College vanished simultaneously along with a large dog. Robane couldn't afford that.

"Why don't you answer?"

There was an edge of frustrated rage in Robane's projected voice. The paralysis field which immobilized her also made her unreachable to him. He was like an animal balked for the moment by a glass wall. He'd said he had a weapon trained on her which could kill her in an instant as she lay in the car, and Telzey knew it was true from what she had seen in his mind. For that matter, he probably only had to change the setting of the paralysis field to stop her heartbeat or her breathing.

But such actions wouldn't answer the questions he had about psis. She'd frightened him tonight; and now he had to run her to her death, terrified and helpless as any other human quarry, before he could feel secure again.

"Do you think I'm afraid to kill you?" he asked, seeming almost plaintively puzzled. "Believe me, if I pull the trigger my finger is touching, I won't even be questioned about your disappearance. The

park authorities have been instructed by our grateful government to show me every consideration, in view of my past invaluable contributions to humanity, and in view of my present disability. No one would think to disturb me here because some foolish girl is reported lost in Melna Park . . ."

The thought-voice went on, its fury and baffllement filtered through a machine, sometimes oddly suggestive even of a ranting, angry machine. Now and then it blurred out completely, like a bad connection, resumed seconds later. Telzey drew her attention away from it. It was a distraction in her waiting for another open subconscious bridge to Robane's mind. Attempts to reach him more directly remained worse than useless. The machines also handled mind-stuff, but mechanically channeled, focused and projected; the result was a shifting, flickering, nightmarish distortion of emanations in which Robane and his instruments seemed to blend in constantly changing patterns. She'd tried to force through it, had drawn back quickly, dazed and jolted again . . .

Every minute she gained here had improved her chances of escape, but she thought she wouldn't be able to stall him much longer. The possibility that a ranger patrol or somebody else might happen by just now, see her Cloudsplitter parked near the house, and come over to investigate, was probably slight, but Robane wouldn't be happy about it. If she seemed to remain intractable, he'd decide at some point to dispose of her at once.

So she mustn't seem too intractable. Since she wasn't replying, he would try something else to find out if she could be controlled. When he did, she would act frightened silly —which she was in a way, except that it didn't seem to affect her ability to think now—and do whatever he said except for one thing. After he turned off the paralysis field, he would order her to come to the house. She couldn't do that. Behind the entry door was a lock chamber. If she stepped inside, the door would close; and with the next breath she took she would have absorbed a full dose of the drug that let Robane's mind-instruments settle into contact with her. She didn't know what effect that would have. It might nullify her ability to maintain her psi screen and reveal her thoughts to Robane. If he knew what she had in mind, he would kill her on the spot. Or the drug might distort her on the telepathic level and end her chances of getting him under control.

"It's occurred to me," Robane's voice said, "that you may not be deliberately refusing to answer me. It's possible that you are unable to do it either because of the effect of the paralysis field or simply because of fear."

Telzey had been wondering when it would occur to him. She waited, new tensions growing up in her.

"I'll release you from the field in a moment," the voice went on. "What happens then depends on how well you carry out the instructions given you. If you try any tricks, little psi, you'll be dead. I'm quite aware you'll be able to move normally seconds after the field is off. Make no move you aren't told to make. Do exactly what you are told to do, and do it without hesitation. Remember those two things. Your life depends on them."

He paused, added, "The field is now off . . ."

Telzey felt a surge of strength and lightness all through her. Her heart began to race. She refrained carefully from stirring. After a moment, Robane's voice said, "Touch nothing in the car you don't need to touch. Keep your hands in sight. Get out of the car, walk twenty feet away from it and stop. Then face the house."

Telzey climbed out of the car. She was shaky throughout; but it wasn't as bad as she'd thought it would be when she first moved again. It wasn't bad at all. She walked on to the left, stopped and looked up at the orange-lit, screened windows in the upper part of the house.

"Watch your car," Robane's voice told her.

She looked over at the Cloudsplitter. He'd turned off the power neutralizer and the car was already moving. It lifted vertically from the ground, began gliding forward thirty feet up, headed in the direction of the forest beyond the house. It picked up speed, disappeared over the trees.

"It will begin to change course when it reaches the mountains," Robane's voice said. "It may start circling and still be within the park when it is found. More probably, it will be hundreds of miles away. Various explanations will be offered for your disappearance from it, apparently in midair, which needn't concern us now . . . Raise your arms before you, little psi. Spread them farther apart. Stand still."

Telzey lifted her arms, stood waiting. After an instant, she gave a jerk of surprise. Her hands and arms, Dunker's watch on her wrist, the edges of the short sleeves of her shirt suddenly glowed white.

"Don't move!" Robane's voice said sharply. "This is a searchbeam. It won't hurt you."

She stood still again, shifted her gaze downwards. What she saw of herself and her clothes and of a small patch of ground about her feet all showed the same cold, white glow, like fluorescing plastic. There was an eerie suggestion of translucence. She glanced back at her hands, saw the fine bones showing faintly as more definite lines of white in the glow. She felt nothing and the beam wasn't affecting her vision, but it was an efficient device.

Sparks of heatless light began stabbing from her clothing here and there; within moments, Robane located half a dozen minor items in her pockets and instructed her to throw them away one by one, along with the watch. He wasn't taking chances on fashionably camouflaged communicators, perhaps suspected even this or that might be a weapon. Then the beam went off and he told her to lower her arms again.

"Now a reminder," his voice went on. "Perhaps you're unable to speak to me. And perhaps you could speak but think it's clever to remain silent in this situation. That isn't too important. But let me show you something. It will help you keep in mind that it isn't at all advisable to be too clever in dealing with me . . ."

Something suddenly was taking shape twenty yards away, between Telzey and the house; and fright flicked through her like fire and ice in the instant before she saw it was a projection placed a few inches above the ground. It was an image of Robane's killer, a big, bulky creature which looked bulkier because of the coat of fluffy, almost feathery fur covering most of it like a cloak. It was half crouched, a pair of powerful forelimbs stretched out through the cloak of fur. Ears like upturned horns projected from the sides of the head and big, round, dark eyes, the eyes of a star-night hunter, were set in front above the sharply curved, serrated cutting beak.

The image faded within seconds. She knew what the creature was. The spooks had been, at one time, almost the dominant life form on this continent; the early human settlers hated and feared them for their unqualified liking for human flesh, made them a legend which haunted Orado's forests long after they had, in fact, been driven out of most of their territory. Even in captivity, from behind separating force fields, their flat, dark stares, their size, goblin appearance and monkey quickness disturbed impressionable people.

"My hunting partner," Robane's voice said. "My other self. It is not pleasant, not at all pleasant, to know this is the shape that is following your trail at night in Melna Park. You had a suggestion of it this evening. Be careful not make me angry again. Be quick to do what I tell you. Now come forward to the house."

Telzy saw the entry door in the garden slide open. Her heart began to beat heavily. She didn't move.

"Come to the house!" Robane repeated.

Something accompanied the words, a gush of heavy, subconscious excitement, somebody reaching for a craved drug . . . but Robane's drug was death. As she touched the excitement, it vanished. It was what she had waited for, a

line to the unguarded levels of his mind. If it came again and she could hold it even for seconds—

It didn't come again. There was a long pause before Robane spoke.

"This is curious," his voice said slowly. "You refuse. You know you are helpless. You know what I can do. Yet you refuse. I wonder . . ."

He went silent. He was suspicious now, very. For a moment, she could almost feel him finger the trigger of his weapon. But the drug was there, in his reach. She was cheating him out of some of it. He wouldn't let her cheat him out of everything . . .

"Very well," the voice said. "I'm tired of you. I was interested in seeing how a psi would act in such a situation. I've seen. You're so afraid you can barely think. So run along. Run as fast as you can, little psi. Because I'll soon be following."

Telzey stared up at the windows. Let him believe she could barely think.

"Run!"

She whipped around, as if shocked into motion by the command, and ran, away from Robane's house, back in the direction of the plain to the north.

"I'll give you a warning," Robane's voice said, seeming to move along with her. "Don't try to climb a tree. We catch the ones who do that immediately. We can climb better than you can, and if the tree is big enough we'll come up after you. If the tree's too light to hold us, or if you go out where the branches are too thin, we'll simply shake you down. So keep running."

She glanced back as she came up to the first group of trees. The orange windows of the house seemed to be staring after her. She went in among the trees, out the other side, and now the house was no longer in sight.

"Be clever now," Robane's voice said. "We like the clever ones. You have a chance, you know. Perhaps somebody will see you before you're caught. Or you may think of some way to throw us off your track. Perhaps you'll be the lucky one who gets away. We'll be very, very sorry then, won't we? So do your best, little psi. Do your best. Give us a good run."

She flicked out a search-thought, touched Chomir's mind briefly. The aircar was still coming, still on course, still too far away to do her any immediate good . . .

She ran. She was in as good condition as a fifteen-year-old who liked a large variety of sports and played hard at them was likely to get. But she had to cover five hundred yards to get beyond the range of Robane's house weapons, and on this broken ground it began to seem a long, long stretch. How much time would he give her? Some of those he'd hunted had been allowed a start of thirty minutes or more . . .

She began to count her steps. Robane remained silent. When she thought she was approaching the end of five hundred yards, there were trees ahead again. She remembered crossing over a small stream followed by a straggling line of trees as she came up to the house. That must be it. And in that case, she was beyond the five hundred yard boundary.

A hungry excitement swirled about her and was gone. She'd lashed at the feeling quickly, got nothing. Robane's voice was there an instant later.

"We're starting now . . ."

So soon? She felt shocked. He wasn't giving her even the pretense of a chance to escape. Dismay sent a wave of weakness through her as she ran splashing down into the creek. Some large animals burst out of the water on the far side, crashed through the bushes along the bank and pounded away. Telzey hardly noticed them. Turn to the left, downstream, she thought. It was a fast little stream. The spook must be following by scent and the running water should wipe out her trail before it got here . . .

But others it had followed would have decided to turn downstream when they reached the creek. If it didn't pick up the trail on the far bank and found no human scent in the water coming down, it only had to go along the bank to the left until it either heard her in the water or reached the place where she'd left it.

They'd expect her, she told herself, to leave the water on the far side of the creek, not to angle back in the direction of Robane's house. Or would they? It seemed the best thing to try.

She went downstream as quickly as she could, splashing, stumbling on slippery rock, careless of noise for the moment. It would be a greater danger to lose time trying to be quiet. A hundred yards on, stout tree branches swayed low over the water. She could catch them, swing up, scramble on up into the trees.

Others would have tried that, too. Robane and his beast knew such spots, would check each to make sure it wasn't what she had done.

She ducked, gasping, under the low-hanging branches, hurried on. Against the starblaze a considerable distance ahead, a thicker cluster of trees loomed darkly. It looked like a sizable little wood surrounding the watercourse. It might be a good place to hide.

Others, fighting for breath after the first hard run, legs beginning to falter, would have had that thought.

Robane's voice said abruptly in her mind, "So you've taken to the water. It was your best move . . ."

The voice stopped. Telzey felt the first stab of panic. The creek curved sharply ahead. The bank on the left was steep, not the best place

to get out. She followed it with her eyes. Roots sprouted out of the bare earth a little ahead. She came up to them, jumped to catch them, pulled herself up and scrambled over the edge of the bank. She climbed to her feet, hurried back in the general direction of Robane's house, dropped into a cluster of tall grass. Turning, flattened out on her stomach, she lifted her head to stare back in the direction of the creek. There was an opening in the bushes on the other bank, with the cluster-light of the skyline showing through it. She watched that, breathing as softly as she could. It occurred to her that if a breeze was moving the wrong way, the spook might catch her scent on the air. But she didn't feel any breeze.

Perhaps a minute passed—certainly no more. Then a dark silhouette passed lightly and swiftly through the opening in the bushes she was watching, went on downstream. It was larger than she'd thought it would be when she saw its projected image; and that something so big should move in so effortless a manner, seeming to drift along the ground, somehow was jolting in itself. For a moment, Telzey had distinguished, or imagined she had distinguished, the big, round head held high, the pointed ears like horns. *Goblin,* her nerves screamed. A feeling of heavy dread flowed through her, seemed to drain away her strength. This was how the others had felt when they ran and crouched in hiding, knowing there was no escape from such a pursuer . . .

She made herself count off a hundred seconds, got to her feet and started back on a slant towards the creek, to a point a hundred yards above the one where she had climbed from it. If the thing returned along this side of the watercourse and picked up her trail, it might decide she had tried to escape upstream. She got down quietly into the creek, turned downstream again, presently saw in the distance the wood which had looked like a good place to hide. The spook should be prowling among the trees there now, searching for her. She passed the curve where she had pulled herself up on the bank, waded on another hundred steps, trying to make no noise at all, almost certain from moment to moment she could hear or glimpse the spook on its way back. Then she climbed the bank on the right, pushed carefully through the hedges of bushes that lined it, and ran off into the open plain sloping up to the north.

After perhaps a hundred yards, her legs began to lose the rubbery weakness of held-in terror. She was breathing evenly. The aircar was closer again and in not too many more minutes she might find herself out of danger. She didn't look back. If the spook was coming up behind her, she couldn't outrun it, and it

wouldn't help to feed her fears by watching for shadows on her trail.

She shifted her attention to signs from Robane. He might be growing concerned by now and resort to his telescanners to look for her and guide his creature after her. There was nothing she could do about that. Now and then she seemed to have a brief awareness of him, but there had been no definite contact since he had spoken.

She reached a rustling grove, walked and trotted through it. As she came out the other side, a herd of graceful deerlike animals turned from her and sped with shadowy quickness across the plain and out of her range of vision. She remembered suddenly having heard that hunted creatures sometimes covered their trail by mingling with other groups of animals . . .

A few minutes later, she wasn't sure how well that was working. Other herds were around; sometimes she saw shadowy motion ahead or to right or left; then there would be whistles of alarm, the stamp of hoofs, and they'd vanish like drifting smoke, leaving the section of plain about her empty again. This was Robane's hunting ground; the animals here might be more alert and nervous than in other sections of the park. And perhaps, Telzey thought, they sensed she was the quarry tonight and was drawing danger towards them. Whatever the reason, they kept well out of her way. But she'd heard fleeing herds cross behind her a number of times, so they might in fact be breaking up her trail enough to make it more difficult to follow. She kept scanning the skyline above the slope ahead, looking for the intermittent green flash of a moving aircar or the sweep of its searchbeam along the ground. They couldn't be too far away.

She slowed to a walk again. Her legs and lungs hadn't given out, but she could tell she was tapping the final reserves of strength. She sent a thought to Chomir's mind, touched it instantly and, at the same moment, caught a glimpse of a pulsing green spark against the starblaze, crossing down through a dip in the slopes, disappearing beyond the wooded ground ahead of her. She went hot with hope, swung to the right, began running towards the point where the car should show again.

They'd arrived. Now to catch their attention . . .

"Here!" she said sharply in the dog's mind.

It meant: "Here I am! Look for me! Come to me!" No more than that. Chomir was keyed up enough without knowing why. Any actual suggestion that she was in trouble might throw him out of control.

She almost heard the deep, whining half-growl with which he responded. It should be enough. Chomir knew now she was somewhere nearby, and Rish and the others would see it immediately in the

way he behaved. When the aircar reappeared, its searchbeam should be swinging about, fingering the ground to locate her.

Telzey jumped down into a little gully, felt, with a shock of surprise, her knees go soft with fatigue as she landed, and clambered shakily out the other side. She took a few running steps forward, came to a sudden complete stop.

Robane! She felt him about, a thick, ugly excitement. It seemed the chance moment of contact for which she'd been waiting, his mind open, unguarded—

She looked carefully around. Something lay beside a cluster of bushes thirty feet ahead. It appeared to be a big pile of windblown dry leaves and grass, but its surface stirred with a curious softness in the breeze. Then a wisp of acrid animal odor touched Telzey's nostrils and she felt the hot-ice surge of deep fright.

The spook lifted its head slowly out of its fluffed, mottled mane and looked at her. Then it moved from its crouched position . . . a soundless shift a good fifteen feet to the right, light as the tumbling of a big ball of moss. It rose on its hind legs, the long fur settling loosely about it like a cloak, and made a chuckling sound of pleasure.

The plain seemed to explode about Telzey.

The explosion was in her mind. Tensions held too long, too hard, lashed back through her in seething confusion at a moment when too much needed to be done at once. Her physical vision went black; Robane's beast and the starlit slope vanished. She was sweeping through a topsy-turvy series of mental pictures and sensations. Rish's face appeared, wide-eyed, distorted with alarm, the aircar skimming almost at ground level along the top of a grassy rise, a wood suddenly ahead. *"Now!"* Telzey thought. Shouts, and the car swerved up again. Then a brief, thudding, jarring sensation underfoot . . .

That was done.

She swung about to Robane's waiting excitement, slipped through it into his mind. In an instant, her awareness poured through a net of subconscious psi channels that became half familiar as she touched them. Machine static clattered, too late to dislodge her. She was there. Robane, unsuspecting, looked out through his creature's eyes at her shape on the plain, hands locked hard on the instruments through which he lived, experienced, murdered.

In minutes, Telzey thought, in minutes, if she was alive minutes from now, she would have this mind—unaware, unresistant, wide open to her—under control. But she wasn't certain she could check the spook then through Robane. He had never attempted to hold it back moments away from its kill.

Vision cleared. She stood on the slope, tight tendrils of thought still linking her to every significant section of Robane's mind. The spook stared, hook-beak lifted above its gaping mouth, showing the thick, twisting tongue inside. Still upright, it began to move, seemed to glide across the ground towards her. One of its forelimbs came through the thick cloak of fur, four-fingered paw raised, slashing retractile claws extended, reaching out almost playfully.

Telzey backed slowly off from the advancing goblin shape. For an instant, another picture slipped through her thoughts . . . a blur of motion. She gave it no attention. There was nothing she could do there now.

The goblin dropped lightly to a crouch. Telzey saw it begin its spring as she turned and ran.

She heard the gurgling chuckle a few feet behind her, but no other sound. She ran headlong up the slope with all the strength she had left. In another world, on another level of existence, she moved quickly through Robane's mind, tracing out the control lines, gathering them in. But her thoughts were beginning to blur with fatigue. Bushy shrubbery dotted the slope ahead. She could see nothing else.

The spook passed her like something blown by the wind through the grass. It swung around before her, twenty feet ahead; and as she turned to the right, it was suddenly behind her again, coming up quickly, went by. Something nicked the back of her calf as it passed—a scratch, not much deeper than a dozen or so she'd picked up pushing through thorny growth tonight. But this hadn't been a thorn. She turned left, and it followed, herding her; dodged right, and it was there, going past. Its touch seemed the lightest flick again, but an instant later there was a hot, wet line of pain down her arm. She felt panic gather in her throat as it came up behind her once more. She stopped, turning to face it.

It stopped in the same instant, fifteen feet away, rose slowly to its full height, dark eyes staring, hooked beak open as if in silent laughter. Telzey watched it, gasping for breath. Streaks of foggy darkness seemed to float between them. Robane felt far away, beginning to slip from her reach. If she took another step, she thought, she would stumble and fall; then the thing would be on her.

The spook's head swung about. Its beak closed with a clack. The horn-ears went erect.

The white shape racing silently down the slope seemed unreal for a moment, something she imagined. She knew Chomir was approaching; she hadn't realized he was so near. She couldn't see the aircar's lights in the starblaze above, but it might be there. If they had followed the dog after he plunged out of the car, if they hadn't lost . . .

Chomir could circle Robane's beast, threaten it, perhaps draw it away from her, keep it occupied for minutes. She drove a command at him—another, quickly and anxiously, because he hadn't checked in the least; tried to slip into his mind and knew suddenly that Chomir, coming in silent fury, wasn't going to be checked or slowed or controlled by anything she did. The goblin uttered a monstrous, squalling scream of astounded rage as the strange white animal closed the last twenty yards between them; then it leaped aside with its horrid ease. Sick with dismay, Telzey saw the great forelimb flash from the cloak, strike with spread talons. The thudding blow caught Chomir, spun him around, sent him rolling over the ground. The spook sprang again to come down on its reckless assailant. But the dog was on his feet and away.

It was Chomir's first serious fight. But he came of generations of ancestors who had fought one another and other animals and armed men in the arenas of Askanam. Their battle cunning was stamped into his genes. He had made one mistake, a very nearly fatal one, in hurtling in at a dead run on an unknown opponent. Almost within seconds, it became apparent that he was making no further mistakes.

Telzey saw it through a shifting blur of exhaustion. As big a dog as Chomir was, the squalling goblin must weigh nearly five times as much, looked ten times larger with its fur-mane bristling about it. Its kind had been forest horrors to the early settlers. Its forelimbs were tipped with claws longer than her hands and the curved beak could shear through muscle and bone like a sword. Its uncanny speed . . .

Now somehow it seemed slow. As it sprang, slashing down, something white and low flowed around and about it with silent purpose. Telzey understood it then. The spook was a natural killer, developed by nature to deal efficiently with its prey. Chomir's breed were killers developed by man to deal efficiently with other killers.

He seemed locked to the beast for an instant, high on its shoulder, and she saw the wide, dark stain on his flank where the spook's talons had struck. He shook himself savagely. There was an ugly, snapping sound. The spook screeched like a huge bird. She saw the two animals locked together again, then the spook rolling over the ground, the white shape rolling with it, slipping away, slipping back. There was another screech. The spook rolled into a cluster of bushes. Chomir followed it in.

A white circle of light settled on the thrashing vegetation, shifted over to her. She looked up, saw Rish's car gliding down through the air, heard voices calling her name—

She followed her contact-thoughts back to Robane's mind, spread out through it, sensing at

once the frantic grip of his hands on the instrument controls. For Robane, time was running out quickly. He had been trying to turn his beast away from the dog, force it to destroy the human being who could expose him. He had been unable to do it. He was in terrible fear. But he could accomplish no more through the spook. She felt his suddent decision to break mind-contact with the animal to avoid the one experience he had always shunned—going down with another mind into the shuddering agony of death.

His right hand released the control it was clutching, reached towards a switch.

"No," Telzey said softly to the reaching hand.

It dropped to the instrument board. After a moment, it knotted, twisted about, began to lift again.

"No."

Now it lay still. She considered. There was time enough.

Robane believed he would die with the spook if he couldn't get away from it in time. She thought he might be right; she wouldn't want to be in his mind when it happened, if it came to that.

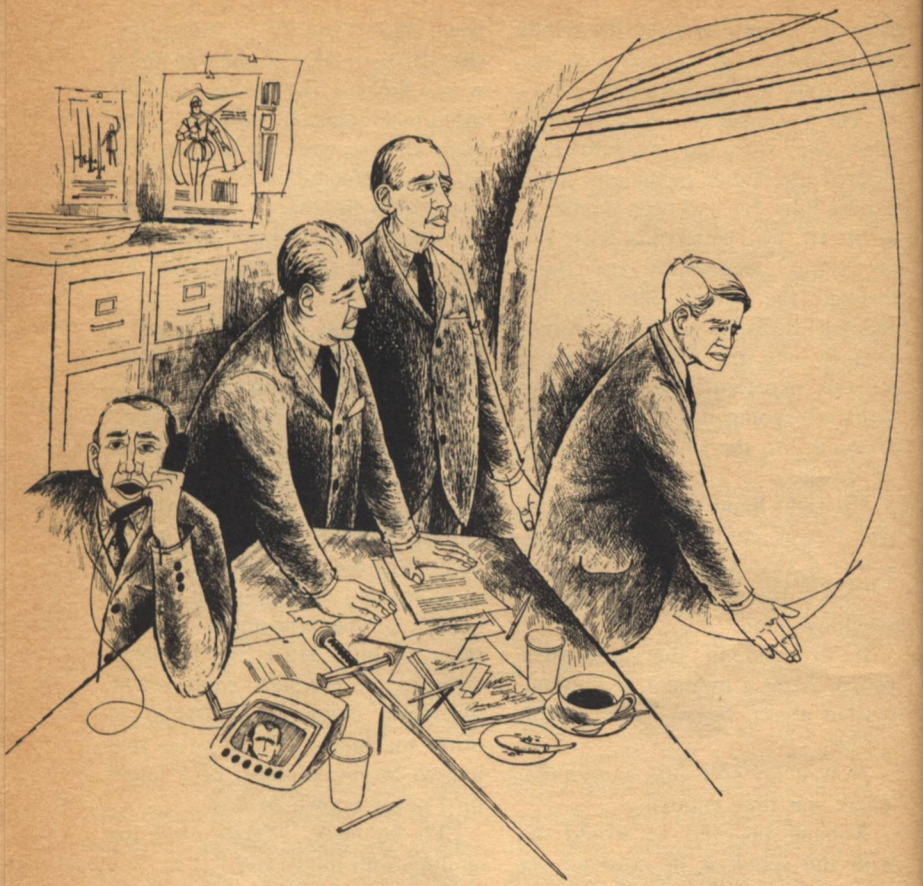
There were things she needed to learn from Robane. The identity of the gang which had supplied him with human game was one; she wanted that very much. Then she should look at the telepathic level of his mind in detail, find out what was wrong in there, why he hadn't been able to use it . . . some day, she might be able to do something with a half-psi like Gikkes. And the mind-machines—if Robane had been able to work with them, not really understanding what he did, she should be able to employ similar devices much more effectively. Yes, she had to carefully study his machines—

She released Robane's hand. It leaped to the switch, pulled it back. He gave a great gasp of relief.

For a moment, Telzey was busy. A needle of psi energy flicked knowingly up and down channels, touching here, there, shriveling, cutting, blocking . . . Then it was done. Robane, half his mind gone in an instant, unaware of it, smiled blankly at the instrument panel in front of him. He'd live on here, dimmed and harmless, cared for by machines, unwitting custodian of other machines, of memories that had to be investigated, of a talent he'd never known he had.

"I'll be back," Telzey told the smiling, dull thing, and left it.

She found herself standing on the slope. It had taken only a moment, after all. Dunker and Valia were running towards her. Rish had just climbed out of the aircar settled forty feet away, its search-beam fixed on the thicket where the spook's body jerked back and forth as Chomir, jaws locked on its crushed neck, shook the last vestiges of life from it with methodical fury. ■



fad

MACK REYNOLDS

One thing about fads is—
they aren't always easy to control
and you can't really tell just who started it!

Illustrated by Alan Moyler

Warren Dempsey Witherson's copter-cab flitted in to the landing ramp of the Doolittle Building and came to a gentle halt.

Witherson peered about, holding his pince-nez glasses to the upper bridge of his nose with the forefinger of his left hand. There was no one else on the ramp for the moment. He cleared his throat and tried the door of the auto-taxi. It, as usual though not always, Witherson had long since found, didn't budge.

He looked at the auto-meter and the sign beneath it which read, The *Slot Will Take Bills or Coins of Any Denomination and Return Your Correct Change.*

Warren Dempsey Witherson peered nervously to right and left again, dipped his thumb and first two fingers into a vest pocket and came forth with a dollar sized iron slug. He dropped it into the auto-meter slot and waited for his twenty cents change before opening the door and stepping out.

He set his conservatively cut coat, jiggled his malacca cane preliminary to getting under way, cleared his throat and headed for the building's entrance.

The Doolittle Building was ostentatiously swank and boasted a live receptionist.

Warren Dempsey Witherson bent a kindly eye upon her and fished about in his pockets absently until he came up with a business card. He pushed his glasses back and blinked at the card as though wondering where he had seen the like before. However, he handed it over.

Miss Evans was crisp, after inspecting it. "Yes, Dr. Witherson. Whom was it you wished to see?"

"Eh? Of course, my dear. Professor Doolittle."

Only the slightest flick indicated she was taken aback. "You have an appointment, doctor? Perhaps one of his secretaries—"

"Appointment? An appointment? Certainly not, my dear." Dr. Witherson beamed at her forgivingly.

Miss Evans placed the card on a scanner and said something softly into an efficient looking gadget which sat, small and inconspicuous to her right.

There was a slight flicker again just before she said, "Professor Doolittle will see you immediately, doctor. He is sending one of his secretaries down."

"Of course, my dear."

The secretary hurried from the lift and came trotting forward as though anxiously.

"Dr. Witherson? So sorry to have kept you waiting. Professor Doolittle sent me. I'm Walthers, doctor."

"Fine, my boy," Witherson beamed at him.

The lift unlike the others serving the building, was unlettered and Walthers used a key to open its door. It bore them to the highest

reaches of the edifice in the shortest of order.

Professor Doolittle came to his feet immediately and marched forward, a heavy paw outstretched, when the two entered his office which involved the better part of a quarter acre of floor space.

"That will be all, Walthers," he said. "And be sure I am undisturbed, no matter the circumstance."

Walthers was too well trained to frown. He jittered his feet a bit and said, "But, sir, the president of Perfect Soap—"

"Absolutely nothing, Walthers." Professor Doolittle puffed out apple-red cheeks to the point of resembling Santa Claus.

"Yes, sir." Walthers was gone.

The two old men stood back from each other and grinned inanely.

"The Funked Out Kid!"

"The Professor!"

"By George, it's been a long time, Kid."

"Since . . . let's see, Tangier. Last mark we copped a score from was that winchell in Tangier."

"The last I heard of you, Kid, somebody told me you failed to properly cool off a mark you had just taken on a Big Con down in Miami." The Professor turned and headed for an impressive, volume heavy bookcase, which turned out to be an imperial-size bar upon the flicking of a hand over an eye-button.

The Funked Out Kid followed him. "The fix had curdled and for a while I was warm, but I wasn't sneezed."

The Professor chuckled, "What will it be, Kid? You used to drink rye."

Drinks in hand, they found chairs and grinned at each other some more.

Both were in their sixties, but there resemblance ended. Mutt and Jeff came to mind, or perhaps those comedians of yesteryear, Abbott and Costello. The Funked Out Kid was thin and nervous, The Professor, short, bulky and jovial.

"Whatever happened to Big Charlie Greaves?"

"Or Smiley Weaver. I have not heard of either of them for donkey's years." The Professor looked down at the Funked Out Kid's business card which the receptionist had sent up to him via Walthers. He cackled amusement.

"You know, Kid, I almost had them send you packing. Then the name came back to me. Warren Dempsey Witherson. That is an imposing moniker for a grifter." He read from the card. "Ph.D., D.D., LL.D., Litt.D. That is rather laying it on thick, By George."

The Kid adjusted his pince-nez in dignity. "They're all the McCoy, Professor. I bought those doctorates from some of the top diploma mills in Tennessee."

The Professor, chuckling still,

made them fresh drinks, returned to his chair, shot a quick glance at his watch. "Well, Kid, it is a real pleasure to see you again. If you are in town for a while, we ought to get together some night for some reminiscences. Phone up a couple of curves, get a bit intoxicated, that sort of thing. Meanwhile, ah, how is the taw, Kid?"

The Funked Out Kid scowled at him, then, of a sudden broke into a whinny of humor which grew in volume.

It was the Professor's turn to scowl. "Confound it, what is the matter, Kid?"

The Kid let it run down, and pushed his glasses back to the high bridge of his nose with his left forefinger. He shook his head. "That's a laugh," he said. "How's the taw? Professor, did you think I came up here to shake you down for a score?"

"I would not put it that way, Kid. We're old-timers, By George. Comrades in arms. If your taw is in bad shape—" His attitude touched on the pompous.

The Kid grinned at him. "I'm here on business, Professor. What'd you think I've been doing these past fifteen years?"

"I would not know. But once a grifter, always a grifter, Kid."

Warren Dempsey Witherson let his eyes go about the overly swank office. "That doesn't seem to apply to you, Professor."

"Like Hades it doesn't, By George. Kid, I am at the top of the heap in the biggest con since some long departed grifter dreamed up religion and put ninety-five per cent of the human race on the sucker list. Motivational Research the double-domes call it. Why, Kid, there is not a manufacturer in Detroit who would decide how much silver trim to put on his mid-year model without consulting Doolittle Research. There is not a perfume house in Paris that would O.K. the pornography of their latest ad campaign without checking it out with my lads."

"I know," the Kid said, crossing thin legs. "That's why I'm here, Professor."

The Professor looked at him. "By George," he said. "You do look prosperous at that, Kid. Like you used to in the old days, just after copping a sizable score. What is your line now, the wire, the rag, the pay-off? Do you use a Big Store?"

The Funked Out Kid was whinnying again. "We call it public relations, Professor."

"Public relations! Kid, I just can not see you, particularly in that Ph.D. getup you are affecting, running around trying to get columnists to plug some TriD starlet just because you have got her to wear one of those new bottomless swim suits."

The Funked Out Kid shook his head and finished his drink. "Professor, I'm just not getting through

to you. Haven't you ever heard of Moppett, Hastings and Witherson, the top PR outfit on the coast?"

"You mean you're Witherson, By George?"

"As ever was. No conning columnists for this grifter, Professor. I deal only with top strategy, overall policy on the highest levels."

"That means, one assumes, you get somebody else to do the work."

"Of course. I tell you, in this field you couldn't knock the marks if you tried."

The Professor brought the bottle of prehistoric Maryland rye from the bar and set it on the coffee table between them.

"Kid, I fail to see where motivational research, interviews in depth, the applying of psychoanalytical techniques to market investigation and the various other jazz we deal with, could tie in with public relations."

Warren Dempsey Witherson leaned forward to launch his pitch. "It's a big operation, Professor. My PR outfit and your motivational research agency are just two elements. Also involved are a Tri-D studio, a couple of ad agencies, a couple of toy manufacturers, a TV network and a few more of the boys."

The Professor looked at him. "Big operation is correct."

"To make it brief, Professor, we're going to manufacture a fad. Remember, back when we were youngsters, the Davy Crockett fad? About 1955, it was. Started off as a movie. Before it was through there were being sold more than three hundred Davy Crockett products."

"I remember, By George. Coonskin hats, buckskin shirts, flintlock rifles, Davy Crockett records."

"Right," the Funked Out Kid beamed in satisfaction. "In all, it was estimated that a third of a billion dollars was spent on that fad."

The Professor hissed through his dentures.

"And they were amateurs," the Kid said. "They exploited it hit and miss. Fell into some of the best scores by pure accident. This time, Professor, we're going to milk our fad like pros." He took off his pince-nez glasses and shook them at the other.

"We got a new angle, Professor. Most of these fads are aimed at kids. Davy Crockett, the hula hoop, the Space Man fad. But kids don't have money to spend. Not the way grown up marks do. So this fad is going to be for adults."

"Go on," the Professor said. "Confound it, you've got me interested."

"That's all," Warren Dempsey Witherson beamed. "We're all set to go. We're going to settle on an adult hero, make a movie, write some songs, manufacture a fad like never before, and we're going to milk it all ways from Tuesday. The winchells won't know what hit them. And best of all, it's all legit."

Professor Doolittle stirred. "By

George, it is rather inspiring the way you propose it, Kid. Just who have you decided upon to feature as this adult hero?"

"We don't know."

The Professor looked at him.

"That's where you come in, Professor," the Funked Out Kid said reasonably.

The three were seated at the heavy mahogany table when the Professor bustled in, followed at a trot by Walthers. The three came to their feet until the roly poly older man took a chair at the table's end.

At first glance, possibly due to the similarity of their dress, they might have been taken for being from the same mold, but not at second. The heaviest set was wry and bitter of face; the youngest, unsure and unhappy; the thinnest, anxious to please but overly nervous.

The Professor had an informal word for each of his youthful brain trust. "Well, James, how is the ulcer? Are we still on milk?"

Jimmy Leath was still on milk.

"Theodore, how was your vacation? I understand Ruthie picked the spot for you."

Ted Biemiller grunted disgust. "What chance did I have? After that job we did for United Travels, a man's got as much chance of avoiding Afghanistan as he has of escaping taxes. Ruth threatened to leave me if we didn't spend the whole six weeks in Kabul." He glared at Jimmy. "It's all your fault."

Jimmy Leath shrugged. "It's the way the cards fell. Our depth interviews revealed the predominating motivating factor in travel today is snobbery. And the ultimate in travel status symbol is a spot no one else has been to. It was United Travels who picked Kabul, not me."

"Lads, lads," the Professor chuckled. He turned to the last of the trio. "Lester, has Irene convinced you as yet that you should resign from Doolittle Research and take a position a bit more, ah, worthy of your scholarly abilities?"

Les Frankle flushed. "Well, no sir, not yet."

The Professor smiled at him in fatherly condescension. "I can not quite see her point, lad. Where would your efforts gain greater remuneration than here?"

Les squirmed. "Well, it's not that, Professor Doolittle. Irene's a do-gooder . . . well, in the best sense of the word. She thinks the fact that the best brains in the country are going into such fields as advertising, sales promotion, motivational research to learn how best to con the consumer—"

The Professor's shaggy white eyebrows went up. "Con?"

Les said apologetically, "A bit of slang Irene used, sir. It's derived from *confidence man.*"

"Indeed. So our crusader, Irene, lacks sympathy for our affluent so-

ciety, eh? By George, where would you lads be, fresh out of the university, if there were not such organizations as Doolittle Research, ah, to take you in, and give you the opportunity to exercise your fledging abilities?"

Les Frankle lacked the ability to dissimulate. He said earnestly, "Well, that's her point, sir. She says that such organizations as this take the country's best brains, use them while they're still fresh and trained in the latest techniques, then in a few years discard them for somebody younger and fresher. And by that time the individual is either disillusioned"—he looked at Jimmy—"or has ulcers, or is an alcoholic, or some such."

"A discouraging picture, By George," the Professor chuckled. "However, I suppose we should get to business, lads."

He turned to Jimmy Leath. "So what have our depth interviews revealed in the way of an adult hero around which we could build a fad to end all fads?"

The emaciated psychologist bunched his right hand into a fist and rubbed it across his stomach. "On the first level of conscious, rational thought they think in terms of the president, of some top business figure, especially one who's worked his own way up. If you take in the past they'll come up with Lincoln, Washington, possibly Jesus."

Ted Biemiller grunted. "That's on the rational level," he muttered. "What happens when we get down to the preconscious, the subconscious?"

Jimmy looked at him and nodded. "Now, that's another thing. They'll run everywhere from some Tri-D star, especially one who's hung on for a long time and always played sympathetic, masculine roles, to some military hero, ranging from Alexander to Custer."

The Professor was frowning, albeit benignly. "And when we get to the deepest levels of consciousness?"

Jimmy rubbed his stomach again and grimaced. "Billy the Kid, Wild Bill Hickok, Nero, the Marquis de Sade, Hitler . . ."

"Hitler!" Les Frankle ejaculated.

Jimmy nodded. "You'd be surprised how many can identify with someone who exercised absolute power."

The Professor said jovially, "Lads, lads, we are departing from reality. We need someone we can, ah, to use the idiom, hang a halo upon. A gunman or a great sadist of the past, I hardly think would do it."

Ted twisted in his chair and growled, "What about Wyatt Earp? He was a gun thrower but usually on the side of the law."

"Usually, but not always," Jimmy nodded. "I thought about him. A good muckraker would soon have our hero all dirtied up. Besides, he's old hat. He was on TV for years."

"How about Daniel Boone?" Ted grumbled.

"Too nearly like Davy Crockett. That Wild West That Was bit has been done too thoroughly," Jimmy said. "At long last it's on its way out."

"Amen," Les murmured.

The Professor looked at him a bit testily. "Possibly you are correct, Lester. But we have been weeks upon this, confound it. What is an alternative?"

Les said unhappily, "I thought of J. E. B. Stuart, the cavalry commander."

Jimmy said, "The military is always good. Half of the heroes our probes dug up were military. Lots of blood and guts."

The Professor said, "Lads, remember the qualifications I gave you. This fad is for adults, By George, not children. I submit that if we made a Confederate general our hero we could sell toy sabers to children, Confederate gray uniforms and slouch hats. But that would be about it. Lads, let us start thinking *big.*"

They sat in long silence.

The Professor looked at Les Frankle indulgently. "Well, Lester, where are these super-brains your good wife, Irene, complains that Doolittle Research is milking?"

Les colored and said unhappily, "Well, Irene had an idea."

"Irene! My dear Lester, I informed you of the high security nature of this project. By George, what would happen if the nature of the syndicate's campaign were to be revealed before we even got underway? The public must think this fad spontaneous, By George, or it will never take!"

Les said, "I discuss all my work with Irene, sir. You've got to remember that she's a psychologist, too. One of the best. Her work on—"

Jimmy said, soothing stomach pains with massage, "What'd *she* suggest? I still say some military figure."

"Her idea comes under that category—in a way," Les said. "Jeanne d'Arc."

"John Dark?" the Professor cackled. "Confound it, Lester, I have never even heard of the gentleman.". .

The three looked at him. Ted grunted as though appreciative of a humorous sally. Jimmy closed his eyes, as though his ulcer was on a campaign.

"Joan of Arc," Les said. He looked at Jimmy. "That gives you your military."

"A woman," Ted grumbled. "Not even a woman, a girl. I thought we were looking for a hero."

The Professor pursed plump lips. "Women spend some eighty per cent of the average family income. Tell us more, Lester."

Les said, "Well, Irene thinks that Joan has just about everything." He looked at Jimmy again. "The muckrakers wouldn't be able to dig up much about her. She was only nineteen and a virgin when they burned

her. There's a lot of sentimental pull in a martyr." He looked back at Professor Doolittle. "Irene says you could use her sword as a symbol."

"A symbol?"

"Irene says all big fads—or movements—have to have a symbol. Davy Crockett had the coonskin hat, the Nazis had their swastika. For that matter, the Mohammedans had their crescent and the Christians their cross."

The Professor said, "By George."

Ted growled, "What could you sell in the name of Joan of Arc?"

Warren Dempsey Witherson hacked his throat clear and said, "What could we sell, in the name of Joan of Arc?"

The Professor refreshed both their glasses. "Kid, you are not up on your history. She is a natural. She hasn't been done recently in the movies. Not for decades. We shall have to do a super-spectacular, in the Tri-D medium, this time. Some old playwright, Bernard Shaw, did a play on her. It is undoubtedly in the public domain now. We shall revive it on Broadway and send out three or four road shows to boot. Mark Twain wrote a biography of her, in fictional form. It is in the public domain. We shall issue it in a special deluxe limited edition, in regular hardcovers and finally in paperbacks. We shall line up a top dress house in Paris and start off a Joan of Arc style revival. It is about time women got something brand-new in the way of fashion. They can not think of anything else to reveal."

"There isn't anything else left to reveal," the Funked Out Kid told him. "They've revealed everything."

"We'll hide it again," the Professor explained. "The Demure Look. Pageboy hair-do. Heather perfume. Fleur-de-lis designs on everything from textiles to earrings."

"Flour de Lee?" the Kid said.

"It is kind of a design the old French kings used, according to one of my lads. That is just the beginning. Wait until I unleash all the boys. We shall start a Joan of Arc comic strip, of course. And Joan of Arc dolls for the tots. Then we will have to concoct some items for the Dauphin."

"The dauphin?" the Funked Out Kid said blankly.

"Jimmy Leath, one of my double-domed lads suggests we change history about a bit and make the French prince her boy friend. Then we shall be able to cop a few scores from the men, too."

"Can we do that?" the aged grifter said nervously.

"Don't be a winchell, Kid. They made a hero out of Davy Crockett, did they not? Did you ever read a biography of that character? We can make a lover out of Charles, or whatever his name was."

Warren Dempsey Witherson looked at his long-time friend in admiration. "Where'd you get all this background, Professor?"

Professor Doolittle was modest. "I had a secretary do up a brief from the Encyclopedia," he said. "I shall have it sent around to you."

"I guess I'll buy it, Professor," Witherson said finally. "I'll take the shuttle rocket out to Frisco in the morning. Get the boys to work. Anything special you can think of?"

"One thing. Have them line up every manufacturer in the country that is set up to turn out swords."

The Funked Out Kid blinked.

"Little decorative swords, scabbards and belts. A sword about two feet long. In every price range. From a few bucks up to bejeweled deals to go with evening wear. It is our symbol. Kind of a crusaderlike cross for a hilt and guard. You will have some boys in the ad outfits who will get the idea. We want to have the manufacturers all sewed up before the wisenheimers begin to jump on our bandwagon."

The conference table was crowded, the room thick with cigar smoke, Walthers was trotting back and forth to the bar.

A large tweedy type, a huge bent stem Kaywoodie in the side of his mouth, was saying, "We'll have to issue these on various price levels. Make it a status symbol, the amount you've blown on your Pilgrimage of Jeanne d'Arc game."

Somebody interrupted. "I don't like using them fancy foreign names. What's the matter with using her right name, Joan of Arc?"

Les Frankle, sitting to one side, said unhappily, "The only record we have of her signature, she signed her name *Jeanette*." He hadn't pitched his voice high enough to be heard.

A fat man in the gaudy clothing of the Coast, puffed cheeks and rumbled in agreement. "Ed's right. Using, like, French words and all that'd just antagonize folks back in the boondocks. Make her sound too high falutin'. Let's call her Joan of Arc."

The tweedy type closed his eyes momentarily, in pain, and said, "Why don't we do this? On the game sets peddling for only ten dollars, we'll call it the Joan of Arc Pilgrimage. But on the sets retailing for twenty-five and up, we'll use the Jeanne d'Arc name. The people with boodle enough to invest that amount in a game will get an added status symbol in the French."

The Professor, at table's end, had been beaming benignly at the discussion. Now he put in, "Gentlemen, we must remember in concocting this game to strike the correct intellectual level. We do not wish something as double-domed as *Scrabble*, that would eliminate too many potential customers. Nor anything as simple as *Parchesi*, that is for children and this is an adult fad."

Ted Biemiller, as silent thus far as Les Frankle, grumbled, "And nothing as crass as *Monopoly*. Remember, Joan is a saint. Very high moral tone, that sort of thing."

The tweedy type took his pipe from his mouth and said, "We have all that in mind. However, the Pilgrimage is strictly for adults, but Joan is taking on with the kids, too."

"Sure is," someone else muttered. "We flubbed on the mother and daughter Joan of Arc clothes sets. Way behind on orders."

"I suggest we bring out a simplified form of the game for children," the tweedy type said.

"For children and our simpler adults," Les Frankle said unhappily.

"Very well, By George," the Professor said. "So it is with the Pilgrimage game. Now, could our representative from United Travels report on the Joan of Arc Tours?"

The travel agent was crisp and needed no notes. "The tours should be expanded, or, perhaps, more than one be exploited, gentlemen. Originally, we had thought in terms of quick rocket trips across to France. A flight to Domremy in Lorraine, where the Maid was born. Then down to Orleans where she fought her most famous battle. Up to Rheims, where she crowned Charles the Seventh. Then to Rouen where she stood trial and was executed."

"By George, that sounds like quite a package," the Professor said approvingly. "What do the marks . . . that is, what do the ladies pay for such a jaunt?"

The representative from United Travels looked at him, thoughtfully. "Evidently, not as much as they are willing to pay, Professor. I think your research has underestimated some factors."

The Professor puffed out his cheeks as though incredulous, then glared at his three-man brain trust.

The travel agent said, "Our customers seem more interested in their subject than we had expected, from your reports. Our original idea was to hurry them about to the highlight spots in the Maid's career and then dump them in Paris for a week of shopping and entertainment. Instead, they're putting up a howl to see such places as the ruins of Chinon castle where she first met the Dauphin, the battlefields along the Loire where she led the French troops, Patay where she displayed her generalship and defeated the British, and Compiegne where the Burgundians captured her."

"By George," the Professor exclaimed.

"Besides that, they don't want to waste time in Paris, other than to take in some special lectures at the Sorbonne on the Maid."

"What's this *the Maid* stuff?" the fat man from California said. "Talking about Joan, aren't you?"

Les Frankle spoke up, loud enough to be heard this time. "Well, women belonging to the Jeanne d'Arc Clubs have taken to calling her The Maid of Orleans. Irene says it's an instinctive reaction toward the virgin principle which dominates—"

"Who's Irene?" the tweedy type wanted to know.

Les Frankle looked at him. "Irene's my wife," he said. "Dr. Irene Frankle." He shifted uncomfortably. "She's also national president of the Jeanne d'Arc Clubs."

"She is?" the Professor blurted. "No wonder we were not able to get a percentage of the dues from those clubs."

Somebody else said, "We worked that out two weeks ago. It'd be too obvious if our syndicate tried to get in on spontaneously organized clubs. Too bad, though. Man, they've swept the nation!"

The Professor looked at Les accusingly. "You failed to inform me of Irene's membership, not to speak of her presidency, By George."

"Well," Les said doggedly, "you know how Irene is, sir. She's got a regular phobia about joining all these women's do-gooder outfits and all. She believes that organizations like this syndicate"—he flushed and nodded around unhappily to the table as a whole—"are well, destroying the nation."

The tweedy type blurted, "Just what do you mean by that, young man!"

Les looked at him apologetically. "Well, that's what Irene says, sir. Such organizations as Doolittle Research, the other MR outfits and the ad agencies manipulate human motivations and desires and develop a need for products with which the public has previously been unfamiliar, perhaps even undesirous of purchasing. She thinks that's ultimately turning the country into a nation of idiots, besides wasting natural resources."

The fat man was on his feet, blustering. "See here! I didn't come to this conference to be insulted." He glared at Professor Doolittle. "Who is this young fool, Professor?"

Doolittle came to his own feet, and lifted his chubby paws placatingly. "Gentlemen, gentlemen, please." He smiled benignly at Les Frankle, then returned to his confreres seated at the table.

"You gentlemen are, ah, pragmatic businessmen. My lad, Les, here, is a highly trained double—that is, psychologist from one of the nation's very top universities. His field is mass behavior, gentlemen, and, By George, he knows it. In discussing mass behavior, gentlemen, you draw on Durkheim in sociology, Korzybski in semantics, Whitehead in symbolic logic—I could go on. How many of you are acquainted with the works of these, ah, to use the idiom, crystal gazers? Gentlemen, if the past couple of decades has taught the businessman anything, it is that we need more whiskers . . . ah, that is, professors . . . not fewer. My lads here, Lester, James and Theodore, are top men in their fields, as you are in yours. We need them." He chuckled as though at a sally. "And they need the money we pay them."

He said indulgently, "And now

shall we have a report from our publisher? Undoubtedly, you gentlemen are already aware that our biography of Joan is still at the top of the nonfiction best sellers, and two of our novels on her are pushing second and fourth places. Now, this series of children's books—"

"Doublets and hose," the Funked Out Kid said blankly. "Pseudo-mail. What is pseudo-mail?" He pushed his pince-nez glasses back onto the bridge of his nose with his left forefinger and stared at Ted Biemiller.

"Pseudo-mail is a new type of sweater we've brought out for men. It's practically the only thing selling now in sweaters. The industry is in a tizzy."

The Funked Out Kid was still blank. "But what is it?"

"Pseudo-mail is a form of weave that makes the sweater look like mail." Neither of the two older men had yet reacted, so he grunted and added, "Mail was the predominant type of armor used in the days of Jeanne d'Arc."

"Oh," Warren Dempsey Witherson beamed. "And we're to publicize it, eh? My boy, from what you say, it doesn't need much publicizing."

"No, sir. It seems to have swept the country, whether men want it or not. Our research shows that women, ultimately, buy, or influence to the decisive point, the buying of approximately eighty-five per cent of male clothing."

"Well, how about these tin shirts the women are wearing?"

Ted ran a hand back through his hair in irritation. "Well, that's another thing. We didn't start that. It was spontaneous and other manufacturers got in on it before we could dominate the field."

"What's this, By George?" the Professor interjected, indignantly. He had been sitting there quietly.

"Corselets," Ted growled. "They're making them largely out of aluminum, but sometimes the lighter steel alloys. God knows, you've seen enough of the Joan of Arc illustrations we've put on the calendars and such. The popular idea is that in combat she wore a corselet. It's body armor, the breastplate and the back piece together."

The Funked Out Kid was staring at him. "You mean, some grifter not on our team has managed to con the marks into wearing—"

The Professor interrupted indulgently. "What the good doctor is saying, Theodore, is that it seems unlikely that a modern, style conscious woman would be seen in public in such a contraption."

"I don't know, sir," Ted growled. "The way they've done them up, they look rather cute. Besides, it wasn't until just lately they wore them in public, especially for evening wear. At first, it was just at their club meetings. You know, something like the Shriners in their Arab outfits, or the American Legion, or the Boy Scouts."

"Club meetings, eh?" the Professor said thoughtfully. He flicked his hand over an eye-button on his desk and said into empty air, "Walthers, send in Mr. Frankle."

While they waited, he said to Ted, "What's this about doublets and hose?"

Ted snorted. "That's another one that Jimmy Leath seemed to underestimate in his depth research. He figured there'd be a small market for Fifteenth Century costume for masquerades. What we didn't figure on is the pressure these women seem to be able to put to bear once they get on the Joan of Arc kick. That and the fact that men haven't had any really basic change in their clothes since the Civil War. We're still wearing the same basic coats, vests and long trousered pants Lincoln did."

Witherson hacked thoughtfully a few times and then said, "I'll put the boys to work on it. Maybe we can get the president to give his next press conference in this new outfit. Doublet and hose, eh?"

Ted winced but said, "It's no use our trying to pick it up now. Every men's clothing manufacturer in the country is switching. In a week or so, you'll be out of style wearing a suit."

Les Frankle, worried of expression, came in and said, "Yes, sir."

Doolittle picked up a report from his desk. "You wouldn't know anything about this complaint from the French vintner concern that handles the Jeanne d'Arc Lorraine wines, the Saint Joan Rheims champagne and Joan of Arc Three Star Cognac?"

"Well, no, sir," Les said. "Not much. I've been looking into this gold and diamond charm bracelet project with the top designers from Tiff—"

The Professor interrupted easily. "Before I forget, you had better drop that charm with Joan being burnt at the stake. The one with the chip rubies for fire. A bit on the bad taste side, lad. By George, this fad must be kept on the highest moral level. Is that not so, doctor?"

Dr. Witherson cleared his throat. "Our only motivation," he beamed.

"Now, these riots in Kansas by the members of the Jeanne d'Arc Clubs. This dashing into bars and liquor stores, breaking up bottles with those swords of theirs. Really, By George, what is up?"

"Well, sir, from what Irene says, the newspapers have the wrong idea. It's not a Carrie Nation sort of thing at all."

"Irene!" the Professor blurted.

"Who's Carrie Nation?" Ted Biemiller growled.

Les said, "A feminist back in the Victorian period. She was a temperance leader. Used to go into saloons with a hatchet and break up the place."

"You mean," the Professor demanded, "that these Kansas riots aren't of a temperance nature?"

Les said uncomfortably, "Well, no, sir. Not according to Irene. She says they're a spontaneous rebellion against those French wine companies using the Jeanne d'Arc name. It seems as though United Consumers reported on the Jeanne d'Arc wines and cognacs and found them unacceptable buys. Uh, I believe dishwater was the descriptive term."

"United Consumers!" the Professor blurted. "That consortium of subversives."

"Well, yes, sir," Les said, flushing. "It seem as though the clubs have a ruling that all members have to subscribe to the monthly United Consumers reports. Uh, Irene kind of rammed that requirement through."

Witherson was indignant. "This should be actionable. How could these Frog . . . ah, that is, French vintners possibly turn out a first-grade product when you consider the score we rake off before—"

"Ah, doctor," the Professor said placatingly. "We'll consider the matter in executive council, later."

Les said, "I think we're going to have trouble on that sports car deal, too. That air cushion model that looks vaguely like an armored horse, and has the head of the Maid on—"

"Trouble?" Witherson bleated. "Why the take we were to get on that . . ."

"Doctor, doctor," the Professor said. He turned a pompous eye on Les Frankle. "I suppose you have further inside information from Irene?"

"Well, in a way. She mentioned, kind of in passing, at dinner last night, that the clubs were going to boycott the car. Too big and heavy for average use, too expensive to run, and most likely the style will be obsolete within a year. Besides that, she says half the cost went into its silly decorations. According to Irene, it's time for the women of the country to put their feet down in regards to the kind of cars we're buying."

The Professor's eyes went to Ted Biemiller. "Well, Theodore, my lad, do you have any ideas? Both the French wine deal and the lineup with the Saint Joan sports car were sizable amounts."

Ted grunted sourly. He said, "We're putting out three different Jeanne d'Arc magazines now, one for upper lowers, one for the lower middles and one for the quality market. We might suggest to the concerns involved that they step up their advertising and at the same we'll do some free articles pushing their products."

The Professor pursed plump lips. "Now, Theodore, we begin to get somewhere."

Les was shaking his head, unhappily. "Club members have been infiltrating the magazine staffs, according to Irene. It seems that it can't be helped because nobody else is in a position to know what the readers want. Nobody else is up

enough on the Maid and her principles."

"Her what?" Witherson said blankly, pushing his glasses back.

"Her beliefs," Les said earnestly. "What she really stood for. Anyway, club members are largely editing the three magazines the syndicate launched and beginning next week they're not going to take any ads that aren't absolutely accurate in describing the product advertised. If Jeanne d'Arc wine tastes like dishwater, they just won't accept the ad." He added, lamely, "At least, that's what Irene said."

"Lester," the Professor said, his voice lacking its usual benificent quality. "Irene seems to have taken an inordinate interest in the affairs of our syndicate."

"Oh, *no*, sir," Les Frankle said hurriedly. "It's not that. You see, Professor Doolittle, Irene has had this interest in Joan, the Maid of Orleans, ever since she was a child. It's a regular phobia with her."

It was a full syndicate conference again. The room smoke-filled again. Walthers trotting about with drinks again. Professor Doolittle presiding again, his youthful three-man brain trust to one side, Dr. Warren Dempsey Witherson to his other.

The Professor kept his own report until the last, beaming benevolently at his colleagues as they reported on Tri-D movies and television, on radio programs and song records and tapes, on games for both adults and children, on textile sales, on swords, armor and the new medieval revival styles, on tours to France and publishing house sales of biographies, novels and comic books.

The Professor beamed through it all. Save for minor upsets, and intrusions of Johnnies-come-lately who were continually climbing aboard the Joan of Arc bandwagon, the reports were upbeat in nature.

When at last he came to his own feet, the hush was pronounced. It was not like the Professor to have kept himself from the limelight for so long. Ted Biemiller looked at Jimmy Leath from the side of his eyes, and grunted sourly. Jimmy rubbed his fist over his flat stomach. Les looked apprehensive—as usual.

The Professor dry-washed his hands, jovially.

"Well, gentlemen, we now come to the jackpot, By George. Until now, all has been peanuts, as idiom would have it."

"Five million net from our Jeanne d'Arc Pilgrimage games isn't exactly peanuts," the tweedy type muttered. He was in Donegals today, a curved Peterson shell briar in his mouth.

"Peanuts," the Professor cackled indulgently. "Gentlemen, what is the biggest single industry in this great and glorious nation of ours?"

"Automobiles," somebody growled. "We already got into that flop of a sports air-cushion car up in Detroit."

"A. T. and T.," the fat man from California said. Of them all, he looked the most ridiculous in doublet and hose. "The biggest single company is Telephone."

The Professor waggled a happy finger at him. "The biggest company, perhaps but not the biggest industry, By George. Gentlemen, the biggest industry in this great nation of ours is government. It hires more people, it spends more money, than any other six groups of industries combined."

The Funked Out Kid blinked at him. "You mean we're going to take over the government, Professor?" He hacked his throat clear, pushed his pince-nez glasses back on the bridge of his nose, nervously.

The Professor eyed him benignly. "Only in a manner of speaking, my dear Dr. Witherson."

He turned his eyes back to the others. "Gentlemn, I have been approached by representatives of both political parties. Both realize the position we occupy. Gentlemen, the way matters are shaping up, the elections this fall could be the nearest thing to a tie our glorious country has seen for many a decade. Yes, By George," he beamed, "if we should stand idly by and not, ah, perform our duty, the election could well be a tie."

The Funked Out Kid cleared his throat again. "Our duty?"

The Professor's voice was gentle. "The only term, my dear doctor. To arrive at a decision on just who to support, and then, ah, throw the full resources of the Joan of Arc, ah, movement, into the balance."

The tweedy type said, "What decision? Who offered the most?"

"We are still dickering," the Professor told him.

Ted Biemiller growled, "Sir, are we going to be able to deliver the vote of the Joan of Arc fans? That's the question."

The Professor turned on him, kindly. "Theodore, my lad, that is where our syndicate comes in. In putting over this fad of ours, and enriching ourselves in the process, we have also built up the strongest team in the fields of motivational research, advertising, psychology applied to sales research, mass behaviorism and related subjects that this great nation has ever seen. By George, it is most inspiring."

He waxed eloquent, flourishing a fat, freckled paw in emphasis. "Gentlemen, some fifty percent of the women voters of America are presently influenced by the Joan of Arc fad. Of these, at least thirty millions are deeply involved. Given our organization backing *either* of the major political parties and we have the next election in the palm of our collective hand."

The fat man from California was beginning to get the message. "Why, why . . . it's the biggest thing since . . . since—"

"Since Didius bought the Roman Empire," Jimmy Leath murmured.

They broke into excited jabbering.

The tweedy type was saying thoughtfully, "We'll have to line up the star of our original Tri-D movie. Lots of the Joan fans identify her face with the original Joan. Then we'll have to line up the actors on TV and radio who portray Joan. Then we'll have to swing our magazines, even the comic books, over to our candidate."

"Who's that?" somebody said stupidly.

"Who knows, so far?" the Funked Out Kid said reasonably. "You heard the Professor, the dickering is still going on."

"We'll have to really probe this in depth," Jimmy was muttering, intrigued. "Cover the country like smog. Find out what all these dizzy dames want our candidate to consider the issues of the day. Control the widest blanket of polls, do the greatest number of depth interviews ever seen. Given the Joan fans to begin with, as a lever, we can take this country like Grant—"

The Professor was beaming still. "Gentlemen," he said. "I can assure you, By George, that we are not about to sell our service for small return. When all the smoke has cleared, we here in this room will be in the catbird seat."

Les Frankle said unhappily, "Irene isn't going to like this."

Warren Dempsey Witherson's copter-cab floated gently onto the Doolittle Building's landing ramp and bumped to an easy halt.

Automatically, his eyes jittered right and left, while he fiddled in his doublet pocket for a slug. He found it, slipped it into the auto-meter slot, secured his change and opened the cab door.

There were half a dozen pickets, women in shiny corselets, their short swords buckled to their sides. Dr. Witherson ignored the placards they bore and scurried for the lobby, his pince-nez held in hand.

He had a key to the private elevator now and didn't bother to check with the receptionist.

On the top floor, devoted solely to the offices and private quarters of Professor Doolittle himself, he hurried toward the *sanctum sanctorum* of the motivational research head.

Walthers did no more than look up from his desk and say, "Good morning, doctor. The Professor is expecting you."

Dr. Witherson dithered something that wound up with *my boy* and was past.

The Professor, his calm for once vanished with the snows of yesteryear, was bellowing at his three-man brain trust.

"The police," he was yelling. "How about the police? A mob can't just storm a TV station and demolish it!"

Ted Biemiller, who sat at the Professor's desk, a phone held to one ear, said, "Professor, it's a dif-

ficult situation. For one thing, this mob isn't a bunch of juvenile delinquents. Some of it's composed of the biggest names in the Blue Book. Besides that, they're all armed with their swords." His eyes went ceilingwards. "I thought those swords were supposed to be decorative, that they weren't meant to take a point or an edge. They seem to be able to chop up doors and furniture with them like they were machetes."

"They *were* only decorative to begin with!" the Professor roared.

Les Frankle said unhappily, "Well, Irene didn't think that was practical so—"

"Irene!" the Professor roared. "Don't ever mention that woman again, Frankle!"

"Yes, sir."

Dr. Witherson, his eyes popping, blatted at Jimmy Leath, "What's happened?"

"Nothing," Jimmy said. "The country's gone batty, is all. It's a revolution."

"A revolution!" Witherson spun on the Professor. "I mighta known it. We haven't been cooling off these marks the way we shoulda!"

"Shut up, Kid," the Professor roared. "Confound it, you never were any good in the clutch."

Les said mildly, "It's not a revolution . . . exactly. Irene says—"

The Professor scowled blood and destruction at him.

Les flushed and said, "That is, what's really happening is that it's been a long time since women have got up on their high horse about something. It's been almost a century since the temperance movement. And women's suffrage, of course, all came about, so there's been no more suffragettes for as long as anybody can remember."

Jimmy was frowning. "Those that had a cause complex could always go into regular politics."

Les said, "Well, yes, but according to Ire . . . that is, women have never got very far in ordinary politics. They, uh, haven't been able to understand them very well—at least, up until now."

Ted Biemiller, still at the phone, growled. "Neither have men."

The Professor glared at him. "This is no time for levity, Theodore." He spun back to Les. "Go on, confound it. What's happened? You're supposed to be our mass behavior expert."

Les said doggedly, "Well, sir, it was something women could understand. Something they could get riled up about. Being beaten over the head with sales propaganda that had them scrapping their last year's refrigerator because it was white instead of pink. Or changing their perfectly acceptable brand of soap for something twice as expensive, because it was a status symbol to use a new brand containing super-lanolin. When you hit a woman in the pocketbook, you hit her where it counts."

"SO!" the Professor bellowed.

"Well, sir, all they needed was a banner under which to unite."

"You mean the Joan of Arc fad!"

"Well, yes, sir. You see, the original Joan was a reformer. Well, more than that. An actual rebel, according to— Well, anyway, she was a nonconformist and revolted against society as she found it. Well, sir, your syndicate made her the country's ideal. And once the women really got involved in her image, they wanted to, uh, emulate her. So they had to look around for something to rebel against, sir."

Dr. Warren Dempsey Witherson, who had been taking in only about half of this, spending most of his time and attention at the window, whined, "What's that big crowd gathering down there?"

"Shut up, Kid," the Professor growled. "I got to think."

Jimmy Leath said reasonably, "All the thinking has been done."

The Professor, his rage ebbing up again, pointed a shaking finger at him, then spun and leveled it at Les and Ted. "You three. You sold us out. You could have figured this through, eight months ago. You're fired, understand!"

"Well, yes, sir," Les nodded unhappily. "We kind of figured we would be. As a matter of fact, the Saint Joan Democratic-Republicans Party has approached us. It looks as though we'll be taking a job with them."

"The what!"

The Professor's rage broke. His hands came up, palms upward. "Lads," he said, "How could you do it? You were my team."

Ted ran his hand through his hair, uncomfortably. "Not exactly, sir. Like you've said, over and over, you just hired our brains. There wasn't anything ever said about loyalty. When Les first brought up the suggestion about using Joan of Arc as our heroine, we could have given it a whirl, given it a trial run, compiled some sample depth interviews, put it on the computer. In fact, any one of us three probably could have pretty well guessed what was going to happen.

"Then *why*, why lads, didn't you warn me!"

Jimmy said, as unhappy as his colleague. "Well, it was rather fascinating, the whole thing. You see, you kept talking about the money you paid us and how you were buying our brains, but the fact was all three of us were more interested in observing the working mechanics of your organization, than anything else. Fascinating, sir. Absolutely. I'm no engineer, but I continually get a picture of an enormous machine slipping its clutch, or belt, or however they say it, and going wild."

Witherson whimpered, "Professor, they're beginning to stream into the building. They're waving swords!"

Les walked over to the window beside him and peered down.

"There's Irene," he said, shaking his head. "Out in front."

Witherson whirled and caught the Professor's doublet sleeve. "Listen, we gotta get out of here. We're warm! You must have some back way, if I know you, Professor. It's your building, you had it built."

The Professor shook him off.

He said to his ex-brain trust, pleadingly, "Listen, lads, By George. There must be some angle. Some way of saving this situation."

Les was shaking his head earnestly. "Well, I don't think so, sir. Jimmy and Ted and I put it on the computers last night."

The Professor, now beginning to allow the Funked Out Kid to pull him toward the door, demanded, "Well, how did they ever get rid of that original Saint Joan of—" Then he stopped and his eyes narrowed. "They burnt her at the stake, didn't they?"

Les nodded, and spoke above the roar that suddenly was coming from the outer offices. "Yes, sir. They had to do that to shut her up, sir. But sir, well, I don't think it'd be so easy to burn Irene."

The Professor and the Funked Out Kid had made it down the secret elevator, out the back, and into a copter-cab.

Even as the Professor dialed a destination, with a shaking hand the Kid was whining. "On the lam again, after all these years."

"Don't be silly, Kid," the Professor said, with shaky joviality. "We've got enough of a taw stashed away to live happily ever after over in Spain or Switzerland. I've had it all planned for years. A hideout apartment here in town where we can disguise ourselves. A vehicle to take us to the Canadian border. Lots of funds in a safe deposit box to grease our way. We're as safe as in our mother's arms, Kid. Remember, the fuzz isn't after us, just a bunch of hysterical dames. It was all legit, so far as John Law's concerned."

They pulled up before an imposing edifice.

"What's this?" the Kid whined apprehensively.

"Bank. My safe deposit box. Let's hurry, Kid."

The Funked Out Kid fumbled for a coin, stuck it into the copter-cab's slot and reached for the door handle.

It was then that the cab's lights began flicking red, a siren began to ululate from its hood.

The Funked Out Kid wrenched at the door, which held tight.

And a voice from the cab speaker said, "You are under arrest for utilizing other than legal tender, and face a five-year imprisonment for counterfeiting. This is a police decoy cab of the Bureau of Transportation. You will remain seated until an officer of the law has arrived."

The Professor turned a beady eye on the Funked Out Kid.

"By *George*," he said. ■

NO THRONE OF HIS OWN

The unsophisticated, nontechnological natives of the planet had held off a space fleet with weapons too potent to attack. And, now landing had been achieved, they were driving the Space Force nuts. Because there wasn't a weapon or the potential of a weapon on the planet!

LAWRENCE A. PERKINS

Illustrated by Kelly Freas



Samuel T. Aylinger, Private Third Class, 81st Tellurian Expeditionary Corps, shuddered and closed his unfocused eyes, one at a time, with careful attention. He was remotely surprised to discover that there were only two. If only he could close a few more eyes, perhaps that pacing tiger in his head wouldn't whirl so alarmingly.

And his hand was so tired! Cautiously he opened his nearest eye and peeped. Ah, of course—he was still holding the contact plug. Sure, he was supposed to read the plug's stock number and punch it into the verifier. Good old stockpiling servo! It sensed the correct stock number in a microsecond and then waited for you to pat it on the verifier.

Sam opened the other eye and tried valiantly to read the number. Let's see, now—was that first character a 3, an 8, or a B? (*Whoosh!* went the tiger in his head again, except that tigers seldom spiral upward.) "Hell," Sam groused, "the servo knows it anyhow," and began punching at random. With a sigh he prodded the activator key.

Nothing happened. There was not the faintest sign that Sam was about to hit the jackpot. He blinked at the plug again, and then at the verifier. "B is not to be, hah? Then three for me, said he!" Sam gabbled and began repunching. Leaning hard on the activator key, he belatedly remembered that he was holding the plug and tossed it into the hopper with the others.

There was a deep rumble, followed by a skeleton's symphony of relays and solenoids. Then things began to occur.

The stockpiling servos were almost completely automatic, and very nearly foolproof. Only a certain series of mistakes made in a certain sequence would make the system malfunction. Considering that Sam had been at work today for less than a quarter of an hour, he'd just done a remarkable job.

Normally the pneumolift rose with massive gentleness, its cams and contacts clicking rhythmically at every stage until it reached its preprogrammed level and the transverseres took over. But not now. Now, as all the lights in the building dimmed because of the power drain, it zoomed upward in ghastly silence except for a hair-raising moan of displaced air rising both in pitch and altitude.

Seconds later the pneumolift ended its mad flight in a wrenching cacophony of metal and plastic high up in the central chamber of the parts warehouse. Sam, both eyes wide open at last, stared up at the source of the noise and blanched to see a deadly cluster of bright steel contact plugs descending at him from the full height of the building.

As Sam sat petrified, watching them fall, something seemed to happen to the swooping swirls which had been going around in his head. If they had seemed like a

tiger pacing in a small cage before, now they gathered like a tiger preparing to spring. The sensation so overpowered Sam that he sat gawking, watching the plugs fall, when he might have thought of running. But there wouldn't have been any place to run to; the deadly little projectiles as they turned and sparkled were spreading into a shrapnel that would blanket the entire floor.

As the plugs spread they began to spang ringingly from the open girderwork of the spidering stock-piling stages. And when the cascade of plugs began to get so close that Sam could hear them whistling through the air, he threw up an arm in an instinctive gesture, willing them to stop.

And they did. They stopped, and the tiger in his head sprang.

Thoroughly terrified now, of the tiger as well as the plugs, Sam unhappily noted that the plugs directly above him slowed to a gentle halt first, and that the others then came to rest in a twinkling hemisphere about three meters from his head.

But hovering restlessly above his head they were almost as frightening as they'd been in free fall. He wanted them *down*, but not on top of him. And how had the tiger in his head ceased padding around and around to swoop, somehow, up at the plugs? What was going on, anyhow?

Inconsequently, he remembered that as a child, somewhere back on Tellus, he'd seen an ancient military weapon displayed together with a pyramid of the round black projectiles which it had fired. Instantly the plugs burst into nervous motion, like a swarm of mechanical gnats, to begin arraying themselves in front of the empty hopper.

In incredulous amazement, Sam straightened up from the bench to his full one point nine meters. His jaw sagged as he gaped at the clean planes of the plug pyramid. One plug, impossibly balanced at the apex, stared back at him with its blankly unexpressive contact pins.

The tiger was circling inside Sam's head again now, but more gently. Consecutive thought was possible, and the mists began to lift as Sam began remembering the previous evening. He was sure that he'd find out that it was all SecSerg Glynn's fault—everything always seemed to turn out to be SecSerg Glynn's fault.

The mists lifted higher. He'd gone, he now remembered, with his buddy Al last night to the r'chuanth, one of the few permanent structures built by the nomadic natives. It was something between a beer hall and a temple, apparently. Sam had gone along because, even if the head-shrinkers had psyched him so that he couldn't drink any more, it was still the best place to study the native language.

And sure, that was how it got to be SecSerg Glynn's fault. Sam had gotten himself squiffed on v'wep

because SecSerg Glynn had ridden him so hard. Squiffed, he'd staggered out of the r'chuanth and met that patriarch on his portable throne. Sam had found the strangely sinuous curves of the throne so literally irresistible that one thing had led to another, and the headshrinkers had given him the works.

So last night Al had talked him into going along to the r'chuanth again just to watch and listen. The natives, in spite of their startling proliferation of sensor stalks and handling claws, were constructed in such a manner that they used articles which humans could equitably call tables and chairs. Sam even found it possible to sit in them comfortably, although Al had a certain amount of difficulty in arranging his wiry little frame to fit the furniture.

A ceremonious individual had then approached him. Sam had never known whether to think of him—and even the "him" was a wild conjecture—as a priest or a waiter. Waiter was probably closer. Anyhow, he sold his wares on a cash basis—cash in this case being the metal strips which served as money.

Al had ordered an urn of v'wep, a circumstance which had promptly made Sam wonder whether his headshrinking would allow him even to sit and watch. Shuddering, he'd managed to convey the idea that he'd rather wait a while before ordering. Snapping a claw in the native equivalent of a nod, the waiter had withdrawn.

Sam was still cataloguing the patrons, wondering for the thousandth time why—and how—they'd held off a Tellurian expedition for nearly three standard weeks and then happily invited them to the r'chuanth after the first humans managed to fight through and land, when the waiter returned. Sam glanced at the ceramic urn, topped with the faintly greenish foam so characteristic of v'wep, and then quickly looked away.

He was still struggling with his viscera when the native at the next table had ordered. Allowing for inflectional endings, infixes, and the usual jumble of politeness particles, it sounded as though the native had asked for three servings/portions of zaq.

Sam had prided himself on his r'chuanth word and phrase list. With patience and the judicious use of certain Expeditionary supplies—Sam's job was in Supply, and Al had convinced him that the investigation was semiofficial—the two devoted linguists had gotten across the concept *alcoholic drink* and had been rewarded with a vocabulary that had taken several highly interesting weeks to check out.

But zaq? How had they missed that one?

Or, Sam mused, had they missed it? What if zaq were some mild stimulant like coffee, or some sort of plant juice that tied in with the temple aspect of the r'chuanth? That would have kept it out of their

research, and now it would be something that he could get past the artificial butterfly in his belly.

Deciding impulsively to give it a whirl, he'd signaled the waiter, mentally forming and rehearsing his order before speaking it. "For-to-me one serving/portion desiring-am of substance/entity (honorific) zaq if may-I-hope please (honorific) you," he carefully enunciated.

Natives had no eyebrows, but this one had given the distinct illusion of raising his. For a moment Sam had wondered anxiously if he'd missed an infix, or flubbed an inflection, or left out a necessary politeness particle. But then the native had snapped his claw and moved briskly away.

And that, Sam recalled as he eyed the impossible pyramid of plugs, was how he'd given zaq a whirl. Now it was giving him whirls as the tiger in his head padded around, and he suspected that he'd gotten squiffed beyond his wildest dreams in spite of the headshrinkers.

He remembered mistily that on his third shell he'd suddenly realized that he was so far from watching the natives that he hadn't even noticed when the three zaq drinkers at the next table had left. At the same time he'd noted that he was filled with an unsettlingly buoyant sensation of good will which made him suspect that he was having a particularly vivid dream.

That suspicion was still with him, reinforced by the renewed pacing of the tiger in his head. Had he topped his evening by trying to capture another portable throne? "Is zaq a portable?" he oracularly demanded of himself, meaning to inquire whether he could carry his drink. Or, as the next swoop in his protesting head again seemed to be lifting or stretching him, could this drink carry him? And would it?

Sam's meditations were interrupted by the appearance of SecSerg Glynn who—attracted by the dimming lights and the noise—opened the door of his office and took a single step out into the hall. Checking himself so sharply that his fat belly bounced, he stared at the geometrically arranged plugs.

Sam turned to face the section sergeant and immediately heard an alarming sound of shifting and rolling plugs behind him. Whirling quickly, he was just in time to see the dissolving pyramid freeze into the rounded heap which it had become, but thousands of individual plugs continued to skitter across the floor.

Carefully remembering that the plugs would stay piled, Sam faced SecSerg Glynn again.

To say that SecSerg Glynn had grasped the situation would be a vast overstatement. Not even a supply man, he had merely appropriated Sam's office here because it was more comfortable than his own hut. He did, however, seem to un-

derstand that the plugs heaped on the floor were misplaced. He also seemed to have noted that they appeared to be perversely animated.

SecSerg Glynn believed in action and noise, especially until he was able to decide what to do. His comments began luridly and rapidly increased in both color and tone.

Sam's head was still clearing, and he was almost able to think again except when the tiger took a sharp corner. It chillingly dawned on him that his wild punches on the verifier could easily mean a court-martial—as well as a statement of charges for the pneumolift and whatever else was broken. Those wrenching noises. . . And what had the zaq done to him besides turning his head into a tiger cage?

Sam realized that he could stand either the tiger or SecSerg Glynn with his bellowing, but both together were too much. Was the tiger gathering to spring again? A wild hope seized him—the plugs had stopped, had piled themselves, had rolled and stopped as his attention flicked away from them and back again. And now? If this is a dream, he assured himself, it's a corker.

Sam rolled off the servo bench with a wild yell. "Watch out, Sarge! Here they come! Call out the guard!" And with the cry the tiger plunged, and a bright stream of plugs squirted out of the pile to pelt SecSerg Glynn's blubber. A few plugs also lifted lazily to bounce gently from Sam's own person.

SecSerg Glynn threw up sausage-shaped arms to defend himself, but the area under attack was too immense. With a wild yell of "Battle stations, everybody! The natives are rising!" he fled to his office—the one that should have been Sam's. As Sam recalled that rankling injustice, a fresh volley of plugs ricocheted from the plastite door with remarkable violence.

Then silence descended. Sam shook his head experimentally. The tiger was gone. Thoughtfully he concentrated his entire attention on a gleaming plug which had fallen near his feet. It rolled one lazy half turn and lay still. In disgust Sam stood up and kicked it.

Sam knew that the silence would not last long. He wondered again how much damages they could stick him for if he got beyond his depth—a thing which could easily happen. He decided in that moment to capitalize on the fact that with a very little effort he could look and act like a high-grade moron. In fact, some of his friends vowed that it took no effort at all.

Sam's hope was that nobody would be surprised to find a real moron holding his job and rank. In a Military that had expanded beyond the wildest dreams of Tellus in the planet-bound ages, promotions were automatic until a man goofed. There were enough grades to make it work—just in privates there were seven steps—and the theory was that time would tell be-

fore a man collected enough rank to matter.

Sam was wondering how long anybody would remember that he was officially a half-wit when the the first floater load of guards arrived, thermal blasters at the ready. SecSerg Glynn, hearing them arrive safely, popped his pale round face through a cautiously opened slit and then boldly paraded forth to take charge.

At another time Sam would have been infuriated. Now he was glad to let SecSerg Glynn have all the attention. Sam stood discreetly out of the way and allowed SecSerg Glynn in full cry to run the guards hallooing back and forth for an hour, during which they punched and poked at the servo until Sam began to hope that nobody could tell where his poking had ended and theirs begun.

Then three hard-faced field security men, their uniforms bare of insignia of rank, appeared and firmly took charge. One of them took SecSerg Glynn in tow, all of his chins flapping in unison; and one rounded up the milling guards, who were already beginning to look fearfully at shadowed angles of girderwork above them. The third man sat down on the servo bench with Sam and began what proved to be the first in a nightmare series of interviews and interrogations.

Sam kept his story simple and stuck to it, making sure that he seemed remarkably simple himself. His scarecrow face had saved him before. He had been innocently stocking away the first consignment on deck, he insisted, when the keys of the verifier had begun punching themselves.

The runaway pneumolift had then sprayed out the most peculiar bunch of plugs he had ever seen. What he really meant was that you might say they'd swarmed. Showing a few bruises he had picked up when he made his wild leap off the bench, he said that there and there and there was where they had hit him, or bit him, or whatever it was that they did.

Sam knew, of course, that this planet—known to humans as Boss 2,861-II and to the natives as Yrdn'tt—had been thoroughly searched for The Weapon, and that the 81st would stay here until it had been found and studied. What he had not known before was how spectacularly unsuccessful the search had been.

The Weapon had held off a full Tellurian expedition for nearly three standard weeks. There seemed to be only one Weapon, and the commander had finally gotten through by dividing his force into three parties spaced at one hundred twenty degrees around the planet. Two of them had gotten well clobbered, but Sam's had gotten through without a scratch.

And thereupon, incomprehensibly, the war was over. An hour

after landing the lead ship had been approached by a party of natives with trade goods. And, it would seem, no native anywhere had ever so much as heard of The Weapon.

Sam decided to use the same technique of innocent non-comprehension in his own predicament. He had a witness to one impossible event; he merely added another one to match it. Told with touching openness, his story remained the same as the field security man turned him over to a board of officers who passed him along to another board and another.

He had begun his day by trying to stockpile the first item on deck, but some of his verifier keys had just up and punched themselves. Now wasn't that a funny thing, he asked them. What he meant was that he knew that the verifier really knew the number, but it was supposed to let him do the punching, wasn't it?

Of course, he admitted, he could have begun the day with the sockets for the plugs instead of the plugs for the sockets, because it was all in the same shipment. He wondered out loud if the keys would have punched themselves like that for sockets, or maybe . . .

He let them get him back on the subject. Yeah, those plugs had swarmed right down at him just like a bunch of bees, except how was a plug to know how bees swarm? What he meant was that a plug was one thing and a bee was another thing, and he was blessed if he could see how a plug could get itself mixed up with a bee, even if this was a foreign planet and all like that. Why . . .

Sam knew that he probably wouldn't have had a chance of getting away with it except for the fact that SecSerg Glynn could be relied on to confirm the swarming plug story and add his own embellishments about hidden natives and uprisings and spies. Occasionally Sam wondered which of them was giving the best performance.

Sam, however, was kept separated from SecSerg Glynn and from the other men. After the first day of grilling he was given temporary quarters in a BOQ. Unable to sleep well in the dubious splendor, he had wondered whether the two burly guards at the door were there to keep him in or SecSerg Glynn's sinister natives out.

He was much relieved on the following day after his sixth session—or was it the seventh—to find that at least for the time being they were through asking him the same questions. Not only was he released; the second captain who had headed the last quiz group gave him a hoverer ride back to the barracks.

Sam dismounted and saluted. The second captain leaned out of the hoverer after returning the salute. "Take care, Private Aylinger," admonished the captain. "Be very cautious until we learn what the

natives are up to. And keep this whole affair secret, now! Not a word to the other men that anything out of the ordinary is afoot."

"Yessir," agreed Sam, saluting again as he gazed thoughtfully over the hoverer to the barracks where a hundred men were rubbernecking out of the windows.

Al was in the front rank of the little group waiting for Sam as he dilated the entry port to the barracks and stepped through. "Hey, Sam!" he demanded.

During the past two days Sam's questioners—obviously influenced by what SecSerg Glynn had been telling them—had planted in Sam's subconscious the remote notion that there really might be a few inimical natives lurking somewhere. Furthermore, it did seem wise to obey the order about secrecy for at least an hour or so. "Hi," he responded.

"Hey, buddy!" accosted Al, advancing, taking Sam by the elbow, and neatly leading him away from the other men. "It's me, Al! Hey, buddy, are you all right?"

Sam still hoped that he could be discreet. "Been to chow yet?" he parried.

Al shifted gears with an audible grunt. "Not yet. Chow just started."

"Then let's eat, huh?" And resisting any urging to say anything more communicative than "pass the salt," he let the chow line carry him to a place setting where he punched the servo for his meal and began stolidly eating.

There was an unnatural silence within earshot of Sam along the servotable. The men at the fringe of the zone frequently leaned forward, their ears almost visibly flapping. However, as Sam continued to chew rhythmically without speaking, most of the men slowly lost interest.

A baby-faced private Fifth Class, not resigned to disappointment, turned to his neighbor. "Hear there was something doing at the main warehouse, couple of days ago," he bleated. "You hear about it?"

"Wmph," replied the disapproving neighbor around a mouthful of radio-broiled algaesteak.

Unfazed the private turned brightly to Sam. "Maybe you heard something about it. I heard—"

Sam whirled on the man. Seven interrogations—or was it only six—were plenty. He wondered fleetingly how many years it would take him to pay for the pneumolift on a Seventh's pay. "Friend," he snarled, "you have any questions, I suggest you put in a request to the Command Provost. Pass the ketchup."

Custom in the 81st was for the men to stroll away to the various clubs and rec halls, or wherever they wished to spend a free hour or two, after evening chow. The humans had adjusted local time to the 27.3 standard hours of Yrdn'tt's rotation, so that evening really was evening.

Sam's remark to the private seem-

ed to have been passed on; at least, nobody else made an open attempt to assuage his witless curiosity. As Sam and Al left the chow hall their path was at an angle to the traffic flow. Not many men spent much time with the natives during off-duty time, and tonight Al and Sam seemed to be the only ones headed for the perimeter checkpoint.

Sam wondered fleetingly if it was a good idea to leave the compound. He decided as quickly that he could always insist that no native ever did the obvious, and, therefore, that he was as safe away from the compound as he was in it.

There didn't even seem to be a native word for "village," but there was a network of paths in the rocky area around the 81st's compound. Sam and Al walked past the perimeter checkpoint, slightly startled to see that there actually was a guard there, and on into the network where they could talk in private. Al shrewdly kept silent, waiting for Sam to begin.

Sam started more or less at the middle: the incident of the mispunched code, and then he told his story in snatches. Deviously he took Al back in time to his awakening with the swooping tiger in his head, and before that to his gradual phase-out at the r'chuanth; then forward to the animated plugs and the six—or seven—interrogations.

Except for monosyllabic proddings, Al remained silent until it was obvious that Sam had talked himself out. Then, snuffing out his halfsmoked cigarette by way of punctuation, he puffed a fresh one alight. "Umph," he lipped around it. "Let's head straight for the r'chuanth right now."

Sam hesitated in his stride. "Right now?"

"Sure. Got to get you some more zaq to check this thing out."

Sam stopped in his tracks. "Al, you're chuffing me! If that stuff's what it was that put the swirls inside my head, I never want to see any more for the rest of my life at the very least! Hell, Al, that stuff must be worse than v'wep, worse even than . . ."

Al gently but firmly took Sam by the elbow and began moving him down the path again, between two large boulders. "Look, Sam, doesn't it mean anything to you that you could, ah, think those plugs down into a nice neat pile and then out again at SecSerg Glynn?"

"Yeah, I guess it all fits together, all right, except that anything that made me do a crazy thing like punching a wrong stock number into the servo and then—"

"Sure, Sam, sure," agreed Al reasonably, increasing their tempo. "The big thing is that this time you understand about it. It won't get you by surprise, like last time. Another thing, you needn't jug down six jolts of the stuff like you did then."

Sam stopped again. "Six?"

"Six. I paid, you know. Last round you asked for a double, and

for a minute I didn't think that the native guy was going to give it to you. But he did; he sort of gathered his whiskers together like they do sometimes, like he was giving you the old close whiff, and then he snapped his claw and took off."

Under the gentle but insistent urging at his elbow Sam began walking again. "I don't know, Al," he quavered. "Besides, now that I know that the stuff does have alkick in it after all, you know that I've got that block that the headshrinkers put into me, and—"

"Sam, does alkick make you think steel plugs at people?"

"Well, no. But—"

"Does a bad morning-after go away in the bat of an eye when you get through thinking plugs at people? Or after thinking anything else at them either, for that matter?"

"Well, no, Al. But—"

"Look, Sam, whatever that stuff is, alkick's what it's not. Look at it this way—when you asked for it, the guy gave you the whiff, and then later when you asked for more he gave you the close whiff. Did that ever happen when you asked for v'wep or any of the other stuff? Or did you ever hear a native ask for it before that night?"

"Well, no, Al. But I—"

"Look, Sam, will you lay off buting me for a minute? You know what I think that stuff is? It's some kind of psychic amplifier. Back home on Tellus they—"

"Psychic what?" Sam muttered.

"Amplifier, I said. They've been working on them ever since somebody began wondering why peyotl made people see visions. They've got them now that one can make you remember what your first word was, and another one lets you do integral calculus in your head."

"Well, that figures," admitted Sam thoughtfully. "But what's that got to do with thinking plugs at people?"

"Sam, there always have been people that just naturally could do that sort of thing. I forget the fancy name for it, but there's an official report in the records of the old United States Navy about a guy who conned a battleship through a typhoon with a steering engine that later turned out to have been busted at the time."

"Well, yeah, I guess I see what you're getting at, but—"

"Look, Sam, I just explained it to you, didn't I? I know you won't let us down, Sam. I'd be willing to try the stuff out, but we already know that it works for you. What if I don't have that . . . that . . . what is the name of it, anyhow? Telekinesis, that's the word."

Sam began to waver. "Look, Al, I'm not sure they're through asking me silly questions. If I get stuck with a statement of charges for that pneumolift and the other stuff, the headshrinkers won't need their block—I'll be on bread and

water for life. As long as I've got a clear head I'm not too worried, but that zaq—"

This time it was Al's turn to hesitate. "Look, Sam, we're buddies, aren't we? If three jolts . . . ah, three shells of zaq don't do anything to you, why then, so what? And if they do, then you'll have a couple of extra answers if they do start asking questions.

"I still haven't got an angle figured out, but if we could make them think somehow that at last we've discovered The Weapon—" Al lurched to a seat on a low boulder just off the trail. Sam, thrown off balance by Al's hand on his elbow, flailed his skinny arms to keep from falling.

"Sam," asked Al very softly, "do you suppose that zaq really could be The Weapon?"

"Huh? How could it be?"

Al moved slightly, so that a small portion of the boulder was free for Sam to sit beside him. "How could it be? You bounced those plugs off Glynn's upholstery, didn't you? On your very first try, without any help or instruction?"

"Well, yeah, I did."

"What do you think a bunch of experts could do if they got juiced up on zaq and then all worked together? Why, Sam, they could take this rock we're sitting on and pop it right into orbit. And away it goes, without any launching site, giving off no traces of any kind of energy. Then it gets near, say, to a Tellurian ship, and your adepts just think it apart."

"Think it apart?"

"Sure. I'm talking about adepts now. They just think about it going to pieces. And whammo! a nuclear explosion, out of a piece of rock that hadn't showed up on any kind of detector. They wouldn't need a rock this big; they could use a little hunk that wouldn't even make a radar trace."

Sam nudged unsuccessfully to get a little more seating space on the boulder. "If they could do that, why bother with a rock? Why not just think the ship apart to start with?"

"How should I know? What made them stop the war when we landed, just when anybody else would really pitch in harder? Who knows anything about the way they think?"

"But Al! We've been here half a standard year, almost, looking for The Weapon all the time, one way or another. We meet natives all the time, too. If zaq is The Weapon, then how come nobody—"

"Sure, sure, we've been looking. On duty looking for gantries, launching pads, nuclear labs, fuel plants, secret factories. Off duty looking for carved jewels, beads, mica-spangle cloth, or a jolt of v'wep." Al stood up; and Sam, who had been patiently inching over, nearly fell off the boulder.

Staggering to his feet, Sam clutched at a last straw. "You mean to tell me that these wandering,

stone-age natives know how to brew up some kind of mental amplifier that we don't know about yet on Tellus?"

"It was a stone-age people that discovered peyotl," argued Al as he reached in the dark for Sam's elbow. "Ever hear of a fire piston? Gadget invented by stone-age Tellurian Polynesians to set tinder on fire by the Diesel compression principle."

"Say, where'd you pick up all that stuff, Al?"

"Listening to a couple of doublebird colonel anthropologists arguing. One of them didn't want to admit that those metal strips the natives use are really money." He found the elbow and made contact with it. "Let's go. We've got to know what you can do when you've got four shells of zaq inside you and know what the stuff is."

That calculated moment arrived about one standard hour later. After the third one Sam felt the beginnings of the familiar up-spiraling in his head, and noticed that he could meditate on the career of Sec-Serg Glynn with no particular feeling of ill will.

Sam tossed down the contents of the fourth shell and then cautiously released it at his lips. Masking it with his hands, he brought it down to the table slowly and placed it in front of him with a gentle thud. Al goggled, and drained his own urn of v'wep with enthusiasm.

Al surrendered his roll of metal tape to have the proper length detached by the waiter, and presently they were in the Headquarters office where Al was assigned. Sam dreamily noted that Al had an unusual command of lockset combinations, and his swelling heart filled with admiration for his accomplished buddy.

The first basic experiment proved conclusively that Sam couldn't move Al's person or his own except by the traditional arms and legs method. He could, however, manipulate any visible article of Al's uniform as well as items in his pockets provided that Sam knew exactly what and where they were.

"Now we know why they didn't 'think' at our spacecraft," Al muttered. "Now let's move on to hardware."

Sam found that he could move any of the small objects exposed on the various desk tops with good accuracy once he got the hang of it. The vocotypers were tougher, and he set one of them down with a thump that alarmed both of them. Chairs were hard, too, and lifting a desk a meter from the floor and then letting it down with a thud left Sam exhausted and clear-headed. No more tiger.

After the desk, the hardest of Sam's thinking was barely enough to roll a pencil slowly across the top of a desk.

Al had flinched a little at the vocotypers and chairs as they rose

silently into the air, but he watched the pencil as though it were a viper. "I suspect that's residual, Sam," he gulped.

"Huh?"

"Residual. Your natural level of telekinesis, now that the amplification gave you the hang of it by making it easier. You know, there's still lots of stuff to be figured out." Al stood up slowly and thoughtfully. "Sam, let's not let anybody in on this yet." He waved away the protest that Sam was about to make. "What I mean is, *nobody*."

Al reached vacantly for the douse block to turn off the lights, a faraway look in his liquid black eyes. "Anybody asks what we did tonight, you say we went out and found a native who traded us an hour of language for a swatch of nylomar cloth. I did do that yesterday."

On their way back to the barracks Al outlined some points that he had picked up so that they could tell the same story. Sam hoped that the swatch had been small. He was about to ask Al if he was sure that he hadn't learned any more than that in a whole evening when Al cut off.

"Let's not talk after we get inside the barracks. And don't look me up until I look you up, after I get an angle figured out. Can't be too careful with this stuff. Besides, I don't want to see you get stuck for that pneumolift." He dilated the entry port before Sam could reply.

Sam's first waking thought next morning was to worry about the charges on that pneumolift if he got stuck with them. It was easy enough for Al to speak lightly about the charges. It wasn't Al who would be stuck with them. Sam's glum mood was further deepened by the little pool of silence around him at breakfast, and he reported to work with a certain amount of hesitation.

Surprisingly, the servos had been repaired. Well, not so surprising, really. It was marvelous what could be done with a few buckets of structo-plastic, a set of wafer-thin duratenso molds, and a few microminiature power units to get things going. Maybe those charges wouldn't be so bad after all.

But if his servos were back to normal, the same couldn't be said of SecSerg Glynn. Impossible before, he had worked his way up to being completely incredible. Sam began brooding all over again on the slings and arrows of the outrageous SecSerg Glynn.

Due to the fact that the work was mostly automated, his job should have been restricted to button-punching and screen-watching. Sam seldom should have seen the other members of his unit except at chow or in the barracks. In garrison, especially on a friendly planet, the military aspects of a unit like the 81st traditionally hovered at the vanishing point.

But for the past standard half

year SecSerg Glynn had been providing a noxious exception. In garrison, a section sergeant who hoped to make the big jump to Tenth lieutenant—the first rank that demanded proof of knowledge and ability—usually spent all of his ample spare time studying. If he was content with his status, he would develop some tranquil hobby like rock collecting or solidography.

But not the illustrious SecSerg Glynn, although he had a wonderful knack of finding regs somewhere to back up whatever he did. He had even found one to justify his assembly days, which nobody else seemed to have heard of.

SecSerg Glynn, all one hundred sixty kilograms of him, claimed to be keeping his section in battle readiness against a native uprising which he insisted could not be discounted. Sam grinned to himself in spite of his fury that SecSerg Glynn now had his rebellion, in however ghostly form. In fact, it was only SecSerg Glynn's official pronouncements which gave any substance to Sam's hypothetical saboteur.

SecSerg Glynn's readiness program had consisted mainly of insisting on strict military protocol, especially as it pertained to the section sergeant, and in holding endless drills and inspections in addition to his assembly days—one of which, Sam remembered with a sinking sensation, was scheduled for tomorrow.

The office nearest the stockpiling servo, which by rights should have been Sam's, had long ago been appropriated by SecSerg Glynn as a more suitable command post than the little hut intended for the section sergeant—the idea being that if the section sergeant really needed an office, he got it in the reshuffle when the unit went combat.

But taking his office had been only the beginning. SecSerg Glynn drew naturally on the supply people for his little errands—on Sam, usually, because Sam's duty station was right there outside the office door. Sam had lost count of his happy jaunts to carry a gig sheet and perform such essential duties as the measurement of bed rolls and the inspection of dust under bunks.

But today the central chamber of the parts warehouse was a madhouse. Whole squads went galloping out to assemble wildly unnecessary devices which other squads raced to disassemble an hour later. The same anti-hoverer degaussing field projector was assembled five times at five locations, at only one of which could it conceivably have scragged a hoverer.

And, of course, no native had ever been within fifteen meters of any hoverer, or been known to ride in any vehicle at all other than an occasional portable patriarchal throne.

Sam had expected the tumult to continue through the night. However, the alarms just happened to end precisely as the secure time

chime sounded. Bone-weary from a hundred footless errands and limping slightly from a blistered foot, he deactivated his servos. It had been a waste to turn them on in the first place; there hadn't been time to do any stockpiling at all.

The night would be too short for a proper rest, Sam groaned to himself. And tomorrow would be assembly day! In this happy state of anticipation he trudged to the chow hall. Only gradually did he realize that someone behind him was furtively trying to catch his attention.

"Hey, *Sam*!" a vibrant half-whisper reached him. "No, no, *don't* turn around. Keep on walking."

"Al?"

"Sure, sure, but just don't talk. Remember the rock we sat on that night? The one not in orbit? Meet me there in half an hour. No, *don't* turn around."

Sam wolfed his meal, dividing his mental effort equally between wondering why Al had suddenly become so conspiratorial and trying to imagine what new torment SecSerg Glynn had thought up for tomorrow. That stuff called "close order drill" that he had dug out of some musty old reg was still the worst, but by only a narrow margin.

The mood among the men was quiet tonight. The pool of silence around Sam had merged into the wider sullen sea. SecSerg Glynn's assembly days were not widely appreciated, and today's wild alarms had improved nobody's disposition.

Sam reached the rock ten minutes early in spite of the blister. Before he could sit down to wait, however, Al slipped out from behind a p'toarh bush, almost invisible in the faint starshine and atmospheric fluorescence. Yrdn'tt had no notable satellites.

"Thought you'd never get here!" breathed Al. "No, don't bother to apologize—just listen. Here!" In the dark Sam felt something cold, flat, and metallic thrust into his hands. "Don't tip it. Four shells of zaq inside."

"Wub bub bup!" stammered Sam, startled beyond speech.

"They won't give me any for myself," continued Al unperturbed, "and I had to promise to leave it in the shells until you use it. Don't put it into anything else except you, O.K.?"

"Wub bub but Al—?"

"Just leave everything to me. Sam, this is going to be one assembly day when that tub of lard'll have something better to do than watch everybody else sweat!"

"You don't mean—?"

"Now look, Sam. I told you I had it all figured out, didn't I? Here's what we do. You wait until the last minute and then use the stuff I just gave you. By the way, I want the shells back. So we assemble, and there's SecSerg Glynn up there on his little platform. You'd think it was a throne room."

Sam groaned. Each assembly day seemed worse than the last.

Not noticing, Al continued. "He already thinks that the wicked, evil natives are after him, and that somebody is spying for them. Pretty good fandang uproar we had today, wasn't it? He wanted to keep plenty of people near him all the time, and I gave him the idea that in the squash the spy might accidentally get stepped on."

The blister on Sam's foot gave a fresh throb. "You mean—?"

Al ignored him. "Everybody in the section is zigged because all this happened on the day before assembly day. Tomorrow, up there on that stupid platform, fatter than ever, he won't be able to help knowing how the men feel.

"What's he going to do when his clipboard jumps out of his hand and hangs just out of reach? Or his amplitrump; that would be even better. And what's he going to do when his hat slips over his eyes and won't come off. With all those zigged troops out there watching him up there on his platform, what's he going to do?"

The entertaining picture made Sam forget the blister and his various aches for a minute. But would he need four shells of zaq to tip a cap? "And then?" he wondered out loud.

"You let me worry about the 'what then.' I'll be there. I told you I had it all figured out, didn't I? That stuff still gives you the happies, doesn't it? You just let me worry about it, O.K.?"

Sam had to agree. After breakfast next morning he was one of the first men to strike out for the assembly point, after a brief stopover at his quarters for the four shells of zaq, which he drank as fast as he could.

He was already full of alarmingly expansive sentiment when he reached the stony field dominated by SecSerg Glynn's platform. He was pleased to see Al sharing the platform with the section sergeant as they talked earnestly. His good old buddy Al and the pleasingly plump—the forceful . . . Sam vaguely realized that four shells jugged down in a hurry must pack quite a jolt. Was that a tiger or an elephant in his head?

Up on the platform SecSerg Glynn nodded at Al and pointed. Following the gesture, Sam noted a little group of field security men, including the one who had grilled him, trying to look inconspicuous. That was difficult, as they were almost alone. Sam felt sympathetic and started to wave.

Sam drew a deep breath and tried to get hold of himself. Must remember never to toss down zaq that fast again. Wouldn't do to wave at the men; they were trying to be invisible. Not polite.

Sam reached again for a better grip on himself. The swooping and swishing in his head made it hard,

but he tried. He hoped that the section sergeant wouldn't mind too much having his necktie stuffed down his gullet. Well, he couldn't let down his good old buddy, good old Al.

Vaguely disappointed, Sam noticed that Al had left the platform and vanished into the disconsolate mass of troops milling around and steadily growing. Sam blinked; where had they all come from? They were still coming, and the stragglers broke into a trot when SecSerg Glynn picked up his amplitrump and yelled into it. The resulting bellow was deafening. The tiger-elephant flinched, squeezing Sam's brain.

"All right, you guys. Get the lead out. Everybody in formation in fifteen seconds." He ostentatiously stared at his watch as he drew breath for another yell.

Sam knew that he couldn't stand another roar like that. He was sure that SecSerg Glynn's voice would carry beautifully to the edge of the field with its own natural vigor. He dimly realized that he was a little ahead of schedule, but this couldn't be helped.

Gently he thought the amplitrump away from SecSerg Glynn's pudgy fingers and then dashed it as hard as he could to the platform. It spattered very nicely. He hoped that the flying pieces hadn't hurt the section sergeant very much.

SecSerg Glynn sprang into the air, striking the platform with an alarming *whump* as he came back down. As soon as his feet touched, he whirled completely around twice, although all the men were on the same side of the platform. Sudden silence washed through them, and they completed the final jostling of getting into formation faster than usual.

Then the still quivering Glynn found his voice and, as his double chins bobbed in cadence, proved that Sam had been right about the need for an amplitrump. "All right, you censored, obscenity, unprintable spy," he erupted. "I know all about you. We'll just make a public example of you right here, right now."

SecSerg Glynn leaned forward truculently toward the assembly. Sam decided that his vigorous, active section sergeant was waiting for something to happen. It would be a shame to keep him waiting. What had Al said? What'll he do when his hat slips over his eyes?

Obediently he began slipping SecSerg Glynn's cap gently forward over the moon-shaped face beneath it until the lunar eclipse was well in progress. He let it stop when the forward edge of the cap touched the tip of a nose which was rapidly shading from red to purple. Fat fingers fumbled at the brim of the cap ineffectually as the section sergeant performed an impromptu aboriginal dance.

The assembly watched in a hushed aura of silence. Then a few

nervous titters quickly swelled into a roar of joyful laughter. The sound broke slowly through Sam's bemused senses. Golly! What if his dauntless top noncom didn't *like* wearing his cap on the tip of his nose?

The cap flew into the air with all the effect of a popped champagne cork. A ragged cheer broke from the assembly, and then silence was slowly re-established by an apoplectic glare of fury from the platform. Voiceless with rage, SecSerg Glynn waved with wild circular motions of his pudgy arms.

Immediately two Third corporals floundered up the steps to the platform carrying something between them. Sam gasped as he recognized the object: a patriarch's portable throne. Both corporals sagged visibly as SecSerg Glynn lumbered into it.

"Now," the enthroned noncom bellowed at a decibel level that hurt Sam's ears even without the amplitrump, "let's see the blasphemous, obscene, unmentionable spy do something to me! He knows as well as I do that the sigh-kick orientation of the tempo . . . of the tempo . . . well, anyhow, he knows that his gooking can't get to me now."

The noise hurt Sam's ears, but he was vaguely proud that his noble noncom could use such fancy words. Well, almost use them. Now let's see; what was the next thing on Al's program? Necktie down the gullet, wasn't it? It seemed a shame, really, but maybe just the least little tug—

GLOM!

Instantly Sam's head was clear, his mind razor sharp. But for one bottomless heartbeat he had felt his mind enmeshed in something dark and timeless and terrifying. He had extended his thought only the very slightest bit—he had intended the very smallest of tugs at SecSerg Glynn's tie—and by gathering all his strength he had been able to withdraw.

Sick and shaken, for a moment Sam was completely occupied in taking control of his faculties. Then he noticed that the roar was continuing. ". . . That everybody here hates this anti-Tellurian gookery just as much as I do. But all we have to do now to catch this illicit, blasphemous unprintable is to say one phrase together. Everybody ready? *Sm-aarliq m'quast'chif!*"

SecSerg Glynn paused briefly to rotate his glare over the silent assembly. "Those words are a sigh-on . . . on . . . well anyhow, they'll bring him around in a hurry. And as soon as he starts having fits, everybody standing around him raise your right hand. Now everybody together"—he lifted his beefy arms to mark time—*"Sm-aarliq m'quast'chif!"*

"Sm'aarliq m'quast'chif!" responded an obvious claque in the front ranks, with much better pro-

nunciation. *"Sm-aarliq m'quast'chif!"* The cry spread quickly, and soon the whole assembly was roaring it in unison.

In unison, that is, except for Sam. Still trembling from his weird brush with the unthinkable, he wondered what new threat the chanted words held for him. Nothing seemed to be happening. Besides, he suddenly realized, weren't those the words—

A fresh tumult broke out as a command hoverer suddenly began dropping toward the front of the platform. The men began to gawk up at it, and then suddenly there was frantic activity to provide a clear space for it to land. Sam, at the fringe of the flurry, was glad of the extra centimeters that kept his face out of the press. The rhythmical chanting became ragged and then stopped.

The hoverer landed in the open space that the men had made for it, and a brace of officers stepped out. Two top captains, two double-bird colonels, and a general. Sam counted starbursts and gulped; it was The General, the Commander of the 81st.

The general stepped a pace forward, and one of the captains spoke into a transcom. Glancing skyward, Sam noted a small fleet of hoverers, some of them looking very emphatic with blasters trained downward. If there had been silence before, now there was a total vacuum of sound.

The general broke the spell. "Section Sergeant Glynn, may I ask the meaning of this extraordinary procedure?" he rasped.

The two Third corporals, sensing grave disfavor, dropped the portable throne. SecSerg Glynn grunted as he and throne dropped together. The thud was followed by extended crunching sounds. After three false starts and more crunching, he made it to his feet and saluted violently.

"Sir," he faltered, "there's a native spy among my men. A dangerous spy with key-netical, sigh-something or other powers." His jowls oscillated vigorously as he broke his salute to wave at the assembly. "All these men just now saw a horrifying demonstration of those powers, and I was just—"

The general squelched him by turning his back on the platform and addressing a group of privates First Class. "Have any of you men seen a horrifying demonstration by a native spy?"

They glanced briefly at each other. Spy? They'd seen their section sergeant fumble his amplitrump and then smash it to the platform in what looked like an ill-timed grab. Then they'd seen him get so mad that he danced around and pulled his cap over his face before throwing it away. They'd seen him cavort in fury often enough before. But horrifying demonstration?

"No, sir," they chorused.

The general turned back to the platform. "Private Seventh class

Glynn," he thundered, "my staff and I wasted seventy man-hours checking out the wild tale you told them. Among other things, I learn that you spent the entire day yesterday in an illegal office directing your entire section in setting up a rebel stronghold."

Glynn flabbed his mouth open, but the general silenced him with a gesture. "In the meantime we got a complaint that one of my men stole a native patriarch's throne. Acting on a tip, we got here just in time to see you seated on it while your troops yelled the native equivalent of 'long life to ruler and master.'

"It's hard to see how you managed to subvert so many troops, but I believe that their basic loyalty to Tellus and to the Service will . . . Grab him, men!"

In the following excitement nobody thought to give a formal order. However, after Private Glynn had been bodily carried away, frothing and screaming about spies and sabotage, the assembly began breaking up as the men drifted away.

Sam was soon alone. Deep in thought, he experimented with the small rocks which dotted the assembly grounds. The spiral swoops and the overhappy feeling were gone, but that uncanny mental wrench seemed to have done something to him.

Quite a large group of men some distance away eddied around an obstacle and revealed a broadly smiling Al walking toward him. Al looked around before getting close enough to talk, and seemed satisfied that they were alone. "We sure fixed him, didn't we?" he crowed.

Sam allowed his last thought to mesh gears with the ones already in rotation. His jaw hanging slightly with the effort, he allowed himself only an interrogative "Uh?"

Al looked around again sharply, but there were only retreating backs in the distance. "Didn't I tell you I had it all figured out?"

"Uh, Al, what do those thrones have to do with zaq?"

Al blinked. "Funny you should ask that. The natives believe that those thrones are a shield or a defense or something against anybody doing anything to them by, uh, telekinesis or anything like that. Imagine, stone-age natives building an antipsionic trap! But Glynn lapped it up."

"Trap, huh? Al, wasn't it you that was telling me about stone-age Polynesians building a fire piston that used the Diesel ignition principle?"

Al backed away slightly and glanced around again. Something suggested that the sight of the distant and retreating backs no longer pleased him so much. "Now look, Sam, I know it's just superstition. Because if it wasn't, by now you'd be . . . well, it's superstition."

"I was just wondering, Al. I'm supposed to know the native lan-

guage as well as you do, huh? We worked together and traded notes and everything. How did you manage to borrow those zaq shells and promise to bring them back? Using words that I know, that is?"

"Well, you see, Sam, uh . . ."

Sam kicked a rock out of his way and sat down loose-jointedly on the ground, motioning Al to do likewise. "Al, suppose you tell me all about The Weapon now. You've had a few talks that I didn't exactly sit in on, right?"

Al blanched a shade whiter and collapsed limply to sit opposite Sam. "Well, uh, The Weapon?" He looked closely at Sam's face and started talking faster. "Uh, oh that. It seems that a bunch of patriarchs were having some sort of powwow and were all zaqqed up when they just happened to look up and saw our fleet coming in nightside. They've got eyes like hawks, and with no satellites or skyglow or anything, they could see us good enough to cut loose with rocks, just like we figured they did."

"Just one bunch of them?"

"That's all. To start with, anyhow. But then they spread the word by telepathy—zaq hops up all the psi faculties—and the espers could tell the telekinos where to shoot. But *you* know how zaq is, Sam. When the general split us up into three groups, the natives just lost track of ours."

"So our bunch got through?"

"Sure. But then after we landed the natives saw that we were what you might call people and there wasn't any reason to throw rocks.

"They'd have explained any time, but nobody ever asked the right questions. We kept asking about rocket fuel and launching sites and space navigation. And I was going to tell you all about it tonight after chow, Sam. Really I was."

Sam's blistered foot gave him a twinge, reminding him of his other aches from yesterday's exertions. He still hadn't quite gotten over that mind-wrench from the portable throne, either. His various discomforts somehow reminded him that he still hadn't done that necktie down the gullet trick.

Al never noticed it when his necktie began stirring. He was too occupied in staring at the rock that had just lifted from under his hand to hurl itself at a boulder and shatter into gravel. Sam rose to his feet with a distinct feeling that there were all sorts of opportunities for the Tellurian who was, so to speak, on top of The Weapon.

Al probably would have stood up, too, if his shoelaces hadn't gotten tangled together. He seemed to be trying to say something.

With a real fine helper like Al was going to be, Sam decided, there were all sorts of interesting possibilities ahead. Besides, he realized, he had developed a real taste for zaq.

He didn't have it all figured out yet, but he was working on it. ■

the space technology of a track meet

BY ROBERT S. RICHARDSON

If a man can walk four miles in one hour under a one-g gravity field, how far can he walk in half an hour under Jupiter's 2.5-g field?

And you can't solve that one by high-school algebra! The height a man can jump—the broad jump he can achieve—under different gravities is nowhere near so simple as a direct function of the gravity-field!

Does this sound familiar?

"Derek estimated the height of the jagged rock at the rim of the pit that held him prisoner. Forty feet if it was an inch. With a rueful smile he recalled that day at Skidmore Tech when he had set the school record in the high jump—8 feet 1.5 inches.* Under the six-fold weaker lunar gravitational field that was 48 feet 9 inches. Hampered as he was by his spacesuit he should still be good for a mere 40 feet. With a mighty bound . . ."

I hope that Derek made it. But my personal conviction is that he is still at the bottom of that pit. To get out of a situation like that he would have needed a rope ladder.

We have become accustomed to thinking that the distance a man could jump or throw a rock on another planet depends in a simple

*Skidmore Tech didn't adopt the metric system until 1969.

way on its surface gravity. On the moon where surface gravity is one-sixth that of the Earth a man should be able to do everything six times bigger and better. It sounds reasonable and we are willing to go along with it.

While mulling over the results of the USA-USSR meet in Los Angeles and the Olympic Games in Tokyo, I got to wondering what sort of marks the same athletes would have estabished if the meet had been held on the Moon or Mars. I envisaged a giant air-conditioned stadium on the Moon where the contestants could perform under conditions identical with those on the Earth—except for surface gravity. What could an Olympic champion do in the shot put and high jump and long jump? I began to suspicion that simply multiplying by 6 was too easy. And when it came to the running events I was lost completely. Was it possible that the figures authors give in their stories about the feats of their characters are all wrong? I thought I would spend a couple of hours investigating the matter. I came up with some answers—at the end of a couple of weeks.

This is a subject that has always had a fascination for me, owing to my early interest in astronomy and science fiction, as well as the fact that I used up a lot of energy in college running the 100-yd. and 440-yd., and trying to throw the shot. Recently my daughter at UCLA was startled when she chanced upon a little brass plate in the cafeteria bearing an inscription to the effect that Bob Richardson once held the school record in the 100-yard dash of 9.8 seconds. (Actually it was 101 yards. I was set back a yard for jumping the gun.) Often the thought of that 101 yards I ran so long ago is a source of considerable consolation when I come toiling up the driveway with the morning paper. My reason for mentioning it is to let the reader know I have some first-hand experience in track and field.

In this article I propose to analyze the dynamics of only four events—shot put, high jump, 100 yd. dash, and long jump—and apply the results to the Moon and Mars. No importance should be attached to the numerical values quoted here. They are intended to serve as the basis for future discussion more than anything else.

First of all we should clearly understand the significance of some terms we shall be using continually. (Scientists and engineers can skip this part.) If this material is unfamiliar to you, however, it would be advisable to read it even if you find it pretty dry stuff. Although men like Galileo and Newton found it of absorbing interest.

A body is falling freely near the surface of the Earth. (The resistance of the atmosphere will be disregarded in what follows.) We

are equipped with instruments that enable us to make accurate measures on the distance the body has fallen at any instant. The latitude is about 45° N. From our measures on the body we obtain Table I.

Our observations show that the velocity of a body falling under these conditions keeps increasing at the regular rate of about 32.1 ft/sec in every second of its fall. It is quicker to say it has a uniform acceleration of 32.1 ft/sec^2. This constant acceleration of a body due to gravity is denoted by g. Owing to the oblateness and rotation of the Earth the value of g varies with the latitude. For example, at the equator g = 32.086 ft/sec^2, but at the north pole g = 32.258 ft/sec^2. This doesn't seem like much of a difference but it mounts up rapidly with time. After 10 seconds a body at the north pole will have fallen 2 feet farther than a body at the equator. In a vacuum all bodies are accelerated at the same rate; that is, a ball bearing falls at the same rate as a bale of cotton.

What we call "weight" is the force of attraction downward exerted by the Earth on bodies at its surface. The Earth exerts this force on a body whether the body is free to fall or not. When sitting on a chair you are pulled downward by the Earth, but pushed up with an equal force by the chair. If the chair could not push up with the same force the Earth pulls you down, it would collapse under your weight.

What is the difference between *mass* and *weight?*

There is a block of platinum at the Standards Office in Westminster, London, that *defines* a mass of 1 pound. Suppose you sat down on one of the scale-pans of a huge equal-arm balance. Then duplicates of the standard pound-mass are put in the other scale-pan until a balance is obtained. Let us say it takes 180 of these standard pound-masses. Then your mass is 180 pounds. You can think of mass as the quantity of matter in a body.

The force of attraction down-

I. MOTION OF A BODY FALLING IN VACUUM

Time (secs)	Distance (feet)	Velocity (ft/sec)	Change in Velocity (ft/sec/sec)
0	0.00	0.00	
			32.09
1	16.04	32.09	
			32.08
2	64.17	64.17	
			32.09
3	144.39	92.26	
			32.08
4	256.69	128.34	
			32.09
5	401.08	160.43	
10	1,604.3	320.86	

ward that the Earth exerts on your body, or your weight, could be found by a spring balance. Suspend your body by a spring. The force of gravity pulling downward is measured against the tension of the spring. The spring balance shows that you weigh 180 pounds.

You go to the Moon where the acceleration of gravity is g/6. Again you sit down in one of the scale-pans and put standard pound-masses in the other pan until they balance. Again you find your mass is the same as it was on the Earth—180 pounds. There is just as much of YOU as ever.

Now suspend your body by a spring balance. It registers 30 pounds. This is your *weight* on the *Moon*. On Jupiter where the acceleration of gravity is 2.5 g your mass of 180 pounds would register by a spring balance as 540 pounds weight. The *mass* of a body is a *constant* quantity. But the *weight* of a body *varies* depending upon where it happens to be.

Surface gravity is directly proportional to the mass of a planet and inversely proportional to the square of its radius. This explains why Uranus, although 14.6 times as massive as the Earth, has a surface gravity slightly less than that of the Earth. Its radius is 4.19 times that of the Earth, $4.19 \times 4.19 = 17.56$, which is more than 14.6. Hence surface gravity on Uranus is $14.6/17.56 = 0.83$. Table II gives the surface gravity and related data for the planets. Pluto is omitted as its mass and radius are still very uncertain.

METHOD OF PROCEDURE

The only planet for which we know the records in track and field is Earth. It would help enormously if these figures were available for just one other body, for then we would at least know whether we are heading in the right direction or not. But lacking such information we must proceed with what little data we have, if we want to proceed at all. Extrapolation is a risky business even when you have data covering a considerable range of values. But in this case we are forced to extrapolate from a *single point*.

To put the shot 65 feet or jump 7 feet an athlete must generate a certain energy of motion or kinetic energy. Whatever this may be we assume that he could generate the same energy of motion on another planet. Suppose he is on a planet where surface gravity is half of that on the Earth. His muscles would be as strong as ever. Hence the same energy could be applied as if setting in motion a body of half the mass with correspondingly greater effect. We assume in addition that the meet is held in an air-conditioned stadium where conditions are identical with those on the Earth except for gravity. In practice I am sure that it would be

TABLE II*

Surface Gravity in the Solar System

Planet	Radius	Mass	Surface gravity (Planet/Earth)	Surface gravity (Earth/Planet)	(ft^g/sec^2)
Moon	0.272	0.0123	0.164	6.08	5.3
Mercury	0.403	0.037	0.209	4.78	6.7
Venus	0.990	0.826	0.838	1.19	26.9
Earth	1.000	1.000	1.000	1.00	32.1
Mars	0.538	0.108	0.372	2.69	11.9
Jupiter	11.27	318.4	2.501	0.40	80.3
Saturn	9.47	95.2	1.064	0.94	34.2
Uranus	4.19	14.6	0.840	1.19	27.0
Neptune	3.50	17.3	1.142	0.88	36.7

impossible to transport athletes to another planet and expect them to perform at their usual level without going through a lengthy period of adjustment. On the Earth even an overnight trip will often throw a man badly off form.

As the amount of numerical calculation involved is considerable we are going to discuss only the high jump, 16-lb. shot put, long jump, and the 100-yard dash. The reader can try his own hand at working out the results for the javelin and discus, et cetera. In my calculations I have used very good marks although not necessarily the records in these events. It is futile to quibble over precise numerical values when we aren't even sure the theory itself is right.

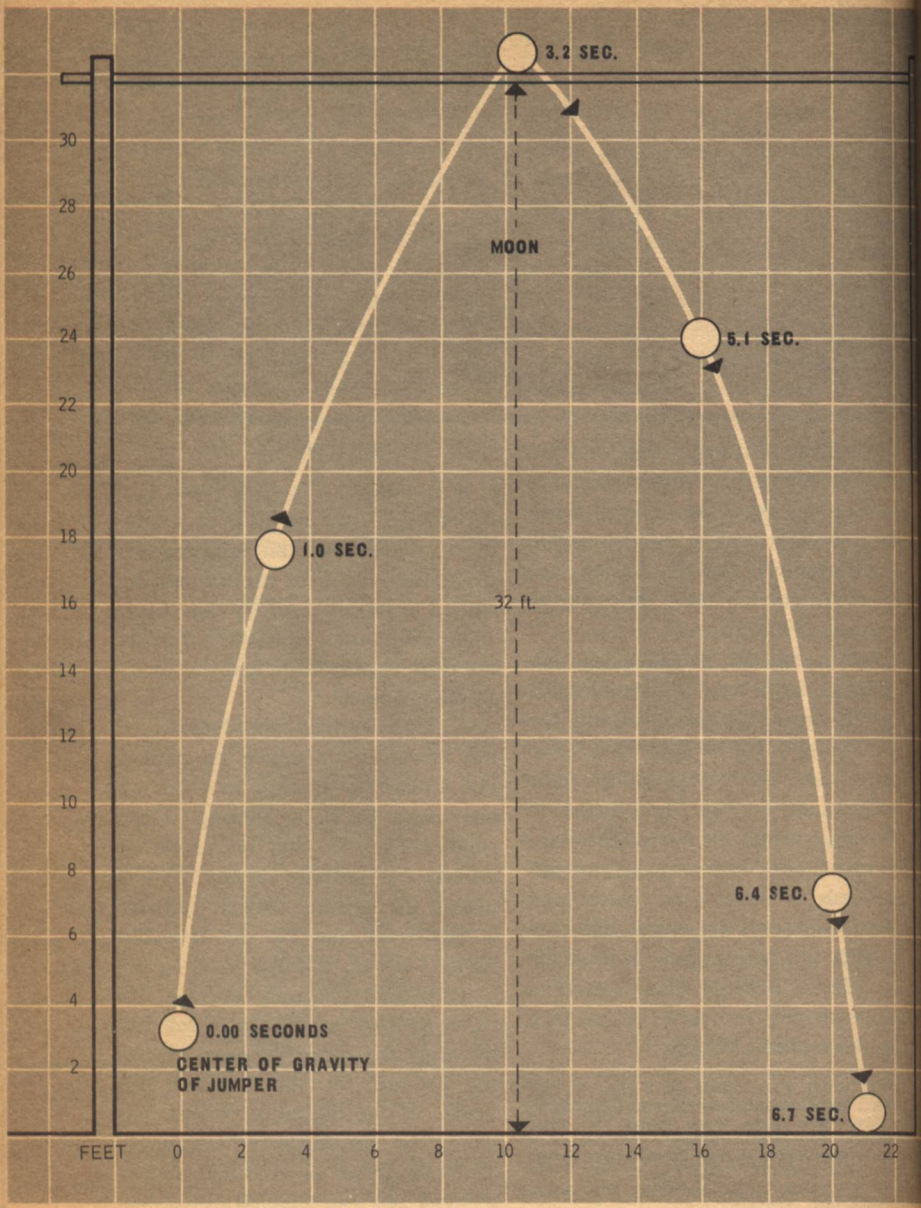
*R. Wildt, *Proc. Amer. Phil. Soc., 81,* 135, 1939. Since astronomers are always trying to improve their data, these figures will differ slightly from those found elsewhere. The values of g differ slightly from those derived from the formula, Mass/Radius^2, as Wildt evidently took polar flattening and other factors into account.

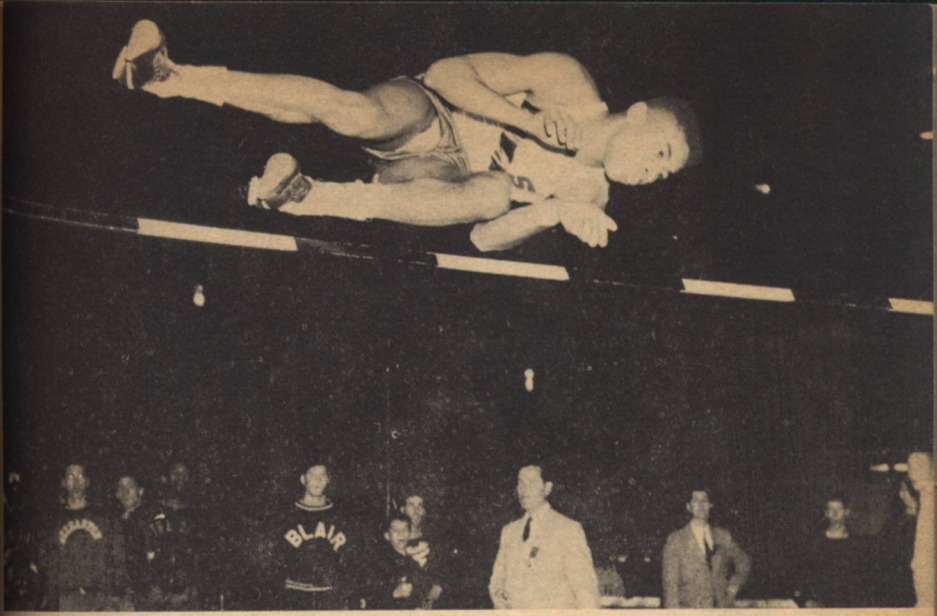
THE HIGH JUMP

We consider the high jump first because—in my opinion—it is simple in theory and the results easily evaluated. All our results are assumed to be obtained by the efforts of a 150-pound athlete** who has an iron constitution and no emotional problems.

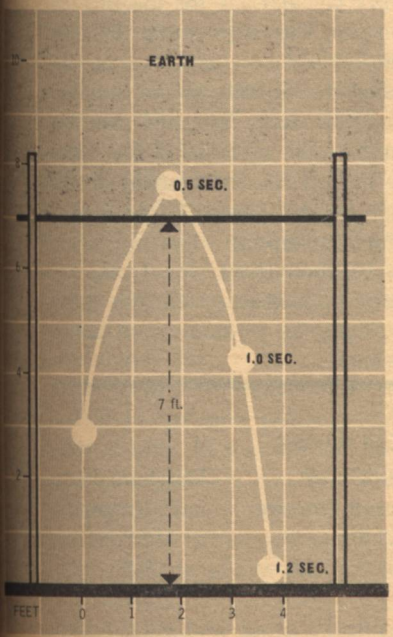
A high jumper approaches the bar from any distance he pleases but makes no attempt to work up any speed. He starts his leap from a slight crouch so that his center of gravity is initially about 3 feet above the ground. When perhaps 2 feet from the bar he launches himself by an impulse sending his body almost vertically upward. He turns so that as he clears the bar his body is practically parallel with the ground. At this moment his body is considerably above the height of his jump *as measured.* That is, if he is credited with a

**We'll make him 250 pounds in the shotput.


3.2 SEC.
MOON
5.1 SEC.
1.0 SEC.
32 ft.
6.4 SEC.
0.00 SECONDS
CENTER OF GRAVITY
OF JUMPER
6.7 SEC.
30
28
26
24
22
20
18
16
14
12
10
8
6
4
2
FEET
0
2
4
6
8
10
12
14
16
18
20
22



Wide World Photos



A high jumper when clearing the bar has his body almost exactly horizontal, with the center of gravity of his body markedly above the height as measured. But the start of the jump finds his center of gravity already about three feet above ground. So he has raised his center of gravity (measured height)—(3 feet) + (CG clearance above bar).

This makes conversion to equivalent height under different G acceleration anything but simple!

jump of 7 feet his center of gravity was probably at a height of 8 feet. Hence in making a jump officially recorded as 7 feet, he has raised his center of gravity by the distance $8 - 3 = 5$ feet.

When starting his leap his energy is all kinetic energy or energy of motion. At the top of his leap his energy is all energy of position or potential energy. Since energy is conserved the two must be equal. That is, his KE at launch must equal his PE at summit altitude, to borrow from rocketry. (Except that he doesn't undergo a diminution in mass on the way up!) Assuming a man on Earth where $g = 32$ lifts his center of gravity through 5 feet, he needs an initial velocity of 17.89 ft/sec. We will adopt 18 ft/sec as our initial velocity on another planet.

The height of a jump on another planet can be calculated by taking the appropriate constant acceleration downward which is the case for parabolic motion. Or we can assume that the athlete puts himself into an elliptic orbit which has one of its foci at the center of the Earth some 21,000,000 feet away. Both give the same result although the elliptical case involves some awkwardly large numbers. It was assumed in all cases that the angle at launch is 80°. The results are shown in Table III.

Inspection of these figures shows how seriously we would be in error if we assumed that if a man on Earth can jump 7 feet he could jump $6 \times 7 = 42$ feet on the Moon. On the Moon our athlete's best leap would fall so far below expectations that the Interplanetary Olympic Committee would probably accuse him of being out all night on the town, were it not for the fact that his opponents would fail just as badly.

My calculations for the illustration for the high jump brought home to me how easily we can be fooled by conditions on another planet. I tacitly assumed that because a man takes off 2 feet from the bar on Earth he would do the same on the Moon. It came as a complete surprise when my calculations showed he would take off about 10 feet away! On the Earth at 10 feet he wouldn't even get to the bar!

TABLE III

Results for the High Jump

Planet	Distance Raised Center of Gravity	Height of Center of Gravity	Height of Jump as Measured
Moon	29.8 feet	32.8 feet	31.8 feet
Mars	13.3	16.3	15.3
Earth	4.9	7.9	6.9
Jupiter	2.0	5.0	4.0

THE SHOT PUT

This is the only event in which I feel that prediction will be in close accord with observation. The reason being that the shot put corresponds so closely with the classic problem of determining the range of a missile. A cannonball is fired with a known initial velocity and at a known upward angle with the horizontal surface. The only force acting upon the missile is gravity. What is the range of the missile?

The problem in this uncomplicated form readily yields two equations involving the time, the horizontal range (X), and the vertical range (Y). Our chief interest is in the distance the missile has traveled when it finally hits the ground, corresponding to the point $Y = O$. Since the solution is obtained by taking a square root we get two answers. One is $X = O$ which is trivial, and the other is the one we want for the range. As a kind of bonus award the equation can also be made to give us another valuable bit of information: the fact that the maximum range for a given velocity is attained by an angle of projection of 45°.

The theory is immediately applicable to the shot put with one minor change. In the classical case the missile is always launched from the origin of co-ordinates. But a man launches the shot at a considerable distance above the ground from the very tips of his fingers. (It is remarkable how much extra impetus you can get out of this "finger flip.") We have estimated the vertical elevation of the shot at launch as 9 feet. The range is found as before by setting $Y = O$.

After several trial puts on paper we finally adopted an initial velocity for the 16-pound shot of 44 feet/sec. This gives the shot a range of $X = 68.26$ feet, which should be good for a blue ribbon in most meets. The other solution is $X = -7.95$ feet, which is mathematically interesting but of no significance in the real world. Imagine a voice coming over the public address system, "Zybysco just won the shot put with a toss of minus 8 feet!"

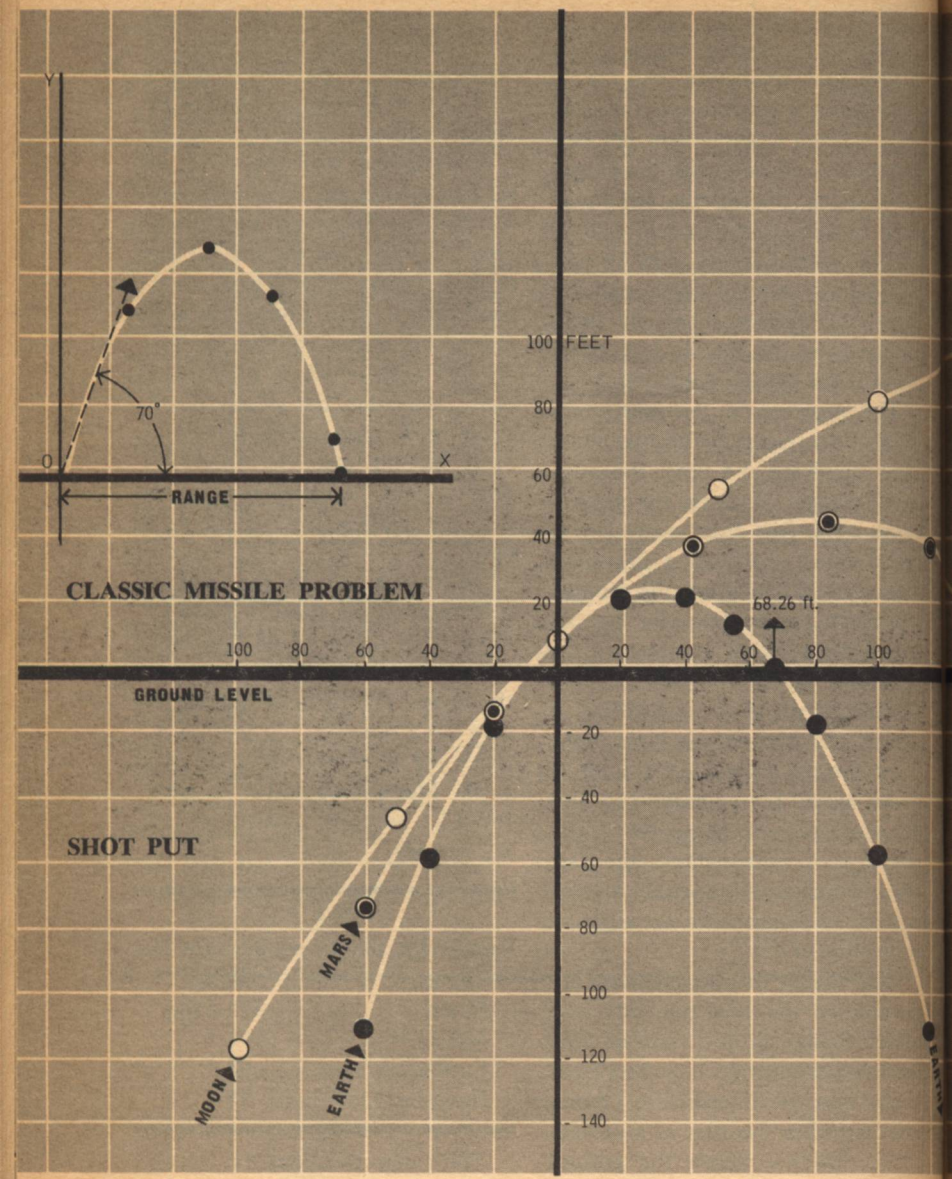
The results of the shot put for other planets are given in Table IV. How puny a put of 68 feet looks compared with its counterpart on the Moon! On the lunar surface the shot has a range of 375 feet, or 5.5 times the terrestrial distance. And on the Moon it would be "in orbit" for 12.1 seconds instead of only 2.2 seconds.

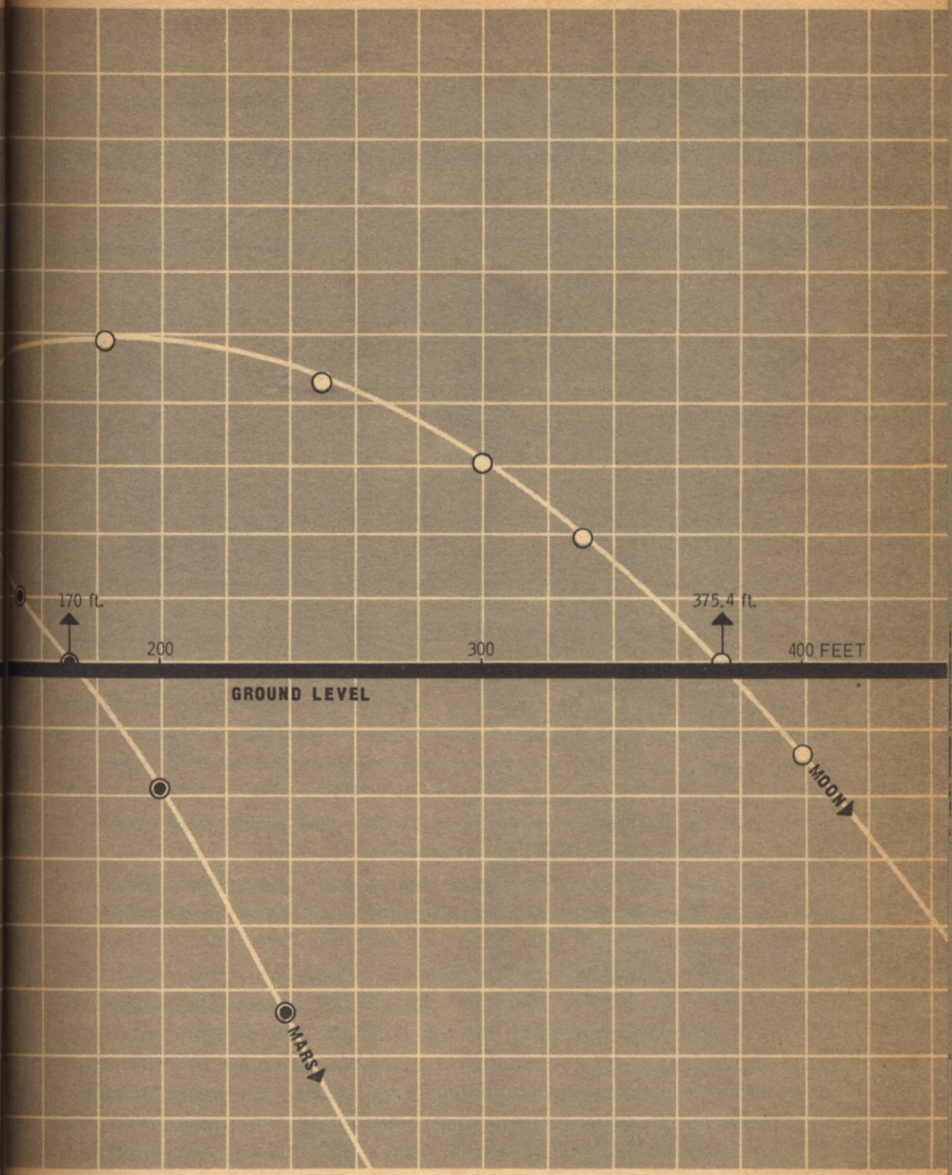
TABLE IV

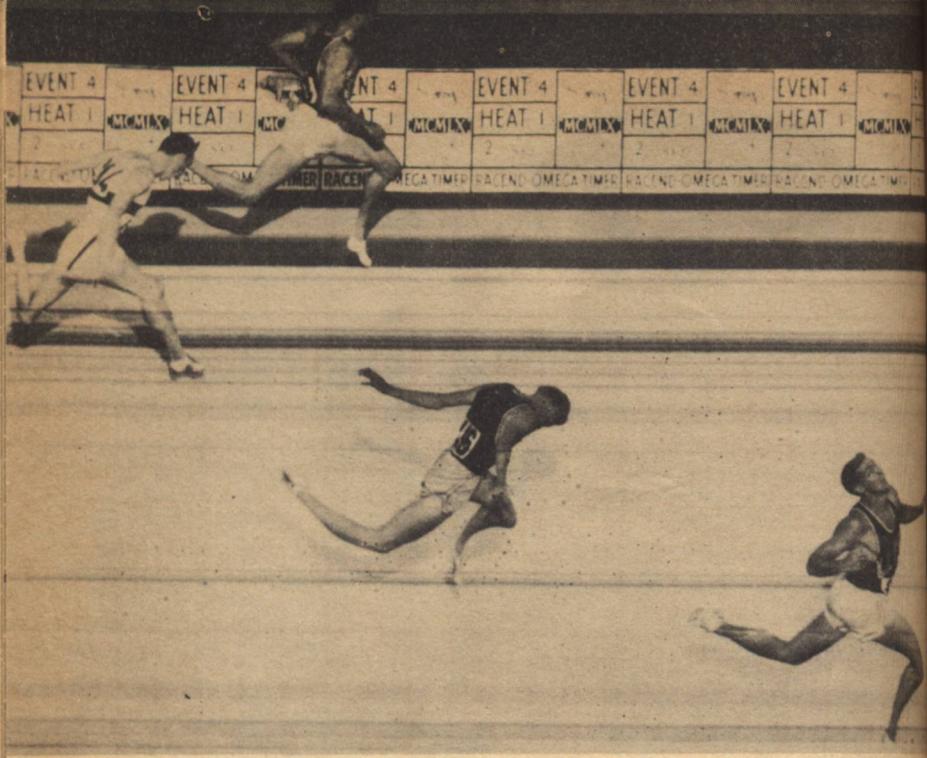
Results for the 16-pound Shot Put

Planet	Range
Moon	375.4 feet
Mars	171.2
Earth	68.3
Jupiter	31.2

The range of about 31 feet for Jupiter corresponds roughly to the distance on the Earth that a strong


Y
X
O
70°
RANGE
CLASSIC MISSILE PROBLEM
100 FEET
80
60
40
20
68.26 ft.
100 80 60 40 20
20 40 60 80 100
GROUND LEVEL
20
40
60
80
100
120
140
SHOT PUT
MARS
MOON
EARTH


170 ft.
375.4 ft.
200
300
400 FEET
GROUND LEVEL
MOON
MARS



Wide World Photos

Typical finish of a foot race shows a wild variety of postures. The limitation on speed in such a race is an even more complex function. Since there is no change of elevation, G acceleration would, at first, seem to have little effect. In the very short runs, fatigue plays little role. Acceleration from rest to maximum speed takes place in the first few paces, with the rest of the race at nearly constant maximum speed.

In 100-yard or 100-meter dashes, the runner operates at all-out-and-no-reserves. Longer races require adjusting pace to maintain necessary reserves.

In the 100-yards, the limiting factor is simply how fast legs can be moved. Here two factors dominate; the viscosity of muscle protoplasm, and the pendulum-frequency of the leg. If all the available muscular force a muscle can generate is consumed in trying to overcome the internal viscosity of its own protoplasm—which is, of course, a viscous, gelatinous liquid—no force will be available for external use. That limits the maximum speed of contraction of muscle, even under zero-G conditions.

Second is the leg-pendulum problem. Wheels aren't practical in nature —but legs act like spokes-in-a-wheel, and are almost equally efficient. How-

ever, to be efficient, they must swing back and forth as free pendulums—which determines the natural walking rate of the animal. All the very fast running animals have exceedingly long, very slender feet, with all leg muscles bunched close to the hip joint. Man does not; he has massive flat feet, and massive calf muscles. To attain speed, men have to lift their feet high off the ground, thus shortening the pendulum and quickening its swing for the forward-going return motion.

The G-acceleration does determine pendulum vibration rate. Thus it might be that a runner could actually achieve a higher speed on Jupiter than on the Moon!

man can heave the shot, who does not know anything about it.

THE LONG JUMP

The long jump differs from the high jump in that the athlete tries to work up all the speed he can before making his leap. His preliminary run is made from any distance he likes. He does not have the same freedom as a man running the 100-yards, however, as he must adjust his stride so as to hit the take-off board just right. As before, we have proceeded by assuming a leap of 25 feet for the Earth, and then calculating the corresponding velocity. The value adopted was 35 feet/sec. The results for the long jump are then as follows:

TABLE V

Results for the Long Jump

Planet	Distance
Moon	152.0 feet
Mars	67.3
Earth	25.0
Jupiter	10.0

THE 100-YARD DASH

The physical activity involved in the high jump, shot put, and long jump have close parallels in well-known mechanical problems. But there are no easy solutions in the running events. In fact, we are confronted by a problem of such complexity that in my opinion only two means of solution are possible. We can conduct an elaborate series of tests on athletes in action and then subject them to various analyses by a highspeed computer. Or we can wait until we can send some athletes to a planet and find the answer by direct measurement. In the meantime we have to proceed pretty much by guesswork. The results presented here are intended purely as a basis for possible future discussion.

The only running event that will be considered is the 100-yard dash. This is an extremely simple event. It doesn't take any brains at all. All you have to do is to get into motion as soon as you can as fast as you can for 300 feet.

At the crack of the gun a sprinter digs his spikes into the track trying to work up speed by exerting every ounce of energy he possesses. In this effort he is both aided and hindered by the track. The track must be firm underfoot so that he has an unyielding surface to push against. But it must not be hard and slippery like cement. Equally bad would be a track with a deep soft surface as in horse racing. Most sprinters prefer a track that gives to a depth of perhaps a quarter inch on the top, with a firm surface underneath.

Whatever the nature of the track it will oppose any motion over its surface. This opposition to motion is comparable in effect to the force of friction when two surfaces are in contact. The force of friction depends upon the perpendicular force pressing the two surfaces together, as well as the nature of these surfaces. The force exerted by different surfaces is expressed by a number known as the coefficient of friction. In the track case we have adopted a coefficient of friction of 0.1. About the only justification for using this particular value was that it simplified the arithmetic.

An athlete will move ahead faster the more force he can exert against the track horizontally in the direction of the finish line. During most of the race he holds his body nearly erect. As he approaches the tape his head and shoulders are drawn backward slightly by the strain of his effort, a tendency which he endeavors to overcome by making a conscious effort to pull his chin down. Although his trunk is erect, he is working his legs so as to drive his spikes into the ground at a considerable angle to the horizontal. The rate at which he is impelled forward will depend upon the total force exerted, as well as the angle this force makes with the horizontal.

A sprinter starting from rest accelerates so rapidly that he soon reaches a constant speed which he tries to maintain throughout the rest of the race. We are making the arbitrary assumption that his velocity is accelerated only during the first 2 seconds of the 100-yards, after which all the force expended goes into overcoming the various forces opposing his motion. We further assume that this force is directed at an angle of 45° with the horizontal.

The values finally adopted were obtained by a cut-and-try process; about the only thing to recommend them is that they may have a tenuous connection with reality. During the first 2 seconds the acceleration has an average value of 17.5 feet/sec^2. At the end of the 2 seconds our runner has moved up the track by 35.0 feet, and attained a speed of 35.0 feet/sec, which he maintains for the remaining 265 feet. Under these conditions his time for the 100 yards would be 9.57 seconds.

To run this kind of a race our 150-pound sprinter would have to put forth a total force of 124.7 pounds. It is assumed that on any other planet he would also be able to exert the same force, and that his motion is accelerated only during the first 2 seconds. The results for the 100-yards would then be as in Table VI.

The reader can have some fun by seeing how much the time is affected by making slight changes in the initial conditions. But watch out! After a while you become so absorbed in your calculations that the protestations of your wife and children, the cares of business, and the water leaking through the roof, are as nothing compared with your compulsion for running just one more solution for Jupiter.

These are the results when the race is run on *paper*. But I suspect that *in situ* they might be quite different. In our theory we have gone blithely ahead as if the only difference between running on the Earth and on the Moon is merely one of *degree*. How do we know it isn't a difference in *kind*? On the Moon we may not be able to "run" at all. Instead the act of "running" may consist of a succession of clumsy leaps and bounds, resembling a slow motion picture of a man on a pogo stick. His time for the 100 yards might be 84.4 seconds rather than 8.44 seconds as predicted. Just to show how uncertain the matter is we can adopt another premise that leads to just the opposite results.

Watch how a man's legs work when he is running smoothly in a race such as the mile. They oscillate back and forth in a steady rhythm like the swing of a pendulum. The motion of a pendulum is another classic problem in physics. The formula for the *period* or time of swing of a pendulum bob is very simple if the angle of swing is less than about 10°. The period is found to depend *only* upon the length of the bob and the acceleration of gravity, g. Contrary to what you might expect the period does *not* depend upon the ampli-

TABLE VI

Results for the 100-yard Dash

Planet	Accel. in. first 2 secs. (ft/sec^2)	Velocity attained (ft./sec)	Time for 100 yards (secs)
Moon	20.17	40.34	8.44
Mars	19.52	39.04	8.69
Earth	17.50	35.0	9.57
Jupiter	12.7	25.4	12.81

tude of the swing providing it is small. Neither does it depend upon the mass of the bob.

A "second's pendulum" is of such a length that it will beat seconds. In the United States this length is 39.10 inches corresponding to a value for g of 32.16 ft/sec^2. If the pendulum were transported to the equator where g is smaller it would have a slightly longer beat. If transported to the north pole where g is greater, it would swing a little faster.

Let us suppose that the back-and-forth motion of a man's legs *does* correspond to the motion of a pendulum bob, so that the same theory is applicable. How fast could a man run on another planet? *Now* his stride would be *slower* on the Moon and *faster* on Jupiter. If his time for the race is directly proportional to the period of swing the results for the 100 yards would look quite different from before.

The analogy with the pendulum is an intriguing idea which I wish I could believe. But I am unable to see any physical correspondence between the motion of a man's legs when running and the swing of a pendulum. Furthermore, I have a suspicion that the person who advanced this idea has never had much experience when it comes to serious running; in particular, with a hard race like the 440 yards. Your leg when up corresponds to a pendulum at the top of its swing. But your leg when down is not subject to any restoring force except what you are able to generate yourself. There are times when your legs feel as if they were made of lead.

TABLE VII

Time for 100-yards on Pendulum Principle

Planet	Time
Moon	23.42 secs
Mars	15.58
Venus	10.37
Earth	9.50
Neptune	8.89
Jupiter	6.01

My own hunch in the matter is that we will be able to run faster under lesser gravity up to a certain point, after which the "bounding" effect will begin to cut down the velocity. Thus the best times in running events might be made on a planet such as Venus, where surface gravity is slightly less than on the Earth, but not low enough to make us clumsy in our movements.

We may look ahead to the Interplanetary Olympics when the winners on different worlds will not be known until the results can be run through a computer and reduced to standard conditions. Thus in the high jump we might hear that although Epstein of the Earth did 8′ 3″, McDonald of Mars did 17′ 1″, and Mulligan of the Moon cleared the bar at 34′ 7″, the event was won by Jerkovich of Jupiter with a colossal leap of 5 feet 2 inches! ■

The Prophet of Dune

Part IV of V.

With the deep and unswerving loyalty of an incredibly deadly fighting people, to make war on the Galaxy was easy. But could even the prophetic vision of the Prophet of Dune be sufficient to find a way NOT to make war . . .

FRANK HERBERT

Illustrated by John Schoenherr

SYNOPSIS

Two years have passed since Arrakis, the spice planet known as Dune, was torn from House Atreides by the schemes of the Harkonnens and by the Padishah Emperor's treachery.

Paul-Muad'Dib who was once Paul Atreides is fighting for a place among the Fremen of the Dune world, Arrakis, building a new identity for himself against the day when he can return to the planet's centers of power and revenge himself upon the Harkonnens who murdered his father.

Meanwhile, the Count and Lady Fenring, who once were Imperial representatives on Paul's native world of Caladan, appear at the Harkonnen homeworld of Giedi Prime. It is the seventeenth birthday of Feyd-Rautha, nephew-heir of Baron Vladimir Harkonnen. Feyd-Rautha, using a scheme provided by Thufir Hawat—onetime mentat *master-of-assassins to Family Atreides—kills a slave gladiator in the arena and discredits the Baron's slavemaster in the process. The slavemaster will be replaced by a minion of Feyd-Rautha.*

The Count Fenring and his Lady Margot see the plot take shape. They detect Hawat's touch in it, but remain silent. The Lady Margot has another mission here on Giedi Prime, to seduce Feyd-Rautha and conceive a child by him. She is Bene Gesserit and this is part of her school's long-range plan to produce the kwisatz haderach, *a human male with powers over space and time.*

On Arrakis, Paul-Muad'Dib is undergoing the trials that may mature him into the kwisatz haderach *—if he survives. His mother, the Lady Jessica who is another Bene Gesserit graduate, has survived the trial by spice poison. She converts to spice liquor the deadly water obtained in drowning a giant sandworm. Through the drug experience of changing this liquor within her own body, Jessica acquires the entire life experience of the Fremen tribe's dying Reverend Mother. With the life experience of this Reverend Mother, Jessica acquires also the life experiences of all the Reverend Mothers preceding in that line. Out of this ocean of oneness and ancient memories stretching back to the slave cribs of Bela Tegeuse and Nilotic Ouriba, Jessica achieves a place of religious ascendance over Stilgar's Fremen tribe. Jessica is a Reverend Mother.*

But the drug change also has inflicted itself upon Jessica's unborn daughter—a thing against which there are dire warnings.

Paul, struggling through his own form of spice change and trying to understand the prescient powers precipitated by spice diet, finds himself lost in mutable time awareness, transfixed by the experience of infinite possible lives. He fights to gain a natural rhythm, a systematic way to digest the lessons of prescience. Again and again, impelled by the workings of the spice diet, Paul returns to his vision of Pure Time, of Time-become-space, with the past in the future and the future in his lonely past. By intense concentration, he holds his awareness on the thinnest margin of trinocular focus—but mastery of his prescience evades him.

Among the Fremen, Paul acquires Chani as concubine and she, in the drug-sharing tau, *sees part of Paul's prescience. She rejects the vision out of fear and inability to understand it. All she wants is a time of peace and love, but Paul—seeing across his Time horizon the Fremen in a wild religious crusade —knows that Chani can have her wish only between periods of violence. The Baron Harkonnen and his nephews, Rabban and Feyd-Rautha, are sure to strike more terrible blows against Arrakis.*

The Baron, meanwhile, awakens to Feyd-Rautha's plots against him and kills many of Feyd-Rautha's minions and spies. Feyd-Rautha and the Baron achieve an uneasy truce. It's a condition that stinks of Thufir Hawat's machinations. But Hawat is bent primarily on revenge

against the Padishah Emperor against whom he places the major blame for the murder of Duke Leto and the Atreides family.

Hawat's suspicions are turned now against Salusa Secundus, the Emperor's prison planet. Hawat believes this is the training ground for the Emperor's dread Sardaukar warriors. And Hawat is aware that Arrakis is similar in many ways to Salusa Secundus. Those who survive the rigors of Arrakis are incredibly tough—and Hawat believes there must be at least ten million Fremen on Arrakis, a fighting force to match the Sardaukar. Before the Fremen can be used, the Emperor's suspicions must be allayed. To this end, Hawat tells the Baron to give the regent nephew, Beast Rabban, free reign to increase the oppression and slaughter across the land where Paul is hiding.

Part 4/XVIII

There is in all things a pattern that is part of our universe. It has symmetry, elegance and grace—those qualities you find always in



that which the artist captures. You can find it in the turning of the seasons, in the way sand trails along a ridge, in the branch clusters of the creosote bush or the pattern of its leaves. We try to copy these patterns in our lives and our society, seeking the rhythms, the dances, the forms that comfort. Yet, it is possible to see peril in the finding of ultimate perfection. It is clear that the ultimate pattern contains its own life and death. In such perfection, all things move toward death.

"The Collected Sayings
of Muad'Dib"
by The Princess Irulan

Paul-Muad'Dib remembered that there had been a meal heavy with spice essence. He clung to this memory because it was an anchor point and he could tell himself from this vantage that his immediate experience must be a dream.

I am a theater of processes, he told himself. *I am a prey to the imperfect vision, to the Race Consciousness and its Terrible Purpose.*

Yet, he could not escape the fear that he had somehow overrun himself, lost his position in Time, so that past and future and present mingled without distinction. It was a kind of visual fatigue and it came, he knew, from the constant necessity of holding the prescient-future as a *kind-of-memory* which was in itself a thing intrinsically of the past.

Chani prepared the meal for me, he told himself.

Yet, Chani was deep in the south —in the cold country where the sun was hot—secreted in one of the new sietch strongholds, safe with their son, Leto II.

Or, was that a thing yet to happen?

No, he reassured himself, for Alia-the-strange-one, his sister, had gone there with his mother and with Chani—a twenty-thumper trip into the south, riding a Reverend Mother's palanquin fixed to the backs of wild Makers.

He shied away from thought of riding the giant worms, asking himself: *Or is Alia yet to be born?*

I was on razzia, Paul recalled. *We went raiding to recover the water of our dead in Arrakeen. And I found the remains of my father in the funeral pyre. I enshrined the skull of my father in a Fremen rock mound overlooking Harg Pass.*

Or was that a thing yet to be?

My wounds are real, Paul told himself. *My scars are real. The shrine of my father's skull is real.*

Still in the dreamlike state, Paul remembered that Harah, Jamis' wife, had intruded on him once to say there'd been a fight in the sietch corridor. That had been the interim sietch before the women and children had been sent into the deep south. Harah had stood there in the entrance to the inner chamber, the black wings of her hair tied back by water rings on a chain. She had

held aside the chamber's hangings and told him that Chani had just killed someone.

This happened, Paul told himself. *This was real, not born out of its time and subject to change.*

Paul remembered he had rushed out to find Chani standing beneath the yellow globes of the corridor, clad in a brilliant blue wraparound robe with hood thrown back, a flush of exertion on her elfin features. She had been sheathing her crysknife. A huddled group had been hurrying away down the corridor with a burden.

And Paul remembered telling himself: You always know when they're carrying a body.

Chani's water rings, worn openly in sietch on a cord around her neck, tinkled as she turned toward him.

"Chani, what is this?" he asked.

"I dispatched one who came to challenge you in single combat."

"*You* killed him?"

"Yes. But perhaps I should've left him for Harah."

(And Paul recalled how the faces of the people around them had showed appreciation for these words. Even Harah had laughed.)

"But he came to challenge *me!*"

"You trained me yourself in the weirding way, Usul."

"Certainly! But you shouldn't—"

"I was born in the desert, Usul. I know how to use a crysknife."

He suppressed his anger, tried to talk reasonably. "This may all be true, Chani, but—"

"I am no longer a child hunting scorpions in the sietch by the light of a handglobe, Usul. I do not play games."

Paul glared at her, caught by the odd ferocity beneath her casual attitude.

"He was not worthy, Usul," Chani said. "I'd not disturb your meditations with the likes of him." She moved closer, looking at him out of the corners of her eyes, dropping her voice so that only he might hear. "And, beloved, when it's learned that a challenger may face *me* and be brought to shameful death by Muad'Dib's woman, there'll be fewer challengers."

Yes, Paul told himself, *that had certainly happened. It was true-past. And the number of challengers testing the new blade of Muad'Dib did drop dramatically.*

Somewhere, in a world not-of-the-dream, there was a hint of motion, the cry of a nightbird.

I dream, Paul reassured himself. *It's the spice meal.*

Still, there was about him a feeling of abandonment. He wondered if it might be possible that his ruh-spirit had slipped over somehow into the world where the Fremen believed he had his true existence—into the *Alam al-mithal,* the world of similitudes, that metaphysical realm where all physical limitations were removed. And he knew fear at the thought of such a place, because removal of all limitations

meant removal of all points of reference. In the landscape of a myth he could not orient himself and say: "I am I because I am here."

His mother had said once: "The people are divided, some of them, in how they think of you."

I must be waking from the dream, Paul told himself. For this had happened—these words from his mother, the Lady Jessica who was now a Reverend Mother of the Fremen, these words had passed through reality.

Jessica was fearful of the religious relationship between himself and the Fremen, Paul knew. She didn't like the fact that people of both sietch and graben referred to Muad'Dib as *Him.* And she went questioning among the tribes, sending out her sayyadina spies, collecting their answers and brooding on them.

She had quoted a Bene Gesserit proverb to him: "When religion and politics travel in the same cart, the riders believe nothing can stand in their way. Their movement becomes headlong—faster and faster and faster. They put aside all thought of obstacles and forget that a precipice does not show itself to the man in a blind rush until it's too late."

Paul recalled that he had sat there in his mother's quarters, in the inner chamber shrouded by dark hangings with their surfaces covered by woven patterns out of Fremen mythology. He had sat there, hearing her out, noting the way she was always observing—even when her eyes were lowered. Her oval face had new lines in it at the corners of the mouth, but the hair was still like polished bronze. The wide-set green eyes, though, hid beneath their overcasting of spice-imbued blue.

"The Fremen have a simple, practical religion," he said.

"Nothing about religion is simple," she warned.

But Paul, seeing the clouded future, aware of the Jihad, the religious war that still hung over them, found himself swayed by anger. He could not tell her that stopping the Jihad meant making himself central to the Fremen religious force. He could only say: "Religion unifies our forces. It's our mystique."

"You deliberately cultivate this air, this *bravura,*" she charged. "You never cease indoctrinating."

"Thus you yourself taught me," he said.

But she had been full of contentions and arguments that day. It had been the day of the circumcision ceremony for Little Leto. Paul had understood some of the reasons for her upset. She had never accepted his liaison—the "marriage of youth"—with Chani. But Chani had produced an Atreides son, and Jessica had found herself unable to reject the child with the mother.

Jessica had stirred finally under his stare, said: "You think me an unnatural mother."

"Of course not," Paul answered.

"I see the way you watch me when I'm with your sister. You don't understand about your sister."

"I know why Alia is different," he said. "She was unborn, part of you when you changed the Waters of Life. She—"

"You know nothing of it!"

And Paul, suddenly unable to express the knowledge-gained-out-of-its-Time, said only: "I don't think you unnatural."

She saw his distress, said: "There is a thing, son."

"Yes?"

"I do love your Chani. I accept her."

This was real, Paul told himself. This wasn't the imperfect vision to be changed by the twistings out of Time's own birth.

The reassurance gave him a new hold on his world. Bits of solid reality began to dip through the dream state into his awareness. He knew suddenly that he was in a *hiereg,* a desert camp. Chani had planted their stilltent on flour-sand for its softness. That could only mean Chani was nearby—Chani, his soul, Chani his Sihaya, sweet as the desert spring, Chani up from the palmaries of the deep south.

Now, he remembered her singing a sand chanty to him in the time for sleep—

"O my soul,
Have no taste for Paradise this night,
And I swear by Shai-hulud
You will go there,
Obedient to my love."

And she had sung the walking song lovers shared on the sand, its rhythm like the drag of the dunes against the feet—

"Tell me of thine eyes
And I will tell thee of thy heart.
Tell me of thy feet
And I will tell thee of thy hands.
Tell me of thy sleeping
And I will tell thee of thy waking.
Tell me of thy desires
And I will tell thee of thy need."

He had heard someone strumming a baliset in another tent. And he'd thought then of Gurney Halleck, reminded by the familar instrument. He had thought of Gurney whose face he had seen in a smuggler band, but who had not seen him, could not see him or know of him lest that inadvertently lead the Harkonnens to the son of the Duke they had killed.

But the style of the player in the night, the distinctiveness of the fingers on the baliset's strings, brought the real musician back to Paul's memory. It had been Chatt the Leaper, captain of the Fedaykin, leader of the death commandos who guarded Maud'Dib.

We are in the desert, Paul remembered. *We are in the central erg beyond the Harkonnen patrols. I am here to walk the sand, to lure a Maker and mount him by my own cunning that I may be a Fremen entire.*

He felt now the maula pistol at his belt, the crysknife. He felt the silence surrounding him.

It was that special pre-morning silence when the nightbirds had gone and the day creatures had not yet signaled their alertness to their enemy, the sun.

"You must ride the sand in the light of day that Shai-hulud shall see and know you have no fear," Stilgar had said. "Thus we turn our time around and set ourselves to sleep this night."

Quietly Paul sat up, feeling the looseness of a slacked stillsuit around his body, the shadowed stilltent beyond. So softly he moved, yet Chani heard him.

She spoke from the tent's gloom, another shadow there: "It's not yet full light, beloved."

"Sihaya," he said, speaking with half a laugh in his voice.

"You call me your desert spring," she said, "but this day I'm thy goad. I am the sayyadina who watches that the Rites be obeyed."

He began tightening his stillsuit. "You told me once the words of the Kitab al-Ibar," he said. "You told me: 'Woman is thy field; go then to thy field and till it.'"

"I am the mother of thy firstborn," she agreed.

He saw her in the grayness matching him movement for movement, securing her stillsuit for the open desert. "You should get all the rest you can," she said.

He recognized her love for him speaking then and chided her gently: "The Sayyadina of the Watch does not caution or warn the candidate."

She slid across to his side, touched his cheek with her palm. "Today, I am both the Watcher and the woman."

"You should've left this duty to another," he said.

"Waiting is bad enough at best," she said. "I'd sooner be at thy side."

He kissed her palm before securing the faceflap of his suit, then turned and cracked the seal of the tent. The air that came in to them held the chill not-quite-dryness that would precipitate trace dew in the dawn. With it came the smell of a prespice mass, the mass they had detected off to the northeast, and that told them there would be a Maker nearby.

Paul crawled through the sphincter opening, stood on the sand and stretched the sleep from his muscles. A faint green-pearl luminescence etched the eastern horizon. The tents of his troop were small false dunes around him in the gloom. He saw movement off to the left—the guard, and knew they had seen him.

They knew the peril he faced this day. Each Fremen had faced it. They gave him this last few moments of isolation now that he might prepare himself.

It must be done today, he told himself.

He thought of the power he wielded in the face of the pogrom —the old men who sent their sons to him to be trained in the weirding way of battle, the old men who listened to him now in council and followed his plans, the men who returned to pay him that highest Fremen compliment: "Your plan worked, Muad'Dib."

Yet the meanest and smallest of the Fremen warriors could do a thing he had never done. And Paul knew his leadership suffered from the omnipresent knowledge of this difference.

He had not ridden the Maker.

Oh, he'd gone up with the others for training and raids, but he'd not made his own voyage. Until he did, even the great southlands—some twenty thumpers beyond the erg—were denied him unless he ordered up a palanquin and rode like a Reverend Mother or one of the sick and wounded.

Memory returned of his wrestling with the inner awareness during the night. He saw a strange parallel here. Prescience had given him the experiences of near infinite lives, but unless he integrated them with his moving-now, his own fluid point-events of living, those experiences remained as useless as a wild Maker . . . another *creature* he had failed to master. All those experiences remained like instincts that he could not use.

His own special way of comprehending the universe haunted Paul. Prescience gave it to him *in situ*. Yet, when the *now* was born and came into the pressures of reality, it had its own life and sprouted subtle differences. It was like a body with many faces . . . and the body was always his old Terrible Purpose, the Race Consciousness shaping its wild and bloody jihad.

I have the wisdoms of many lifetimes, he thought. *Yet, I live only one lifetime in which to choose the right set of wisdoms.*

Chani joined him, hugging her elbows and looking up sideways as she did when she studied his mood.

"Tell me about the waters of thy birthworld, Usul," she said.

He saw she was trying to distract him, ease his mind before the deadly test. It was growing lighter. He noted that some of his Fedaykin already were striking their tents.

"I'd rather you told me about the sietch and about our son," he said. "Does our Leto yet hold my mother in his palm?"

"It's Alia he holds as well," she said. "And he grows rapidly."

"What's it like in the south?" he asked.

"When you ride the Maker you'll see for yourself," she said.

"But I wish to see it first through your eyes."

"It's powerfully lonely," she said.

He touched the nezhoni scarf at her forehead where it protruded from her stillsuit cap. "Why will you not talk about the sietch?"

"I have talked about it. The sietch is a lonely place without our men. It's a place of work. We labor in the factories and the potting rooms. There are weapons to be made, poles to plant that we may forecast the weather, spice to collect for the bribes. There are dunes to be planted to make them grow and to anchor them. There are fabrics and rugs to make, fuel cells to charge. There are children to train that the Tribe's strength may never be lost."

"Is nothing then pleasant in the sietch?" he asked.

"The children are pleasant. We observe the Rites. We have sufficient food. Sometimes one of us may come north to be with her man. Life must go on."

"My sister, Alia—is she accepted yet by the people?"

Chani turned toward him in the growing dawnlight. Her eyes bored into him. "It's a thing to be discussed another time, beloved."

"Let us discuss it now."

"You should conserve your energies for the test," she said.

He saw that he had touched something sensitive, hearing the withdrawal in her voice. "The unknown brings its own worries," he said.

Presently, she nodded, said: "There is yet . . . misunderstanding because of Alia's strangeness. The women are fearful because a child little more than an infant talks . . . of things that only an adult should know. They do not understand the . . . change in the womb that made Alia . . . different."

"There is trouble?" he asked. and he thought: *I've seen visions of trouble over Alia.*

Chani looked toward the growing line of the sunrise. "Some of the women banded to appeal to the Reverend Mother. They demanded she exorcise the demon in her daughter. They quoted the scripture: 'Suffer not a witch to live among us.' "

"And what did my mother say to them?"

"She recited the law and sent the women away abashed. She said: 'If Alia incites trouble, it is the fault of authority for not foreseeing and preventing the trouble!' And she tried to explain how the change had worked on Alia in the womb. But the women were angry because they had been embarrassed. They went away muttering."

There will be trouble because of Alia, he thought.

A crystal blowing of sand touched the exposed portions of his face bringing the scent of the pre-spice mass. "El Sayal, the rain of sand that brings the morning," he said.

He looked out across the gray light of the desert landscape, the landscape beyond pity, the sand that was form absorbed in itself. Dry lightning streaked a dark corner to the south—sign that a storm had built up its static charge there.

The roll of thunder boomed long after.

"The voice that beautifies the land," Chani said.

More of his men were stirring out of their tents. Guards were coming in from the rims. Everything around him moved smoothly in the ancient routine that required no orders.

"Give as few orders as possible," his father had told him . . . once . . . long ago. "Once you've given orders on a subject, you must always give orders on that subject."

The Fremen knew this rule instinctively.

The troop's watermaster began the morning chanty, adding now the call for the Rite to initiate a Sandrider.

"The world is a carcass," the man chanted, his voice wailing across the dunes. "Who can turn away the Angel of Death? What Shai-hulud has decreed must be."

Paul recognized that these were also the words that began the death chant of his Fedaykin, the words the death commandos chanted as they hurled themselves into battle.

Will there be a rock shrine here to mark the passing of another soul? Paul asked himself. *Will generations of Fremen stop here, each to add a stone and think on Muad'-Dib who died in this place?*

That was one of the alternate world lines radiating from this point in Time/Space. And Paul had come to realize that the greatest wisdom required him to be as ruthless with his own life as he was with the lives of others. Any other course led to an ultimate stagnation which was in fact a self-cruelty of infinite dimensions. He had no choice really except to plunge into the violent nexus that fogged and clouded his prescience.

"Stilgar approaches," Chani said. "We must part now, beloved. I must be sayyadina and observe that the Rite may be reported truly in the Chronicles." She looked up and, for a moment, her reserve slipped and her face contorted. Then she had herself under control. "When this is past, I shall prepare thy breakfast," she said, and turned away.

Stilgar crossed the flour sand, stirring up little dust puddles. The untamed stare of his eyes in their dark niches remained focused on Paul. The lines of craggy cheeks could have been wind-etched from the native rock for all their movement.

The man carried Paul's banner on its staff—the green and black banner with a water tube in the staff—that already was a legend in the land. Half pridefully, Paul thought: *I cannot do the simplest thing without its becoming a legend. They will mark how I parted from Chani, how I greet Stilgar—every move I make this day. Live or die, it is a legend. I must not die. Then it will be only legend and nothing to stop the jihad.*

Stilgar planted the staff in the

sand beside Paul, dropped his hands to his sides. The blue-within-blue eyes remained level and intent. And Paul thought how his own eyes already were assuming this mask of color from the spice.

"They denied us the Hajj," Stilgar said with ritual solemnity.

As Chani had taught him, Paul responded: "Who can deny a Fremen the right to walk or ride where he wills?"

"I am a Naib," Stilgar said, "never to be taken alive. I am a leg of the death tripod that will destroy our foes."

Silence settled over them.

Paul glanced at the other Fremen scattered over the sand beyond Stilgar, the way they stood without moving for this moment of personal prayer. And he thought of how the Fremen were a people whose living consisted of killing, an entire people who had lived with rage and grief all of their days, never once considering what might take the place of either—except for the dream with which Liet-Kynes had infused them before his death.

"Where is the Lord who led us through the land of desert and of pits?" Stilgar asked.

"He is ever with us," the Fremen chanted.

Stilgar squared his shoulders, stepped closer to Paul and lowered his voice. "Now, remember what I told you. Do it simply and directly —nothing fancy. Among our people, we ride the Maker at the age of twelve. You are more than six years beyond that age and not born to this life. You don't have to impress anyone with your courage. We know you are brave. All you must do is call the Maker and ride Him."

"I will remember," Paul said.

"See that you do. I'll not have you shame my teaching."

Stilgar pulled a plastic rod about a meter long from beneath his robe. The thing was pointed at one end, had a springwound clapper at the other end. "I prepared this thumper myself. It's a good one. Take it."

Paul felt the warm smoothness of the plastic as he accepted the thumper.

"Shishakli has your hooks," Stilgar said. "He'll hand them to you as you step out onto that dune over there." He pointed to his right. "Call a big Maker, Usul. Show us the way."

Paul marked the tone of Stilgar's voice—half ritual and half that of a worried friend.

In that instant the sun seemed to bound above the horizon. The sky took on the silvered gray-blue that warned this would be a day of extreme heat and dryness even for Arrakis.

"It is the time of the scalding day," Stilgar said, and now his voice was entirely ritual. "Go, Usul, and ride the Maker, travel the sand as a leader of men."

Paul saluted his banner, noting

how the green and black flag hung limply now that the dawn wind had died. He turned toward the dune Stilgar had indicated—a dirty tan slope with an S-track crest. Already, most of the troop was moving out in the opposite direction, climbing the other dune that had sheltered their camp.

One robed figure remained in Paul's path: Shishakli, a squad leader of the Fedaykin, only his slope-lidded eyes visible between stillsuit cap and mask.

Shishakli presented two thin whiplike shafts as Paul approached. The shafts were about a meter and a half long with glistening plasteel hooks at one end, roughened at the other end for a firm grip.

Paul accepted them both in his left hand as required by the ritual.

"They are my own hooks," Shishakli said in a husky voice. "They have never failed."

Paul nodded, maintaining the necessary silence, moved past the man and up the dune slope. At the crest, he glanced back, saw the troop scattering like a flight of insects, their robes fluttering. He stood alone now on the sandy ridge with only the horizon in front of him, the flat and unmoving horizon. This was a good dune Stilgar had chosen, higher than its companions for the viewpoint vantage.

Stooping, Paul planted the thumper deep into the windward face where the sand was compacted and would give maximum transmission to the drumming. Then he hesitated, reviewing the lessons, reviewing the life and death necessities that faced him.

When he threw the latch, the thumper would begin its summons. Across the sand, a giant worm—a Maker—would hear and come to the drumming. With the whiplike hook-staffs, Paul knew, he could mount the Maker's high curving back. For as long as a forward edge of a worm's ring segment was held open by a hook, open to admit abrasive sand into the more sensitive interior, the creature would not retreat beneath the desert. It would, in fact, roll its gigantic body to bring the opened segment as far away from the desert surface as possible.

I am a Sandrider, Paul told himself.

He glanced down at the hooks in his left hand, thinking that he had only to shift those hooks down the curve of a Maker's immense side to make the creature roll and turn, guiding it where he willed. He had seen it done. He had been helped up the side of a worm for a short ride in training. The captive worm could be ridden until it lay exhausted and quiescent upon the desert surface and a new Maker must be summoned.

Once he was past this test, Paul knew, he was qualified to make the twenty-thumper journey into the southland—to rest and restore himself—into the south where the wom-

en and the families had been hidden from the pogrom among the new palmaries and sietch warrens.

He lifted his head and looked to the south, reminding himself that the Maker summoned wild from the erg was an unknown quantity, and the one who summoned it was equally unknown to this test.

"You must gauge the approaching Maker carefully," Stilgar had explained. "You must stand close enough that you can mount it as it passes, yet not so close that it engulfs you."

With abrupt decision, Paul released the thumper's latch. The clapper began revolving and the summons drummed through the sand, a measured "Lump . . . lump . . . lump—"

He straightened, scanning the horizon, remembering Stilgar's words: "Judge the line of approach carefully. Remember, a worm seldom makes an unseen approach to a thumper. Listen all the same. You may often hear it before you see it."

And Chani's words of caution, whispered at night when her fear for him overcame her, filled his mind: "When you take your stand along the Maker's path, you must remain utterly still. You must think like a patch of sand. Hide beneath your cloak and become a little dune in your very essence."

Slowly, he scanned the horizon, listening, watching for the signs he had been taught.

It came from the southeast, a distant hissing, a sand whisper. Presently, he saw the far away outline of the creature's track against the dawnlight and realized he had never before seen a Maker this large, never heard of one this size. It appeared to be more than half a league long, and the rise of the sandwave at its cresting head was like the approach of a mountain.

This is nothing I have seen by vision or in life, Paul cautioned himself. He hurried across the path of the thing to take his stand, caught up entirely by the rushing needs of this moment.

XIX

"Control the coinage and the courts—let the rabble have the rest." Thus the Padishah Emperor advises you. And he tells you: "If you want profits, you must rule." There is truth in these words, but I ask myself: "Who are the rabble and who are the ruled?"

Muad'Dib's Secret Message to
the Landsraad
from "Arrakis Awakening"
by The Princess Irulan

A thought came unbidden to Jessica's mind: *Paul will be undergoing his sandrider test at any moment now. They try to conceal this fact from me, but it's obvious.*

And Chani has gone on some mysterious errand.

Jessica sat in her resting chamber, catching a moment of quiet be-

tween the night's classes. It was a pleasant chamber, but not as large as the one she had enjoyed in the Tabr sietch before their flight from the pogrom. Still, this place had thick rugs on the floor, soft cushions, a low coffee table near at hand, multicolored hangings on the walls and soft yellow glowtubes overhead. The room was permeated with the distinctive acrid/furry odor of a Fremen sietch that she had come to associate with a sense of security.

Yet, she knew she would never overcome a feeling of being in an alien place. It was the harshness that the rugs and hangings attempted to conceal.

A faint tinkling-drumming-slapping penetrated to the resting chamber. Jessica knew it for a birth celebration, probably Subiay's. Her time was near. And Jessica knew she'd see the baby soon enough—a blue-eyed cherub brought to the Reverend Mother for blessing. She knew also that her daughter, Alia, would be at the celebration and would report on it.

It was not yet time for the nightly prayer of parting. They wouldn't have started a birth celebration near the time of ceremony that mourned the slave raids of Poritrin, Bele Tegeuse, Rossak and Harmonthep.

Jessica sighed. She knew she was trying to keep her thoughts off her son and the dangers he faced—the pit traps with their poisoned barbs, the Harkonnen raids (although these were growing fewer as the Fremen took their toll of aircraft and raiders), and the natural dangers of the desert—Makers and thirst and dust chasms.

She thought of calling for coffee and with the thought came that ever present awareness of paradox in the Fremen way of life: how well they lived in these sietch caverns compared to the graben pyons; yet, how much more they endured in the open hajr of the desert than anything the Harkonnen bondsmen endured.

A dark hand inserted itself through the hangings beside her, deposited a cup upon the table and withdrew. From the cup arose the aroma of spiced coffee.

An offering from the birth celebration, Jessica thought.

She took the coffee and sipped it, smiling at herself. *In what other society of our universe,* she asked herself, *could a person of my station accept an anonymous drink and quaff that drink without fear? I could alter any poison now before it did me harm, of course, but the donor doesn't realize this.*

She drained the cup, feeling the energy and lift of its contents—hot and delicious.

And she wondered what other society would have such a natural regard for her privacy and comfort that the giver would intrude only enough to deposit the gift and not inflict her with the donor? Respect

and love had sent the gift—with only a slight tinge of fear.

Another element of the incident forced itself into her awareness: she had thought of coffee and it had appeared. There was nothing of telepathy here, she knew. It was the *tau*, the oneness of the sietch community, a compensation from the subtle poison of the spice diet they shared. The great mass of the people could never hope to attain the enlightenment the spice seed brought to her; they had not been trained and prepared for it. Their minds rejected what they could not understand or encompass. Still they felt and reacted sometimes like a single organism.

And the thought of coincidence never entered their minds.

Has Paul passed his test on the sand? Jessica asked herself. *He's capable, but accident can strike down even the most capable.*

The waiting.

It's the dreariness, she thought. *You can wait just so long, then the dreariness of the waiting overcomes you.*

There was all manner of waiting in their lives.

More than two years we've been here, she thought, *and twice that number at least to go before we can even hope to think of trying to wrest Arrakis from the Harkonnen governor, the Mudir Nahya, the Beast Rabban.*

"Reverend Mother?"

The voice from outside the hangings at her door was that of Harah, the *other woman* in Paul's menage, the servant who was his responsibility because she had been Jamis' wife and Paul had killed Jamis in formal battle.

"Yes, Harah."

The hangings parted and Harah seemed to glide through them. She wore sietch sandals, a red-yellow wraparound that exposed her arms almost to the shoulders. Her black hair was parted in the middle and swept back like the wings of an insect, flat and oily against her head. The jutting, predatory features were drawn into an intense frown.

Behind Harah came a girlchild of about two years—Alia.

Seeing her daughter, Jessica was caught as she frequently was by Alia's resemblance to Paul at that age—the same wide-eyed solemnity to her questing look, the dark hair and firmness of mouth. But there were subtle differences, too, and it was in these that most adults found Alia disquieting. The child—little more than a toddler—carried herself with a calmness and awareness beyond her years. Adults were shocked to find her laughing at a subtle play of words between the sexes. Or they'd catch themselves listening to her half-lisping voice, still blurred as it was by an unformed soft palate, and discover in her words sly remarks that could only be based on experiences no two-year-old had ever encountered.

Harah sank to a cushion with an exasperated sigh, frowned at the child.

"Alia." Jessica motioned to her daughter.

The child crossed to a cushion beside her mother, sank to it and clasped her mother's hand. The contact of flesh restored that mutual awareness they had shared since the moment when Jessica had changed the spice liquor's poison while carrying the child in her womb. It wasn't a matter of shared thoughts—although there were bursts of that if they touched while Jessica was changing the spice poison for a ceremony. It was something larger, an immediate awareness of another living spark, a sharp and poignant thing, a nerve-sympatico that made them emotionally one.

In the formal manner that befitted a member of her son's household, Jessica said: "Subakh ul kuhar, Harah. This night finds you well?"

With the same traditional formality, she said: "Subakh un nar. I am well." The words were almost toneless. Again, she sighed.

Jessica sensed amusement from Alia.

"My brother's *ghanima* is annoyed with me," Alia said in her half lisp.

Jessica marked the term Alia used to refer to Harah—*ghanima*. In the subtleties of the Fremen tongue, the word meant *something-acquired-in-battle* and with the added overtone that the something no longer was used for its original purpose. An ornament, a spearhead used as a curtain weight.

Harah scowled at the child. "Don't try to insult me, child. I know my place."

"What have you done this time, Alia?" Jessica asked.

Harah answered: "Not only has she refused to play with the other children today, but she intruded where—"

"I hid behind the hangings and watched Subiay's child being born," Alia said. "It's a boy. He cried and cried. What a set of lungs! When he'd cried long enough . . ."

"She came out and touched him," Harah said, "and he stopped crying. Everyone knows a Fremen baby must get his crying done at birth if he's in sietch because he can never cry again lest he betray us on hajr."

"He'd cried enough," Alia said. "I just wanted to feel his spark, his life. That's all. And when he felt me he didn't want to cry any more."

"It's just made more talk among the people," Harah said.

"Subiay's boy is healthy?" Jessica asked. She saw that something was troubling Harah deeply and wondered at it.

"Healthy as any mother could ask," Harah said. "They know Alia didn't hurt him. They didn't so much mind her touching him. He settled down right away and was happy. It was—" Harah shrugged.

"It's the strangeness of my daughter, is that it?" Jessica asked. "It's the way she speaks of things beyond her years and of things no child her age could know, things of the past."

"How could she know what a child looked like on Bele Tegeuse?" Harah demanded.

"But he does!" Alia said. "Subiay's boy looks just like the son of Mitha born before the parting."

"Alia!" Jessica said. "I warned you."

"But mother, I saw it and it was true and—"

Jessica shook her head, seeing the signs of disturbance in Harah's face. *What have I born?* Jessica asked herself. *A daughter who knew at birth everything that I knew . . . and more: everything revealed to her out of the corridors of the past by the Reverend Mothers within me.*

"It's not just the things she says," Harah said. "It's the exercises, too: the way she sits and stares at a rock, moving only one muscle beside her nose, or a muscle on the back of a finger, or—"

"Those are the Bene Gesserit training," Jessica said. "You know that, Harah. Would you deny my daughter her inheritance?"

"Reverend Mother, you know these things don't matter to me," Harah said. "It's the people and the way they mutter. I feel danger in it. They say your daughter's a demon, that other children refuse to play with her, that she's—"

"She has so little in common with the other children," Jessica said. "She's no demon. It's just the—"

"Of course she's not!"

Jessica found herself surprised at the vehemence in Harah's tone, glanced down at Alia. The child appeared lost in thought, radiating a sense of . . . waiting. Jessica returned her attention to Harah.

"I respect the fact that you're a member of my son's household," Jessica said. (Alia stirred against her hand.) "You may speak openly with me whatever's troubling you."

"I will not be a member of your son's household much longer," Harah said. "I've waited this long for the sake of my sons, the special training *they* receive as the children of Usul. It's little enough I could give them since it's known I don't share your son's bed."

Again, Alia stirred beside her, half-sleeping, warm.

"You'd have made a good companion for my son, though," Jessica said. And she added to herself because such thoughts were ever with her: *Companion . . . not a wife.* Jessica's thoughts went then straight to the center, to the pang that came from the common talk in the sietch that her son's companionship with Chani had become the permanent thing, the marriage.

I love Chani, Jessica thought, but she reminded herself that love might have to step aside for royal

necessity. Royal marriages had other reasons than love.

"You think I don't know what you plan for your son?" Harah asked.

"What do you mean?" Jessica demanded.

"You plan to unite the tribes under *Him*," Harah said.

"Is that bad?"

"I see danger for him . . . and Alia is part of that danger."

Alia nestled closer to her mother, eyes opened now, studying Harah.

"I've watched you two together," Harah said, "the way you touch. And Alia is like my own flesh because she's sister to one who is like my brother. I've watched over her and guarded her from the time she was a mere baby, from the time of the razzia when we fled here. I've seen many things about her."

Jessica nodded, feeling disquiet begin to grow in Alia beside her.

"You know what I mean," Harah said. "The way she knew from the first what we were saying to her. When has there been another baby who knew the water discipline so young? What other baby's first words to her nurse were: 'I love you, Harah?' "

Harah stared at Alia. "Why do you think I accept her insults? I know there's no malice in them."

Alia looked up at her mother.

"Yes, I have reasoning powers, Reverend Mother," Harah said. "I could have been of the sayyadina. I have seen what I have seen."

"Harah . . ." Jessica shrugged. "I don't know what to say." And she felt surprise at herself, because this literally was true.

Alia straightened, squared her shoulders. Jessica felt the sense of waiting-ended, an emotion compounded of decision and sadness.

"We made a mistake," Alia said. "Now, we need Harah."

"It was the ceremony of the seed," Harah said, "when you changed the Water of Life, Reverend Mother, when Alia was yet unborn within you."

Need Harah? Jessica asked herself.

"Who else can talk among the people and make them begin to understand me?" Alia asked.

"What would you have her do?" Jessica asked.

"She already knows what to do," Alia said.

"I will tell them the truth," Harah said. Her face seemed suddenly old and sad with its olive skin drawn into frown wrinkles, a witchery in the sharp features. "I will tell them that Alia only pretends to be a little girl, that she has never been a little girl."

Alia shook her head. Tears ran down her cheeks, and Jessica felt the wave of sadness from her daughter as though the emotion were her own.

"I know I'm a freak," Alia whispered. The adult summation coming from the child mouth was like a bitter confirmation.

"You're not a freak!" Harah snapped. "Who dared say you're a freak?"

Again, Jessica marveled at the fierce note of protectiveness in Harah's voice. Jessica saw then that Alia had judged correctly—they did need Harah. The tribe would understand Harah—both her words and her emotions—for it was obvious she loved Alia as though this were her own child.

"Who said it?" Harah repeated.

"Nobody."

Alia used a corner of Jessica's aba to wipe her face. She smoothed the robe where she had dampened and crumpled it.

"Then don't you say it," Harah ordered.

"Yes, Harah."

"Now," Harah said, "you may tell me what it was like so that I may tell the others. Tell me what it is that happened to you."

Alia swallowed, looked up at her mother.

Jessica nodded.

"One day I woke up," Alia said. "It was like waking from sleep except that I could not remember going to sleep. I was in a warm, dark place. And I was frightened."

Listening to the half-lisping voice of her daughter, Jessica remembered that day in the big cavern—the death of the old Reverend Mother whose life and experiences were now incorporated among her own personal memories.

"When I was frightened," Alia said, "I tried to escape, but there was no way to escape. Then I saw a spark . . . but it wasn't exactly like seeing it. The spark was just there with me and I felt the spark's emotions . . . soothing me, comforting me, telling me that way that everything would be all right. That was my mother."

Harah rubbed at her eyes, smiled reassuringly at Alia. Yet, there was a look of wildness in the eyes of the Fremen woman, an intensity as though they, too, were trying to hear Alia's words.

And Jessica thought: *What do we really know of how such a one thinks . . . out of her unique experiences and training and ancestry?*

"Just when I felt safe and reassured," Alia said, "there was another spark with us . . . and everything was happening at once. The other spark was the old Reverend Mother. She was . . . trading lives with my mother . . . everything . . . and I was there with them, seeing it all . . . everything. And it was over, and I was them and all the others and myself . . . only it took me a long time to find myself again. There were so many others."

"It was a cruel thing," Jessica said. "No being should wake into consciousness thus. The wonder of it is you could accept all that happened to you."

"I couldn't do anything else!" Alia said. "I didn't know to reject

or hide my consciousness . . . or shut it off . . . everything just happened . . . everything . . ."

"We didn't know," Harah murmured. "When we gave your mother the Waters to change, we didn't know you existed within her."

"Don't be sad about it, Harah," Alia said. "I shouldn't feel sorry for myself. After all, there's cause for happiness here: I'm a Reverend Mother. The Tribe has two Rev—"

She broke off, tipping her head to listen.

Harah rocked back on her heels against the sitting cushion, stared at Alia, bringing her attention then up to Jessica's face.

"Didn't you suspect?" Jessica asked.

"Shhhh," Alia said.

A distant rhythmic chanting came to them then through the hangings that separated them from the sietch corridors. It grew louder, carrying distinct sounds now: "Ya! Ya! Yawm! Ya! Ya! Yawm! Mu zein, wallah! Ya! Ya! Yawm! Mu zein, Wallah!"

The chanters passed the outer entrance, and their voices boomed through to the inner apartments. Slowly, the sound receded.

When the sound had dimmed sufficiently, Jessica began the ritual, sadness in her voice: "It was Ramadhan and April on Bela Tegeuse."

"My family sat in their pool courtyard," Harah said, "in air bathed by the moisture that arose from the spray of a fountain. There was a tree of portyguls, round and deep in color, near at hand. There was a basket with mish mish and baklawa and mugs of liban—all manner of good things to eat. In our gardens and in our flocks, there was peace . . . peace in all the land."

"Life was full with happiness until the raiders came," Alia said.

"Blood ran cold at the screams of friends," Jessica said. And she felt the memories rushing through her out of all those other pasts she shared.

"La, la, la, the women cried," said Harah.

"The raiders came through the mushtamal, rushing at us with their knives dripping red from the lives of our men," Jessica said.

Silence came over the three of them as it was in all the apartments of the sietch, the silence while they remembered and kept their grief thus fresh.

Presently, Harah uttered the ritual ending to the ceremony, giving the words a harshness that Jessica had never before heard in them.

"We will never forgive and we will never forget," Harah said.

In the thoughtful quiet that followed her words, they heard a muttering of people, the swish of many robes. Jessica sensed someone standing beyond the hangings that shielded her chamber.

"Reverend Mother?"

A woman's voice, and Jessica

recognized it : the voice of Tharthar, one of Stilgar's wives.

"What is it, Tharthar?"

"There is trouble, Reverend Mother."

Jessica felt a constriction at her heart, an abrupt fear for Paul. "Paul—" she gasped.

Tharthar spread the hangings, stepped into the chamber. Jessica glimpsed a press of people in the outer room before the hangings fell. She looked up at Tharthar—a small, dark woman in a red-figured robe of black, the total blue of her eyes trained fixedly on Jessica, the nostrils of her tiny nose dilated to reveal the plug scars.

"What is it?" Jessica demanded.

"There is word from the sand," Tharthar said. "Usul meets the Maker for his test . . . it is today. The young men say he cannot fail, he will be a sandrider by nightfall. The young men are banding for a razzia. They will raid in the north and meet Usul there. They say they will raise the cry then. They say they will force him to call out Stilgar and assume command of the Tribes."

Gathering water, planting the dunes, changing their world slowly but surely—these are no longer enough, Jessica thought. *The little raids, the certain raids—these are no longer enough now that Paul and I have trained them. They feel their power. They want to fight.*

Tharthar shifted from one foot to the other, cleared her throat.

We know the need for cautious waiting, Jessica thought, *but there's the core of our frustration. We know also the harm that waiting extended too long can do us. We lose our sense of purpose if the waiting's prolonged.*

"The young men say if Usul does not call out Stilgar, then he must be afraid," Tharthar said.

She lowered her gaze.

"So that's the way of it," Jessica muttered. And she thought: *Well, I saw it coming. As did Stilgar.*

Again, Tharthar cleared her throat. "Even my brother, Shoab, says it," she said. "They will leave Usul no choice."

Then it has come, Jessica thought. *And Paul will have to handle it himself. The Reverend Mother dare not become involved in the succession.*

Alia freed her hand from her mother's, said: "I will go with Tharthar and listen to the young men. Perhaps there is a way."

Jessica met Tharthar's gaze, but spoke to Alia: "Go, then. And report to me as soon as you can."

"We do not want this thing to happen, Reverend Mother," Tharthar said.

"We do not want it," Jessica agreed. "The Tribe needs *all* its strength." She glanced at Harah. "Will you go with them?"

Harah answered the unspoken part of the question: "Tharthar will allow no harm to befall Alia. She knows we will soon be wives to-

gether, she and I, to share the same man. We have talked, Tharthar and I." Harah looked up at Tharthar, back to Jessica. "We have an understanding."

Tharthar held out a hand for Alia, said: "We must hurry. The young men are leaving."

They pressed through the hangings, the child's hand in the small woman's hand, but the child seemed to be leading.

"If Paul-Muad'Dib slay Stilgar, this will nor serve the Tribe," Harah said. "Always before, it has been the way of succession, but times have changed."

"Times have changed for you, as well," Jessica said.

"You cannot think I doubt the outcome of such a battle," Harah said. "Usul could not but win."

"That was my meaning," Jessica said.

"And you think my personal feelings enter into my judgment," Harah said. She shook her head, her water rings tinkling at her neck. "How wrong you are. Perhaps you think, as well, that I regret not being the chosen of Usul, that I am jealous of Chani?"

"You make your own choice as you are able," Jessica said.

"I pity Chani," Harah said.

Jessica stiffened. "What do you mean?"

"I know what you think of Chani," Harah said. "You think she is not the wife for your son."

Jessica settled back, relaxed on her cushions. "Perhaps," she said.

"You could be right," Harah said. "If you are, you may find a surprising ally—Chani herself. She wants whatever is best for *Him.*"

Jessica swallowed past a sudden tightening in her throat. "Chani's very dear to me," she said. "She could be no—"

"Your rugs are very dirty in here," Harah said. She swept her gaze around the floor, avoiding Jessica's eyes. "So many people tramping through here all the time. You really should have them cleaned more often."

XX

You cannot avoid the interplay of politics within an orthodox religion. This power struggle permeates the training, educating and disciplining of the orthodox community. Because of this pressure, the leaders of such a community inevitably must face that ultimate internal question: to succumb to complete opportunism as the price of maintaining their rule, or risk sacrificing themselves for the sake of the orthodox ethic.

"Muad'Dib: The Religious Issues"
by The Princess Irulan

Paul waited on the sand outside the gigantic Maker's line of approach. *I must not wait like a smuggler—impatient and jittering,* he reminded himself. *I must be part of the desert.*

The thing was only minutes away now, filling the morning with the friction-hissing of its passage, its great teeth within the cavern-circle of its mouth spreading open like some enormous flower. The odor of spice from it dominated the air.

His stillsuit rode easily on his body and he was only distantly aware of his nose plugs, the breathing mask. Stilgar's teaching, the painstaking hours on the sand, overshadowed all else in his mind.

"How far outside the Maker's radius must you stand in pea sand?" Stilgar had asked him.

And he had answered correctly: "Half a meter for every meter of the Maker's diameter."

"Why?"

"To avoid the vortex of its passage and still have time to run in and mount it."

"You see how many things you must know?" Stilgar said. "It is not enough that your knuckles against the sand can imitate the passage of a mouse."

"You are the teacher and I the pupil, Stil."

"You've ridden the little ones bred for the seed and the Water of Life," Stilgar said. "And you've been taken up for the training rides on bigger ones. But what you'll summon for your test is a wild Maker, an old man of the desert. You must have proper respect for such a one."

The thumper's deep drumming blended now with the hiss of the approaching worm. Paul breathed deeply, smelling a mineral bitterness of sand even through his filters. The wild Maker, the old man of the desert, was almost on him. Its cresting front segments were throwing a sandwave that would sweep across his knees.

Come up, you lovely monster, he thought. *Up. You hear me calling.*

The sandwave lifted his feet. Surface dust swept across him. He steadied himself, his world dominated by the passage of that sand-clouded curving wall, that segmented cliff, the ring lines sharply defined in it.

Paul lifted his hooks, sighted along them, leaned in. He felt them bite and pull him. He leaped upward, planting his feet against that wall, leaning out against the clinging barbs. This was the true instant of testing: if he had planted the hooks correctly at the leading edge of a ring segment, opening the segment, the worm would not roll down and crush him.

The worm slowed. It glided across the thumper, silencing it. Slowly, it began to roll—up, up—bringing those irritant barbs as high as possible, away from the sand that threatened the soft inner lapping of its ring segment.

Paul found himself riding upright atop the worm. He felt exultant, like an emperor surveying his world. He suppressed a sudden urge to cavort there, to turn the worm, to show off his mastery of this creature.

Suddenly, he understood why Stilgar had warned him once about brash young men who danced and played with these monsters, doing handstands on their backs, removing both hooks and replanting them before the worm could spill them.

Leaving one hook in place, Paul released the other and planted it lower down the side. When the second hook was firm and tested, he brought down the first one, thus worked his way down the side. The Maker rolled, and as it rolled, it turned, coming around the sweep of flour sand where the others waited.

Paul saw them come up, using their hooks to climb, but avoiding the sensitive ring edges until they were on top. They rode at last in a triple line behind him, steadied against their hooks.

Stilgar moved up through the ranks, checked the positioning of Paul's hooks, glanced up at Paul's smiling face.

"You did it, eh?" Stilgar asked, raising his voice above the hiss of their passage. "That's what you think? You did it?" He straightened. "Now, I tell you that was a very sloppy job. We have twelve-year-olds who do better. There was drumsand to your left where you waited. You could not retreat there if the worm turned that way."

The smile slipped from Paul's face. "I saw the drumsand."

"Then why did you not signal for one of us to take up position secondary to you? It was a thing you could do even in the test."

Paul swallowed, faced into the wind of their passage.

"You think it bad of me to say this now," Stilgar said. "It is my duty. I think of your worth to the troop. If you had stumbled into that drumsand, the Maker would've turned toward you."

In spite of a surge of anger, Paul knew that Stilgar spoke the truth. It took a long minute and the full effort of the training he had received from his mother for Paul to recapture a feeling of calm. "I apologize," he said. "It will not happen again."

"In a tight position, always leave yourself a secondary, someone to take the Maker if you cannot," Stilgar said. "Remember that we work together. That way, we're certain. We work together, eh?"

He slapped Paul's shoulder.

"We work together," Paul agreed.

"Now," Stilgar said, and his voice was harsh, "show me you know how to handle a Maker. Which side are we on?"

Paul glanced down at the scaled ring surface on which they stood, noted the character and size of the scales, the way they grew larger off to his right, smaller to his left. Every worm, he knew, moved characteristically with one side up more frequently. As it grew older, the characteristic up-side became an almost constant thing. Bottom scales grew larger, heavier, smoother.

Top scales could be told by size alone on a big worm.

Shifting his hooks, Paul moved to the left. He motioned flankers down to open segments along the side and keep the worm on a straight course as it rolled. When he had it turned, he motioned two steersmen out of the line and into positions ahead.

"Ach, haiiiii-yoh!" he shouted in the traditional call. The left-side steersman opened a ring segment there.

In a majestic circle, the Maker turned to protect its opened segment. Full around it came and when it came and when it was headed back to the south, Paul shouted: "Geyrat!"

The steersman released his hook. The Maker lined out in a straight course.

Stilgar said: "Very good, Paul-Muad'Dib. With plenty of practice, you may yet become a sandrider."

Paul frowned, thinking: *Was I not first up?*

From behind him, there came sudden laughter. The troop began chanting, flinging his name against the sky.

"Muad'Dib! Muad'Dib! Muad'-Dib! Muad'Dib!"

And far to the rear along the worm's surface, Paul heard the beat of the goaders pounding the tail segments. The worm began picking up speed. Their robes flapped in the wind. The abrasive sound of their passage increased.

Paul looked back through the troop, found Chani's face among them. He looked at her as he spoke to Stilgar. "Then I am a sandrider, Stil?"

"Hal yawm! You are a sandrider this day."

"Then I may choose our destination?"

"That's the way of it."

"And I am a Fremen born this day here in the Habbanya erg. I have had no life before this day. I was as a child until this day."

"Not quite a child," Stilgar said. He fastened a corner of his hood where the wind was whipping it.

"But there was a cork sealing off my world, and that cork has been pulled."

"There is no cork."

"I would go south, Stilgar—twenty thumpers. I would see this land we make, this land that I've only seen through the eyes of others."

And I would see my son and my family, he thought. *I need time now to consider the future-which-is-a-past within my mind. The turmoil comes and if I'm not where I can unravel it, the thing will run wild.*

Stilgar looked at him with a steady, measuring gaze. Paul kept his attention on Chani, seeing the interest quicken in her face, noting also the excitement his words had kindled in the troop.

"The men are eager to raid with you in the Harkonnen sinks," Stilgar said. "The sinks are only a thumper away."

"The Fedaykin have raided with

me," Paul said. "They'll raid with me again until no Harkonnen breathes Arrakeen air."

Stilgar studied him as they rode, and Paul realized the man was seeing this moment through the memory of how he had risen to command of Tabr sietch and to leadership of the Council of Leaders now that Liet-Kynes was dead.

He has heard the reports of unrest among the young Fremen, Paul thought.

"Do you wish a gathering of the leaders?" Stilgar asked.

Eyes blazed among the young men of the troop. They swayed as they rode, and they watched. And Paul saw the look of unrest in Chani's glance, the way she looked from Stilgar, who was her uncle, to Paul-Muad'Dib, who was her mate.

"You cannot guess what I want," Paul said.

And he thought: *I cannot back down. I must hold control over these people.*

"You are mudir of the sandride this day," Stilgar said. Cold formality rang in his voice. "How do you use this power?"

We need time to relax, time for cool reflection, Paul thought.

"We shall go south," Paul said.

"Even if I say we shall turn back to the north when this day is over?"

"We shall go south," Paul repeated.

A sense of inevitable dignity enfolded Stilgar as he pulled his robe tightly around him. "There will be a Gathering," he said. "I will send the messages."

He thinks I will call him out, Paul thought. *And he knows he cannot stand against me.*

Paul faced south, feeling the wind against his exposed cheeks, thinking of the necessities that went into his decisions.

They do not know how it is, he thought.

But he knew he could not let any consideration deflect him. He had to remain on the central line of the gathering Time storm. There would come an instant when it could be unraveled, but only if he were where he could cut the central knot of it.

I will not call him out if it can be helped, he thought. *If there's another way to prevent the jihad—*

"We'll camp for the evening meal and prayer at Cave of Birds beneath Habbanya Ridge," Stilgar said. He steadied himself with one hook against the swaying of the Maker, gestured ahead at a low rock barrier rising out of the desert.

Paul studied the cliff, the great streaks of rock crossing it like waves. No green, no blossom softened that rigid horizon. Beyond it stretched the way to the southern desert—a course of at least ten days and nights, as fast as they could goad the Makers.

Twenty thumpers.

The way led far beyond the Har-

konnen patrols. He knew how it would be. The dreams had shown him. One day, as they went, there'd be a faint change of color on the far horizon—such a slight change that he might feel he was imagining it out of his hopes—and there would be the new sietch.

"Does my decision suit Muad'-Dib?" Stilgar asked. Only the faintest touch of sarcasm tinged his voice, but Freemen ears around them, alert to every tone in a bird's cry or a cielago's piping message, heard the sarcasm and watched Paul to see what he would do.

"Stilgar heard me swear my loyalty when we consecrated the Fedaykin," Paul said. "My death commando know I spoke with honor. Does Stilgar doubt it?"

Real pain exposed itself in Paul's voice. Stilgar heard it and lowered his gaze.

"Usul, the companion of my sietch, him I would never doubt," Stilgar said. "But you are Paul-Muad'Dib, the Atreides Duke, and you are the Lisan al-Gaib, the Voice From the Outer World. This man I don't even know."

Paul turned away to watch the Habbanya Ridge climb out of the desert. The Maker beneath them still felt strong and willing. It could carry them almost twice the distance of any other in Fremen experience. He knew it. There was nothing outside the stories told to children that could match this Old Man of the Desert. It was the stuff of a new legend, Paul realized.

A hand gripped his shoulder.

Paul looked at it, followed the arm to the face beyond it—the dark eyes of Stilgar exposed between filter mask and stillsuit hood.

"The one who led Tabr sietch before me," Stilgar said, "he was my friend. We shared dangers. He owed me his life many a time . . . and I owed him mine."

"I am your friend, Stilgar."

"No man doubts it," Stilgar said. He removed his hand, shrugged. "It's the Way."

Paul saw that Stilgar was too immersed in the Fremen way to consider the possibility of any other. Here, a leader took the reins from the dead hands of his predecessor, or slew among the strongest of his tribe if a leader died in the desert. Stilgar had risen to be a Naib in that way.

"We should leave this Maker in deep sand," Paul said.

"Yes," Stilgar agreed. "We could walk to the cave from here."

"We've ridden him far enough that he'll bury himself and sulk for a day or so," Paul said.

"You're the mudir of the sandride," Stilgar said. "Say when we —" He broke off, stared at the eastern sky.

Paul whirled. The spice-blue overcast on his eyes made the sky appear dark, a richly filtered azure against which a distant rhythmic flashing stood out in sharp contrast.

Ornithopter!

"One small 'thopter," Stilgar said.

"Could be a scout," Paul said. "Do you think they've seen us."

"At this distance we're just a worm on the surface," Stilgar said. He motioned with his left hand. "Off. Scatter on the sand."

The troop began working down the worm's sides, dropping off, blending with the sand beneath their cloaks. Paul marked where Chani dropped. Presently, only he and Stilgar remained.

"First up, last off," Paul said.

Stilgar nodded, dropped down the side on his hooks, leaped onto the sand. Paul waited until the Maker was safely clear of the scatter area, then released his hooks. This was the tricky moment with a worm not completely exhausted.

Freed of its goads and hooks, the big worms burrowing into the sand. Paul ran lightly back along its broad surface, judged his moment carefully and leaped off. He landed running, lunged against the slipface of a dune the way he had been taught, and hid himself beneath the cascade of sand over his robe.

Now, the waiting—

Paul turned gently, exposed a crack of sky beneath a crease in his robe. He imagined the others back along their path doing the same.

He heard the beat of the 'thopter's wings before he saw it. There was a whisper of jetpods and it came over his patch of desert, turned in a broad arc toward the ridge.

An unmarked 'thopter, Paul noted.

It flew out of sight beyond Habbanya Ridge.

A bird cry sounded. Another.

Paul shook himself free of sand, climbed to a dune top. Other figures stood out in a line trailing away from the ridge. He recognized Chani and Stilgar among them, breathed easier.

Stilgar signaled toward the ridge.

The troop began its sandwalk, assembling and gliding over the surface in a broken rhythm that would disturb no Maker. Stilgar paced himself beside Paul along a dune crest.

"It was a smuggler craft," Stilgar said.

"So it seemed," Paul said. "This is deep desert for smugglers. They know our law."

"They've their difficulties, too," Stilgar said.

"They may venture deeper," Paul said.

"True."

"It wouldn't be well for them to venture too deep into the south. Smugglers sell information, too."

"You think they were hunting information rather than spice?" Stilgar asked.

"Possibly, but they'll have a wing and a crawler around to collect chance pockets of spice. We've spice. Let's bait a patch of sand and catch us some smugglers. They should be taught this is our land." Paul hesitated, then: "And the troop

needs real practice with our newest weapons."

"Now, Usul speaks," Stilgar said. "Usul thinks Fremen."

But Usul must give way before ruthless decisions that match a Terrible Purpose, Paul thought.

He could feel the storm-shape of the jihad looming all around—its face the face of the Race Consciousness leering at him.

XXI

When law and duty are one, united by religion, you never become fully conscious, fully aware of yourself. You are always a little less than an individual.

"Muad'Dib: The 99 Wonders of The Universe"
by The Princess Irulan

The spice factory with its parent carrier and ring of drone ornithopters came over a lifting of dunes like a swarm of insects following its queen. Ahead of the swarm stretched one of the low rock ridges that lifted from the desert floor like small imitations of the shieldwalls. The dry beaches of the ridge were swept clean by a recent storm.

In the con-bubble of the factory, Gurney Halleck leaned forward, adjusted the oil lenses of his binoculars and examined the landscape. Beyond the ridge, he could see a dark patch that might be a spice-blow, and he signaled a hovering ornithopter to investigate.

The 'thopter waggled its wings to indicate it had the signal. It broke away from the swarm, sped down toward the darkened sand, circled the area with its detectors dangling close to the surface.

Almost immediately, it went through the wing-tucked dip and circle that told the waiting factory spice had been found.

Gurney sheathed his binoculars, knowing the others had seen the signal. He liked this spot. The ridge offered some shielding and protection. This was deep in the desert, an unlikely place for an ambush . . . still— Gurney signaled for a crew to hover over the ridge, to scan it, sent reserves to take up station in pattern around the area—not too high because then they could be seen from afar by Harkonnen detectors.

He doubted, though, that Harkonnen patrols would be this far south. This was still Freemen country.

Gurney checked his weapons, damning the fate that made shields useless out here. Anything that summoned a worm had to be avoided at all costs. He rubbed the whipvine scar along his jaw, studying the scene, decided it would be safest to lead a ground party through the ridge. Inspection on foot was still the most certain way. You couldn't be too careful when Fremen and Harkonnen were at each other's throats.

It was Fremen that worried him

here. They didn't mind trading for all the spice you could afford, but they were devils on the warpath if you stepped a foot where they forbade you to go. And they were so cunning of late.

It annoyed Gurney, the cunning and adroitness in battle these natives displayed. They showed a sophistication in warfare as good as anything he had ever encountered, and he had been trained by the best fighters in the universe then seasoned in battles where only the superior few survived.

Again, Gurney scanned the landscape, wondering why he felt uneasy. Perhaps it was the worm they had seen . . . but that was on the other side of the ridge.

A head popped up into the conbubble beside Gurney—the factory commander, a one-eyed old pirate with full beard, the blue eyes and milky teeth of a spice diet.

"Looks like a rich patch, sir," the factory commander said. "Shall I take 'er in?"

"Come down at the edge of that ridge," Gurney ordered. "Let me disembark with my men. You can tractor out to the spice from there. We'll have a look at that rock."

"Aye."

"In case of trouble," Gurney said, "save the factory. We'll lift in the 'thopters."

The factory commander saluted. "Aye, sir." He popped back down through the hatch.

Again, Gurney scanned the horizon. He had to respect the possibility that there were Fremen here and he was trespassing. Fremen worried him, their toughness and unpredictability. Many things about this business worried him, but the rewards were great. The fact that he couldn't send spotters high overhead worried him, too. The necessity of radio silence added to his uneasiness.

The factory crawler turned, began to descend. Gently, it glided down to the dry beach at the foot of the ridge. Treads touched sand.

Gurney opened the bubble dome, released his safety straps. The instant the factory stopped, he was out, slamming the bubble closed behind him, scrambling out over the tread guards to swing down to the sand beyond the emergency netting. The five men of his personal guard were out with him, emerging from the nose hatch. Others released the factory's carrier wing. It detached, lifted away to fly in a parking circle low overhead.

Immediately, the big factory crawler lurched off, swinging away from the ridge toward the dark patch of spice out on the sand.

A 'thopter swooped down nearby, skidded to a stop. Another followed and another. They disgorged Gurney's platoon and lifted to hoverflight.

Gurney tested his muscles in his stillsuit, stretching. He left the filter mask off his face, losing moisture for the sake of a greater need—the

carrying power of his voice if he has to shout commands. He began climbing up into the rocks, checking the terrain—pebbles and pea sand underfoot, the smell of spice.

Good site for an emergency base, he thought. *Might be sensible to bury a few supplies here.*

He glanced back, watching his men spread out as they followed him. Good men, even the new ones he hadn't had time to test. Good men. Didn't have to be told every time what to do. Not a shield glimmer showed on any of them. No cowards in this bunch, carrying shields into the desert where a worm could sense the field and come to rob them of the spice they found.

From this slight elevation in the rocks, Gurney could see the spice patch about half a kilometer away and the crawler just reaching the near edge. He glanced up at the coverflight, noting the altitude—not too high. He nodded to himself, turned to resume his climb up the ridge.

In that instant, the ridge erupted.

Twelve roaring paths of flame streaked upward to the hovering 'thopters and carrier wing. There came a blasting of metal from the factory crawler, and the rocks around Gurney were suddenly full of hooded fighting men.

Gurney had time to think: *By the horns of the Great Mother! Rockets! They dare to use rockets!*

Then he was face to face with a hooded figure who crouched low, crysknife at the ready. Two more men stood waiting on the rocks above to the left and right. Only the eyes of the fighting man ahead of him were visible to Gurney through hood and veil of a sand-colored burnoose, but the crouch and readiness warned him that here was a trained fighting man. The eyes were the blue-in-blue of the deep-desert Fremen.

Gurney moved one hand toward his own knife, kept his eyes fixed on the other's knife. If they dared use rockets, they'd have other projectile weapons. This moment argued extreme caution. He could tell by sound alone that at least part of his skycover had been knocked out. There were gruntings, too, the noise of several struggles behind him.

The eyes of the fighting man ahead of Gurney followed the motion of hand toward knife, came back to glare into Gurney's eyes.

"Leave the knife in its sheath, Gurney Halleck," the man said.

Gurney hesitated. That voice sounded oddly familiar even through a stillsuit filter.

"You know my name?" he said.

"You've no need of a knife with me, Gurney," the man said. He straightened, slipped his crysknife back beneath his robe. "Tell your men to stop their useless resistance."

The man threw his hood back, swung the filter aside.

The shock of what he saw froze Gurney's muscles. He thought at

first he was looking at a ghost image of Duke Leto Atreides. Full recognition came slowly.

"Paul," he whispered. Then louder: "Is it truly Paul?"

"Don't you trust your own eyes?" Paul asked.

"They said you were dead," Gurney rasped. He took a half step forward.

"Tell your men to submit," Paul commanded. He waved toward the lower reaches of the ridge.

Gurney turned, reluctant to take his eyes off Paul. He saw only a few knots of struggle. Hooded desert men seemed to be everywhere around. The factory crawler lay silent with Fremen standing atop it. There were no aircraft overhead.

"Stop the fighting," Gurney bellowed. He took a deep breath, cupped his hands for a megaphone. "This is Gurney Halleck! Stop the fight!"

Slowly, warily, the struggling figures separated. Eyes turned toward him, questioning.

"These are friends," Gurney called.

"Fine friends!" someone shouted back. "Half our people murdered."

"It's a mistake," Gurney said. "Don't add to it."

He turned back to Paul, stared into the youth's blue-blue Fremen eyes.

A smile touched Paul's mouth, but there was a hardness in the expression that reminded Gurney of the Old Duke, Paul's grandfather. Gurney saw then the sinewy harshness to Paul that had never before been seen in an Atreides—a leathery look to the skin, a squint to the eyes and calculation in the glance that seemed to weigh everything in sight.

"They said you were dead," Gurney repeated.

"And it seemed the best protection to let them think so," Paul said.

Gurney realized that was all the apology he'd ever get for having been abandoned to his own resources, left to believe his young Duke . . . his friend, was dead. He wondered then if there were anything left here of the boy he had known and trained in the ways of fighting men.

Paul took a step closer to Gurney, found that his eyes were smarting. "Gurney—"

It seemed to happen of itself, and they were embracing, pounding each other on the back, feeling the reassurance of solid flesh.

"You young pup! You young pup!" Gurney kept saying.

And Paul: "Gurney, man! Gurney, man!"

Presently, they stepped apart, looked at each other. Gurney took a deep breath. "So you're why the Fremen have grown so wise in battle tactics. I might've known. They keep doing things I could've planned myself. If I'd only known—" He shook his head. "If you'd only got word to me, lad. Nothing would've

stopped me. I'd have come arunning and—"

A look in Paul's eyes stopped him . . . the hard, weighing stare.

Gurney sighed. "Sure, and there'd have been those who wondered why Gurney Halleck went arunning, and some would've done more than question. They'd have gone hunting for answers."

Paul nodded, glanced to the waiting Fremen around them—the looks of curious appraisal on the faces of the Fedaykin. He turned from the death commandos back to Gurney. Finding his former swordmaster filled him with elation. He saw it as a good omen, a sign that he was on the course of the Future where all was well.

With Gurney at my side—

Paul glanced down the ridge past the Fedaykin, studied the smuggler crew who had come with Halleck.

"How do your men stand, Gurney?" he asked.

"They're smugglers all," Gurney said. "They stand where the profit is."

"Little enough profit in our venture," Paul said, and he noted the subtle finger signal flashed to him by Gurney's right hand—the old hand code out of their past. There were men to fear and distrust in the smuggler crew.

Paul pulled at his lip to indicate he understood, looked up at the men standing guard above them on the rocks. He saw Stilgar there. Memory of the unsolved problem with Stilgar cooled some of Paul's elation.

"Stilgar," he said, "this is Gurney Halleck of whom you've heard me speak. My father's master-of-arms, one of the swordmasters who instructed me, an old friend. He can be trusted in any venture."

"I hear," Stilgar said. "You are his Duke."

Paul stared at the dark visage above him, wondering at the reasons which had impelled Stilgar to say just that. *His Duke.* There had been a strange, subtle intonation in Stilgar's voice, as though he would rather have said something else. And that wasn't like Stilgar, who was a leader of Fremen, a man who spoke his mind.

My Duke! Gurney thought. He looked anew at Paul. *Yes, with Leto dead, the title fell on Paul's shoulders.*

The pattern of the Fremen war on Arrakis began to take on new shape in Gurney's mind. *My Duke!* A place that had been dead within him began coming alive. Only part of his awareness focused on Paul ordering that the smuggler crew be disarmed until they could be questioned.

Gurney's mind returned to the command when he heard some of his men protesting. He shook his head, whirled. "Are you men deaf?" he barked. "This is the rightful Duke of Arrakis. Obey him."

Grumbling, the smugglers submitted.

Paul moved up beside Gurney, spoke in a low voice. "I'd not have expected you to walk into this trap, Gurney."

"I'm properly chastened," Gurney said. "I'll wager yon patch of spice is little more than a sand grain's thickness, a bait to lure us."

"That's a wager you'd win," Paul said. He looked down at the men being disarmed. "Are there any more of my father's men among your crew?"

"None. We're spread thin. There're a few among the free traders. Most have taken their profits and spent them to leave this place."

"But you stayed."

"I stayed."

"Because Rabban is here," Paul said.

"I thought I had nothing left but revenge," Gurney said.

An oddly chopped cry sounded from the ridgetop. Gurney looked up to see a Fremen waving his kerchief.

"A Maker comes," Paul said. He moved out to a point of rock with Gurney following, looked off to the southwest. The burrow mound of a worm could be seen in the middle distance, a dust-crowned track that cut directly through the dunes on a course toward the ridge.

"He's big enough," Paul said.

A clattering sound lifted from the factory crawler below them. It turned on its treads like a giant insect, lumbered toward the rocks.

"Too bad we couldn't have saved the carryall," Paul said.

Gurney glanced at him, looked back to the patches of smoke and debris out on the desert where carryall and ornithopters had been brought down by Fremen rockets. He felt a sudden pang for the men lost there—his men, said: "Your father would've been more concerned for the men he couldn't save."

Paul shot a hard stare at him, lowered his gaze. Presently, he said: "They were your friends, Gurney. I understand. To us, though, they were trespassers who might see things they shouldn't see. You must understand that."

"I understand it well enough," Gurney said. "Now, I'm curious to see what I shouldn't."

Paul looked up to see the old and well remembered wolfish grin on Halleck's face, the ripple of the inkvine scar along the man's jaw.

Gurney nodded toward the desert below them. Fremen were going about their business all over the landscape. It struck him that none of them appeared worried by the approach of the worm.

A thumping sounded from the open dunes beyond the baited patch of spice—a deep drumming that seemed to be heard through their feet. Gurney saw Fremen spread out across the sand there in the path of the worm.

The worm came on like some great sandfish, cresting the surface, its rings rippling and twisting. In a



moment, from his vantage point above the desert, Gurney saw the taking of a worm—the daring leap of the first hookman, the turning of the creature, the way an entire band of men went up the scaly, glistening curve of the worm's side.

"There's one of the things you shouldn't have seen," Paul said.

"There've been stories and rumors," Gurney said. "But it's not a thing easy to believe without seeing it." He shook his head. "The creature all men on Arrakis fear, you treat it like a riding animal."

"You heard my father speak of desert power," Paul said. "There it is. The surface of this planet is ours. No storm nor creature nor condition can stop us."

Us, Gurney thought. *He means the Fremen. He speaks of himself as one of them.* Again, Gurney looked at the spice blue in Paul's eyes. His own eyes, he knew, had a touch of the color, but smugglers could get offworld foods and there was a subtle caste implication in the tone of the eyes among them. They spoke of "the touch of the spice-brush" to mean a man had gone too native. And there was always a hint of distrust in the idea.

"There was a time when we did not ride the Maker in the light of day in these latitudes," Paul said.

"But Rabban has little enough air cover left that he can waste it looking for a few specks in the sand." He looked at Gurney. "Your aircraft were a shock to us here."

To us . . . to us—

Gurney shook his head to drive out such thoughts. "We weren't the shock to you that you were to us," he said.

"What's the talk of Rabban in the sinks and villages?" Paul asked.

"They say they've fortified the graben villages to the point where you cannot harm them. They say they need only sit inside their defenses while you wear yourselves out in futile attack."

"In a word," Paul said, "they're immobilized."

"While you can go where you will," Gurney said.

"It's a tactic I learned from you," Paul said. "They've lost the initiative which means they've lost the war."

Gurney smiled, a slow, knowing expression.

"Our enemy is exactly where I want him to be," Paul said. He glanced at Gurney. "Well, Gurney, do you enlist with me for the finish of this campaign?"

"Enlist?" Gurney stared at him. "My Lord, I've never left your service. You're the one left me . . . to think you dead. And I, being cast adrift, made what shrift I could, waiting for the moment I might sell my life for what it's worth—the death of Rabban."

An embarrassed silence settled over Paul.

A woman came climbing up the rocks toward them, her eyes between stillsuit hood and face mask flicking between Paul and his companion. She stopped in front of Paul and Gurney noted the possessive air about her, the way she stood close to Paul.

"Chani," Paul said, "this is Gurney Halleck. You've heard me speak of him."

She looked at Halleck, back to Paul. "I have heard."

"Where did the men go on the Maker?" Paul asked.

"They but diverted it to give us time to save the equipment."

"Well then—" Paul broke off, sniffed the air.

"There's wind coming," Chani said.

A voice called out from the ridgetop above them: "Ho, there—the wind!"

Gurney saw a quickening of motion among the Fremen now—a rushing about and sense of hurry. A thing the worm had not ignited was brought about by fear of the wind. The factory crawler lumbered up onto the dry beach below them and a way was opened for it among the rocks—and the rocks closed behind it so neatly that the passage escaped his eyes.

"Have you many such hiding places?" Gurney asked.

"Many times many," Paul said. He looked at Chani. "Find Korba.

Tell him that Gurney has warned me there are men among this smuggler crew who're not to be trusted."

She looked once at Gurney, back to Paul, nodded, and was off down the rocks, leaping with a gazelle-like agility.

"She is your woman," Gurney said.

"The mother of my firstborn," Paul said. "There's another Leto among the Atreides."

Gurney accepted this with only a widening of the eyes.

Paul watched the action around them with a critical eye. A curry color dominated the southern sky now and there came fitful bursts and gusts of wind that whipped dust around their heads.

"Seal your suit," Paul said. And he fastened the mask and hood about his face.

Gurney obeyed, thankful for the filters and the clean air.

Paul spoke, his voice muffled by the filter: "Which of your crew don't you trust, Gurney?"

"There're some new recruits," Gurney said. "Offworlders—" He hesitated, wondering at himself suddenly. *Offworlders*. The word had come so easily to his tongue.

"Yes?" Paul said.

"They're not like the usual fortune-hunting lot we get," Gurney said. "They're tougher."

"Harkonnen spies?" Paul asked.

"I think, M'Lord, that they report to no Harkonnen. I suspect they're men of the Imperial service. They have a hint of Salusa Secundus about them."

Paul shot a sharp glance at him. "Sardaukar?"

Gurney shrugged. "They could be, but it's masked."

Paul nodded, thinking how easily Gurney had fallen back into the pattern of Atreides retainer—but with subtle reservations . . . differences. Arrakis had changed him, too.

Two hooded Fremen emerged from raw broken rock below them, began climbing upward. One of them carried a large black bundle over a shoulder.

"Where are my crew now?" Gurney asked.

"Secure in the rocks below us," Paul said. "We've a cave here—Cave of Birds. We'll decide what to do with them after the storm."

A voice called from above them: "Muad'Dib!"

Paul turned at the call, saw a Fremen guard motioning them down to the cave. He signaled he had heard.

Gurney was studying him with a new expression. "You're Muad-'Dib?" he asked. "You're the will-o-the-sand?"

"It's my Fremen name," Paul said.

Gurney turned away, feeling an oppressive sense of foreboding. Half his own crew dead on the sand, the others captive. He did not care about the new recruits, the sus-

picious ones, but among the others were good men, friends, people for whom he felt responsible. *"We'll decide what to do with them after the storm."* That's what Paul had said. Muad'Dib had said. And Gurney recalled the stories told of Muad'Dib, the Lisan al-Gaib—how he had taken the skin of a Harkonnen officer to make his drumheads, how he was surrounded by death commandos, *Fedaykin* who leaped into battle with their death chants on their lips.

Him.

The two Fremen climbing up the rocks leaped lightly to a shelf in front of Paul. The dark-faced one said: "All secure, Muad'Dib. We best get below now."

"Right."

Gurney noted the tone of the man's voice—half command and half request. This was the man called Stilgar, another figure of the new Fremen legends.

Paul looked at the bundle the other man carried, said: "Korba, what's in the bundle?"

Stilgar answered: "'Twas in the crawler. It had the initials of your friend here and it contains a baliset. I heard you speak the prowess of Gurney Halleck on the baliset."

Gurney studied the speaker, seeing the edge of black beard above the stillsuit mask, the hawk stare, the chiseled nose.

"You've a companion who thinks, M'Lord," Gurney said. "Thank you, Stilgar."

Stilgar signaled for his companion to pass the bundle to Gurney, said: "Thank your Lord Duke. His countenance earns your admittance here."

Gurney accepted the bundle, puzzled by the hard undertones in this conversation. There was an air of challenge about the man, and Gurney wondered if it could be a feeling of jealousy in the Fremen. Here was someone called Gurney Halleck who'd known Paul even in the times before Arrakis, a man who shared a cameraderie that Stilgar could never invade.

"You are two I'd have be friends," Paul said.

"Stilgar, the Fremen, is a name of renown," Gurney said. "Any killer of Harkonnens I'd feel honored to count among my friends."

"Will you touch hands with my friend Gurney Halleck, Stilgar?" Paul asked.

Slowly, Stilgar extended his hand, gripped the heavy callouses of Gurney's swordhand. "There're few who haven't heard the name of Gurney Halleck," he said, and released his grip. He turned to Paul. "The storm comes rushing."

"At once," Paul said.

Stilgar turned away, led them down through the rocks, a twisting and turning path into a shadowed cleft that admitted them to the low entrance of a cave. Men hurried to fasten a doorseal behind them. Glowglobes showed a broad dome-

ceilinged space with a raised ledge on one side and passage leading off from it.

Paul leaped to the ledge with Gurney right behind him, led the way into the passage. The others headed for another passage opposite the entrance. They passed through an anteroom and into a chamber with dark wine-colored hangings on its walls.

"We can have some privacy here for a while," Paul said. "The others will respect my—"

An alarm cymbal clanged from the outer chamber, was followed by shouting and clashing of weapons. Paul whirled, ran back through the anteroom and out onto the atrium lip above the outer chamber. Gurney was right behind him, weapon drawn.

Beneath them on the floor of the cave swirled a melee of struggling figures. Paul stood an instant assessing the scene, separating the Fremen robes and bourkas from the costumes of those they opposed. Senses that his mother had trained to detect the most subtle clues picked out a significant fact—the Fremen fought against men wearing smuggler robes, but the smugglers were crouched in trios, backed into triangles where pressed.

Close fighting was a trademark of the Imperial Sardaukar.

A Fedaykin in the crowd saw Paul, and his battlecry was lifted to echo in the chamber: "Muad'Dib! Muad'Dib! Muad'Dib!"

Another eye also had picked Paul out. A black knife came hurtling toward him. Paul dodged, heard the knife clatter against stone behind him, glanced to see Gurney retrieve it.

The triangular knots were being pressed back now.

Gurney held the knife up in front of Paul's eyes, pointed to the hairline yellow coil of Imperial color, the golden lion crest's multifaceted eyes at the pommel.

Sardaukar for certain.

Paul stepped out to the lip of the ledge. Only three of the Sardaukar remained. Bloody rag-mounds of Sardaukar and Fremen lay in a twisted pattern across the chamber.

"Hold!" Paul shouted. "The Duke Paul Atreides commands you to hold!"

The fighting wavered, hesitated.

"You Sardaukar!" Paul called to the remaining group. "By whose orders do you threaten a ruling Duke?" And, quickly, as his men started to press in around the Sardaukar: "Hold, I say!"

One of the cornered trio straightened. "Who says we're Sardaukar?" he demanded.

Paul took the knife from Gurney, held it aloft. "This says you're Sardaukar."

"Then who says you're a ruling Duke?" the man demanded.

Paul gestured to the Fedaykin. "These men say I'm a ruling Duke. Your own Emperor bestowed Ar-

rakis on House Atreides. *I* am House Atreides."

The Sardaukar stood silent, fidgeting.

Paul studied the man—tall, flat-featured with a pale scar across half his left cheek. Anger and confusion betrayed themselves in his manner, but still there was that pride about him without which a Sardaukar appeared undressed—and with which he could appear fully clothed though naked.

Paul glanced to one of his Fedaykin lieutenants, said: "Korba, how came they to have weapons?"

"They held back knives concealed in cunning pockets within their stillsuits," the lieutenant said.

Paul surveyed the dead and wounded across the chamber, brought his attention back to the lieutenant. There was no need for words. The lieutenant lowered his eyes.

"Where is Chani?" Paul asked and waited, breath held, for the answer.

"Stilgar spirited her aside." He nodded toward the other passage, glanced at the dead and wounded. "I hold myself responsible for this mistake, Muad'Dib."

"How many of these Sardaukar were there, Gurney?" Paul asked.

"Ten."

Paul leaped lightly to the floor of the chamber, strode across to stand within striking distance of the Sardaukar spokesman.

A tense air came over the Fedaykin. They did not like him thus exposed to danger. This was the thing they were pledged to prevent because the Fremen wished to preserve the wisdom of Muad'Dib.

Without turning, Paul spoke to his lieutenant: "How many are our casualties?"

"Four wounded, two dead."

Paul saw motion beyond the Sardaukar, Chani and Stilgar standing in the other passage. He returned his attention to the Sardaukar, staring into the offworld whites of the spokesman's eyes. "You, what is your name?" Paul demanded.

The man stiffened, glanced left and right.

"Don't try it," Paul said. "It's obvious to me that you were ordered to seek out and destroy Muad'Dib. I'll warrant you were the ones suggested seeking spice in the deep desert."

A gasp from Gurney behind him brought a thin smile to Paul's lips.

Blood suffused the Sardaukar's face.

"What you see before you is more than Muad'Dib," Paul said. "Seven of you are dead for two of us. Three for one. Pretty good against Sardaukar, eh?"

The man came up on his toes, sank back as the Fedaykin pressed forward.

"I asked your name," Paul said, and he called up the subtleties of Voice: "Tell me your name!"

"Captain Aramsham, Imperial

Sardaukar!" the man snapped. His jaw dropped. He stared at Paul in confusion. The manner about him that had dismissed this cavern as a barbarian warren melted away.

"Well, captain," Paul said, "the Harkonnens would pay dearly to learn what you now know. And the Emperor—what he wouldn't give to learn an Atreides still lives despite his treachery."

The captain glanced left and right at the two men remaining to him. Paul could almost see the thoughts turning over in the man's head. Sardaukar did not submit, but the Empreor *had* to learn of this threat.

Still using the Voice, Paul said: "Submit, captain."

The man at the captain's left leaped without warning toward Paul, met the flashing impact of his own captain's knife in his chest. The man hit the floor in a sodden heap with the knife still in him.

The captain faced his sole remaining companion. "I decide what best serves His Majesty," he said. "Understood?"

The other Sardaukar's shoulders slumped.

"Drop your weapon," the captain said.

The Sardaukar obeyed.

The captain returned his attention to Paul. "I have killed a friend for you," he said. "Let us always remember that."

"You're my prisoners," Paul said. "You submitted to me. Whether you live or die is of no importance." He motioned to his guard to take the two Sardaukar, signaled the lieutenant who had searched the prisoners.

The guard moved in, hustled the Sardaukar away.

Paul bent toward his lieutenant.

"Muad'Dib," the man said. "I failed you in—"

"The failure was mine, Korba," Paul said. "I should've warned you what to seek. In the future, when searching Sardaukar, remember this. Remember, too, that each has a false toenail or two that, combined with other items secreted about their bodies, make an effective transmitter. They'll have capsule teeth, coils of shigawire in their hair—so fine you can barely detect it, yet strong enough to garrot a man and cut off his head. You must scan Sardaukar—both reflex and hard ray—cut off every scrap of body hair . . . and when you're through, be certain you've missed something deadly."

Paul looked at Gurney, who had moved close to listen.

"We best kill them," Korba said.

Still looking at Gurney, Paul said: "I want them to escape."

Gurney's eyes went wide. "Your man here is right, Sire," he said. "Kill those prisoners. Destroy all evidence of them. You've shamed Imperial Sardaukar! If the Emperor learns, he'll not rest until he has you over a slow fire."

"Let the Emperor take his chances and I'll take mine," Paul said. He spoke slowly, coldly. A sum of decisions had accumulated in his awareness while he faced the Sardaukar. It was a critical change in his essential being, a maturing of the fibers woven into him from other *possible* lives. "I've my own form of slow fire waiting for my Imperial kinsman." Then, so suddenly that Gurney stiffened: "Gurney! Are there many Guildsmen around Rabban?"

Gurney's eyes went to slits, then: "Rabban's entourage crawls with Spacing Guild agents. They're buying spice as though it were the most precious thing in the universe. And the price! Why else do you think my smuggler band ventured this far into—"

"It is the most precious thing in the universe," Paul said. "To them." He glanced toward Stilgar and Chani who were crossing the chamber toward him. "And we control it, Gurney."

"The Harkonnens control it!" Gurney protested.

"Who can destroy a thing controls it," Paul said. He waved a hand to silence further argument, nodded to Stilgar who stopped in front of Paul with Chani beside him.

Paul held the Sardaukar knife in his left hand, presented it to Stilgar. "You exist for the good of the Tribe," Paul said. "Could you draw my life's blood with that knife?"

"For the good of the Tribe," Stilgar growled. "Are you calling me out?"

Gurney moved closer, but Paul waved him back.

"If I call you out," Paul said, "I shall stand there without weapon and let you slay me."

Stilgar drew a quick, sharp breath.

Chani said: "Usul!" She glanced at Gurney, back to Paul.

While Stilgar weighed the words, Paul said: "You're a fighting man, Stilgar. When the Sardaukar attacked, you weren't in front of the battle. Your first thought was to spirit Chani to a place of safety."

"She's my niece," Stilgar said. "Of course, if there'd been any doubt of your Fedaykin handling those scum—"

"But your first thought was of Chani," Paul said.

"No."

"Oh?"

"My first thought was of you, Usul."

"Could you lift your hand against me?" Paul asked.

Stilgar began to tremble. "It's the Way!" he muttered.

"It's the Way to kill strangers in the desert and take their water as the gift of Shai-Hulud," Paul said. "Yet you permitted my mother and me to live."

As Stilgar remained silent, Paul said: "Ways change, Stil. You've changed them yourself."

Stilgar looked down at the yel-

low emblem on the knife he held.

"When I am Duke in Arrakeen with Chani by my side, do you think I'll have time to concern myself with every detail of governing Tabr sietch?" Paul asked. "Do you concern yourself with the internal problems of every family?"

Stilgar continued staring at the knife.

"Do you think I wish to cut off my right arm?" Paul demanded.

Slowly, Stilgar looked up at him.

"You!" Paul said. "Do you think I wish to deprive myself or the Tribe of your wisdom and strength?"

In a low voice, Stilgar said: "The young man of my tribe whose name is known to me, this young man I could kill on the challenge floor, Shai-hulud willing. The Lisan al-Gaib, him I could not harm. You knew this when you handed me this knife."

"I knew it," Paul agreed.

Stilgar opened his hand. The knife clattered against the stone of the floor. "Ways change," he said.

"Chani," Paul said. "Go to my mother, send her here that her counsel will be available in—"

"But you said we would go to the south!" she protested.

"I was wrong," he said. "The Harkonnens are not there. The war is not there."

She took a deep breath, accepting this as a desert woman accepted all necessities in the midst of a life involved with death.

"You will give my mother a message for her ears alone," Paul said. "Tell her that Stilgar acknowledges me Duke of Arrakis, but a way must be found to make the young men accept this without combat."

Chani glanced at Stilgar.

"Do as he says," Stilgar growled. "We both know he could overcome me . . . and I could not raise my hand against him . . . for the good of the Tribe."

"I shall return with your mother," Chani said.

"Send her," Paul said. "Stilgar's instinct was right. I am stronger when you are safe. You will remain in the sietch."

She started to protest, swallowed it.

"Sihaya," Paul said, using his intimate name for her. He whirled away to the right, met Gurney's glaring eyes.

The interchange between Paul and the older Fremen had passed as though in a cloud around Gurney since Paul's reference to his mother.

"Your mother," Gurney said.

"Idaho saved us the night of the raid," Paul said, distracted by the parting with Chani. "Right now we've—"

"What of Duncan Idaho, M'Lord?" Gurney asked.

"He's dead—buying us a bit of time to escape."

The she-witch alive! Gurney thought. *The one I swore vengeance against, alive! And it's obvious Paul doesn't know what manner of crea-*

ture gave him birth. The evil one! Betrayed his own father to the Harkonnens!

Paul pressed past him, jumped up to the ledge. He glanced back, noted that the wounded and dead had been removed, and he thought bitterly that here was another chapter in the legend of Paul-Muad'Dib. *I didn't even draw my knife, but it'll be said of this day that I slew twenty Sardaukar by my own hand.*

Gurney followed with Stilgar, stepping on ground that he did not even feel. The cavern with its yellow light of glowglobes was forced out of his thoughts by rage. *The she-witch alive while those she betrayed are bones in lonesome graves. I must contrive it that Paul learns the truth about her before I slay her.*

XXII

How often the angry man rages denial of what his inner self tries to tell him.

"The Collected Sayings of Muad'Dib" by The Princess Irulan

The crowd in the cavern assembly chamber seethed with that pack feeling Jessica had sensed the day Paul killed Jamis—the same nervous muttering with little cliques gathered like knots among the robes.

Jessica emerged to the ledge from Paul's quarters. She felt rested after the long journey from the south, but still rankled that Paul had not sent a captured ornithopter.

"We don't have full control of the air," he said. "And we must not grow dependent upon offworld fuel. Both fuel and aircraft must be saved for the day of maximum effort."

Paul stood with a group of younger men near the ledge. Pale glowglobes gave the scene a tinge of unreality. It was like a tableaux spaced out with warren smells, whispers and the shuffling of feet.

She studied her son, thinking of the message cylinder she had brought him, recalling his surprise. And she wondered why he hadn't brought out his own surprise—Gurney Halleck. Thinking of Gurney disturbed her with memories of the easier past, the lost days of love and beauty with Paul's father. She hardened herself against those memories.

Stilgar, wrapped in a silent feeling of inevitable dignity, stood with his own group at the other end of the ledge. *We cannot lose that man,* Jessica thought. *The plan must work.*

She strode down the ledge, passed Stilgar without a glance, stepped into the crowd. Way was made for her as she headed toward Paul. And silence followed her.

She knew the meaning of the silence—the unspoken questions of the people, the awe of the Reverend Mother.

The young men drew back from

Paul as she came up to him, and she found herself momentarily dismayed by the new deference they paid him. *"All men beneath your position covet your station,"* went the Bene Gesserit axiom. But she found no covetousness in these faces. They were held at a distance by the religious ferment around Paul's leadership. And she recalled another Bene Gesserit saying: *"Prophets have a way of dying by violence."*

Paul looked at her.

"It's time," she said.

One of Paul's companions, bolder than the others, glanced across at Stilgar, said: "Are you going to call him out, Muad'Dib? Now's the time for sure. They'll think you a coward if you—"

"Who dares call me coward?" Paul demanded. His hand flashed to his crysknife hilt.

Bated silence came over the group, spreading into the crowd.

"There's work to do," Paul said as the man drew back from him. Paul turned away, shouldered through the crowd to the ledge, leaped lightly up to it and faced the people.

"Do it!" someone shrieked.

Murmurs and whispers arose behind the shriek.

Paul waited for silence. It came slowly amidst scattered shufflings and coughs. When it was still in the cavern, Paul lifted his chin, spoke in a voice that carried to the farthest corners.

"You are tired of waiting," Paul said.

Again, he waited while the cries of response died out.

Indeed, they are tired of waiting, Paul thought. He felt the message cylinder in his waist sash, thinking of what it contained. His mother had brought it, showing it to him as it had been presented to her after it was taken from a Harkonnen courier.

Rabban was being abandoned to his own resources here on Arrakis! He could not call for help or reinforcements!

Again, Paul raised his voice: "You think it's time I called out Stilgar and changed the leadership of the troops," Paul said. Before they could respond, Paul hurled his voice at them in anger: "Do you think the Lisan al-Gaib that stupid?"

There was stunned silence.

He's accepting the religious mantle, Jessica thought. *He must not do it!*

"It's the Way!" someone shouted.

Paul spoke dryly: "Ways change."

An angry voice lifted from a corner of the cavern: "We'll say what's to change!"

There were scattered shouts of agreement through the throng.

"All right," Paul said.

And Jessica heard the subtle intonations as Paul used the powers of Voice she had taught him.

"You will say," he agreed. "But first you will hear my say."

Stilgar moved along the ledge, his bearded face impassive. "That is the Way, too," he said. "The voice of any Fremen may be heard in Council. Paul-Muad'Dib is also a Fremen."

"The good of the Tribe, that is the most important thing, eh?" Paul asked.

Still with that flat-voiced dignity, Stilgar said: "Thus are our steps guided."

"All right," Paul said. "Then, who rules this troop of our Tribe—and who rules all the Tribes and troops through the fighting instructors we've trained in the weirding way?"

Paul waited, looking over the heads of the throng.

Presently, he said: "Does Stilgar rule all this? He says himself that he does not. Do I rule? Even Stilgar does my bidding on occasion, and the sages, the wisest of the wise listen to me and honor me in Council."

There was shuffling silence among the crowd.

"So," Paul said. "Does my mother rule?" He pointed down to Jessica in her black Reverend Mother robes among them. "Stilgar and all the other troop leaders ask her advice in almost every major decision. You know this. But does a Reverend Mother walk the sand or lead a razzia against the Harkonnens?"

Frowns creased the foreheads of those Paul could see, but still there were angry murmurs through the crowd.

This is a dangerous way to do it, Jessica thought, but she remembered the message cylinder and what it implied. And she saw Paul's intent: Go right to the depth of their uncertainty, dispose of that, and all the rest must needs tumble.

"No man recognizes leadership without the challenge and the combat, eh?" Paul asked.

"That's the Way!" someone shouted.

"What's our goal?" Paul asked. "To unseat Rabban, the Harkonnen beast, and to remake our world into a place where we may raise our families in happiness amidst an abundance of water—is this our goal?"

"Hard tasks need hard ways," someone shouted.

"Do you smash your knife before a battle?" Paul demanded. "I say this as fact, not meaning it as boast or challenge: there isn't a man here, Stilgar included, who could stand against me in single combat. This is Stilgar's own admission. He knows it, so do you all."

Again there were angry mutters.

"Many of you have been with me on the practice floor," Paul said. "You know this isn't idle boast. I say it because it's fact known to us all, and I'd be foolish not to see it for myself. I began training in these ways earlier than you did and my teachers were tougher than any

you've ever seen. How else do you think I bested Jamie at an age when your boys are still fighting only mock battles?"

He's using the Voice well, Jessica thought, *but that's not enough with these people. They've good insulation against vocal control. He must catch them also with logic.*

"So," Paul said, "we come to this." He removed the message cylinder from his waist sash, removed its scrap of paper. "This was taken from a Harkonnen courier. Its authenticity is beyond question. It is addressed to Rabban. It tells him that his request for new troops is denied, that his spice harvest is far below quota, that he must wring more spice from Arrakis with the people he has."

Stilgar moved up beside Paul.

"How many of you see what this means?" Paul asked. "Stilgar saw it immediately."

"They're cut off!" someone shouted.

Paul restored message and cylinder to his sash. From his neck he took a thick shigawire cord and removed a ring from the cord, holding the ring aloft.

"This was my father's ducal signet," he said. "I swore never to wear it again until I was ready to lead my troops over all of Arrakis and claim it as my rightful fief." He put the ring on his finger, clenched his fist.

There was utter stillness in the cavern.

"Who rules here?" Paul asked. He raised his fist. "I rule here! I rule on every square inch of Arrakis! This is my Ducal fief whether the Emperor says yea or nay! He gave it to my father and it comes to me through my father!"

Paul lifted himself onto his toes, settled back to his heels. He studied the crowd, feeling their temper.

"There are men here who will hold positions of importance on Arrakis when I claim those Imperial rights which are mine," Paul said. "Stilgar is one of those men. Not because I wish to bribe him! Not out of gratitude, though I'm one of many here who owe him life for life. No! But because he's wise and strong. Because he rules this troop by his own intelligence and not just by rules. Do you think me stupid? Do you think I'll cut off my right arm and leave it bloody on the floor of this cavern just to provide you with a circus?"

Paul swept a hard gaze across the throng. "Who is there here to say I'm not the rightful ruler on Arrakis? Must I prove it by leaving every Fremen tribe in the erg without a leader?"

Beside Paul, Stilgar stirred, looked at him questioningly.

"Will I subtract from our strength when we need it most?" Paul asked. "I am your ruler, and I say to you that it is time we stopped killing off our best men and started killing our real enemies—the Harkonnens!"

In one blurred motion, Stilgar had his crysknife out and pointed over the heads of the throng. "Long live Duke Paul-Muad'Dib!" he shouted.

A deafening roar filled the cavern, echoed and re-echoed. They were cheering and chanting: "Ya hya chouhada! Muad'Dib! Muad'-Dib! Muad'Dib! Ya hya chouhada!"

Jessica translated it to herself: *"Long live the fighters of Muad-'Dib!"* The scene she and Paul and Stilgar had cooked up between them had worked as they planned.

The tumult died slowly.

When silence was restored, Paul faced Stilgar, said: "Kneel, Stilgar."

Stilgar dropped to his knees on the ledge.

"Hand me your crysknife," Paul said.

Stilgar obeyed.

This was not as we planned it, Jessica thought.

"Repeat after me, Stilgar," Paul said, and he called up the words of investiture as he had heard his own father use them. "I, Stilgar, take this knife from the hands of my Duke."

"I, Stilgar, take this knife from the hands of my Duke," Stilgar said, and accepted the milky blade from Paul.

"Where my Duke commands, there shall I place this blade," Paul said.

Stilgar repeated the words, speaking slowly and solemnly.

Remembering the source of the rite, Jessica blinked back tears, shook her head. *I know the reason for this,* she thought. *I shouldn't let* it *stir me.*

"I dedicate this blade to the cause of my Duke and the death of his enemies for as long as our blood shall flow," Paul said.

Stilgar repeated it after him.

"Kiss the blade," Paul ordered.

Stilgar obeyed. At a nod from Paul, he sheathed the blade, got to his feet.

A sighing whisper of awe passed through the crowd, and Jessica heard the words: "The prophecy—A Bene Gesserit shall show the way and a Reverend Mother shall see it." And, from farther away: "She shows us through her son!"

"Stilgar leads this tribe," Paul said. "Let no man mistake that. He commands with my voice. What he tells you, it is as though I told you."

Wise, Jessica thought. *The tribal commander must lose no face among those who should obey him.*

Paul lowered his voice, said: "Stilgar, I want sandwalkers out this night and cielagos sent to summon a Council Gathering. When you've sent them, bring Korba and Otheym and two other lieutenants of your own choosing. Bring them to my quarters for battle planning. We must have a victory to show the Council of Leaders when they arrive."

Paul nodded for his mother to accompany him, led the way down off the ledge and through the

throng toward the central passage and the living chambers that had been prepared there. As Paul pressed through the crowd, hands reached out to touch him. Voices called out to him.

"My knife goes where Stilgar commands it, Paul-Muad'Dib! Let us fight soon, Paul-Muad'Dib! Let us wet our world with the blood of Rabban!"

Feeling the emotions of the throng, Jessica sensed the fighting edge of these people. They could not be more ready. *We are taking them at the crest,* she thought.

In the inner chamber, Paul motioned his mother to be seated, said: "Wait here." And he ducked through the hangings to the side passage.

It was quiet in the chamber after Paul had gone, so quiet behind the hangings that not even the faint soughing of the wind pumps that circulated air in the sietch penetrated to where she sat.

He is going to bring Gurney Halleck here, she thought. And she wondered at the strange mingling of emotions that filled her. Gurney and his music had been a part of so many pleasant times on Caladan before the move to Arrakis. She felt that Caladan had happened to some other person. In the nearly three years since, she had become another person. Having to confront Gurney forced a reassessment of the changes.

Paul's coffee service, the fluted alloy of silver and jasmium that he had inherited from Jamis, rested on a low table to her right. She stared at it, thinking of how many hands had touched that metal. Chani had served Paul from it within the month.

What can his desert woman do for a Duke except serve him coffee? she asked herself. *She brings him no power, no Family. Paul has only one major chance—to ally himself with a powerful Great House, perhaps even with the Imperial Family. There were marriageable princesses, after all, and every one of them Bene Gesserit trained.*

Jessica imagined herself leaving the rigors of Arrakis for the life of power and security she could know as mother of a royal consort. She glanced at the thick hangings that obscured the rock of this cavern cell, thinking of how she had come here—riding amidst a host of worms, the palanquins and pack platforms piled high with necessities for the coming campaign.

As long as Chani lives, Paul will not see his duty, Jessica thought. *She has given him a son and that is enough.*

A sudden longing to see her grandson, the child whose likeness carried so much of the grandfather's features—so like Leto, swept through her. Jessica placed her palms against her cheeks, began the ritual breathing that stilled emotion and clarified the mind, then bent

forward from the waist in the devotional exercise that prepared the body for the mind's demands.

Paul's choice of this Cave of Birds as his command post could not be questioned, she knew. It was ideal. And to the north lay Wind Pass opening onto a protected village in a cliff-walled sink. It was a key village, home of artisans and technicians, maintenance center for an entire Harkonnen defensive sector.

A cough sounded outside the chamber hangings. Jessica straightened, took a deep breath, exhaled slowly.

"Enter," she said.

Draperies were flung aside and Gurney Halleck bounded into the room. She had only time for a glimpse of his face with its odd grimace, then he was behind her, lifting her to her feet with one brawny arm beneath her chin.

"Gurney, you fool, what are you doing?" she demanded.

Then she felt the touch of the knife tip against her back. Chill awareness spread out from that knife tip. She knew in that instant that Gurney meant to kill her. *Why?* She could think of no reason, for he wasn't the kind to turn traitor. But she felt certain of his intention. Knowing it, her mind churned. Here was no man to be overcome easily. Here was a killer wary of the Voice, wary of every combat stratagem, wary of every trick of death and violence. Here was an instrument she herself had helped train with subtle hints and suggestions.

TO BE CONCLUDED

IN TIMES TO COME

Usually, our cover features our lead novelette or serial installment. The June issue, however, features our lead science-article for a change. With color photograph, instead of painting.

Reason: That's the only way we can run a color photograph. And the color photograph of a working hydrogen fusion reactor experiment is something that you—who helped pay for that incredible mass of straight-out-of-science-fiction equipment—should see!

Since a color photograph actually represents three separate color-separation pictures printed together, it carries three times the information one can get in a black-and-white. And the fantastic complexity of those gadgets, the appalling violence-under-control involved in a hydrogen fusion reaction, calls for color.

Walterscheid, who's done the article, has a state-of-the-art discussion of the progress so far made—and the reason why Man would never be satisfied if we duplicated the Sun's hydrogen fusion. Far too feeble and weak for Man's demands!

THE EDITOR



SHADES OF "PELLUCIDAR"!

As I have pointed out here before, Edgar Rice Burroughs' "Pellucidar" series about a world on the inside surface of a hollow Earth, and the similar world he puts inside the Moon in "The Moon Maid," are really the only ones of his stories that could have been proved impossible at the time he wrote them. When "A Princess of Mars" was written, Percival Lowell's belief in civilized Martian canal builders was still fresh and Burroughs merely filled in the details; as our knowledge of the Red Planet increased, and we learned that there could be no Barsoom on Mars, he might have dropped the series—but why kill a popular and profitable line?

Pellucidar is something else again. For years, one of the standard exercises in college classes in integral calculus has been the determination of the gravitational attraction of a spherical shell. Freshmen brought up on Burroughs are shocked to discover that the attraction inside the sphere is zero. A man on the inside surface is, of course, attracted toward the ground by the part of the shell directly under him—but he is also attracted upward by the more distant but much larger portion of the sphere above him. The net result cancels out: for Pellucidar to be possible, you must radically change the law of gravitational attraction—and then what happens to the outside universe?

Incidentally, I feel sure Jules Verne realized this. The subterranean world where his explorers find men and dinosaurs in the "Journey to the Center of the Earth" are not on the inner surface of a hollow shell; they are in a gigantic cave

within the Earth's crust.

With the mathematics so clear for so long, it is a shock to find a man who claims a Ph.D. from New York University seriously contending, in a new book, that the Earth *is* hollow with great openings at both poles, and that the interior—which has a central sun just like Pellucidar—is inhabited by mammoths, tropical plants and birds, and little civilized brown men in flying saucers.

The book in question is "The Hollow Earth," by Dr. Raymond Bernard, which I obtained from Fieldcrest Publishing Co., 210 Fifth Avenue, New York 10 for $3.50. (You may have seen their advertisement in the New York *Times* Book Review as I did.) It consists of 105 mimeographed pages, 8½ by 11 inches, with several illustrations and advertisements for Dr. Bernard's complete works: forty-one volumes on geriatrics, fluoridation, sex control, yoga, the Dead Sea Scrolls, the "real" Christ, theosophy, flying saucers, and what you will. My order for two other earlier volumes on his Hollow Earth theory has not yet been filled.

"The Hollow Earth" is certainly a remarkable work, even for a non-Ph.D. Much of it is a compendium—not, as you might suppose, from original, cited sources, but from what Raymond Palmer said in the "suppressed" December 1959 issue of *Flying Saucers* about a book by F. Amadeo Giannini entitled "Worlds Beyond the Poles," and what two other writers (William Reed, "Phantom of the Poles," in 1906 and especially Marshall B. Gardner, "A Journey to the Earth's Interior," 1920) have contended along the same lines. There are liberal quotations from other sources, including the theosophical.

Much of the Bernard-Palmer-Giannini argument is based on a claim that Admiral Richard E. Byrd, in February 1947, flew "beyond" the North Pole in a 1,700-mile course that took him over forested, mountainous country where at least one mammoth was seen browsing among the bushes. He is alleged to have described all this in his radio contacts during the flight, and in the newspapers immediately afterward; then it was "suppressed". Giannini claims to have been in radio contact with him during the flight. Later—January 1956—he and others are supposed to have penetrated 2,300 miles into the world inside the Earth on a flight "beyond" the South Pole. The statements about the 1947 flight are repeated over and over, *ad nauseam*; there is no question of a misprint.

The difficulty is that—apart from these suppressed sources that Bernard, Palmer and Giannini quote so liberally—the world supposes that Byrd made his flight over the North Pole on May 11, 1926, twenty-one years earlier. I seem to recall hearing the pickup of his broadcasts

over WGY in Schenectady at the time—but doubtless I am mistaken. Byrd's own books and the New York papers—at least the New York *Times*—have the same belief, and report that Amundsen, Ellsworth and Nobile, in the dirigible *Norge,* crossed the Pole en route from Spitzbergen to Alaska three days later. According to the *Times* —May 11, 1926—Byrd "saw not a single sign of life after entering the icepack . . . no birds, seals, polar bears, nor traces of them," let alone mammoths. The *Norge*—May 16, 1926—"proved that this area, previously unknown, contains no great body of land." They sent back photographs to prove it.

As for 1947, when Byrd is supposed to have been surveying Pellucidar, the *Times* has him en route to Antarctica on the carrier *Philippine Sea,* and in February—when Bernard *et al* have him inside the Earth—reports him visiting his old camp at Little America.

The liberal quotations from Reed's and Gardner's books are devoted mainly to alleged quotations from early Nineteenth Century polar explorers which it would take years and a library like the Stefansson collection at Dartmouth to check out. Reed's book, out in 1906, may very well have given Burroughs the idea for Pellucidar, since he wrote "At the Earth's Core" in 1913. None of these writers, including Bernard, seems to have heard of Captain John Cleves Symmes, who in the 1820's tried to get Congress to finance a voyage into the interior via "Symmes' Hole". (You'll find his and Gardner's idea in Chapter 2 of "In the Name of Science" by the totally different Martin Gardner, presented somewhat differently than in Bernard's opus.)

Science fiction is a cockpit for strange ideas, but most science fiction readers—and Analog readers in particular—take a tough-minded approach to what is and is not evidence. "The Hollow Earth" is not going to make many converts here . . . no more, anyway, than the "Pellucidar" stories have done.

MARS

By Robert S. Richardson and Chesley Bonestell. Harcourt, Brace & World, New York • 1964 • 151 pp. • $8.50

I must be getting old and sour, for this book—like the latest Ley-Bonestell, "Beyond the Solar System"—is far from what you would expect from either participant. Chesley Bonestell's reconstructions of Martian landscape and other cosmic scenes are up to his usual standards, but more cautious than in the past: the "canals" are green smears on the horizons, as if neither he nor R. S. Richardson wants to guess at their identity in public. Richardson, too, seems to be pulling his punches in a wholly uncharacteristic manner, if one judges by his articles here in ASF in years past.

When I saw "Mars" advertised, I hoped for a fresh, up-to-the-minute summary of thinking about Mars and what it will be like when we get there, with the kind of up-to-date bibliography that a professional planetary astronomer can assemble to expand on and document his statements. Apart from a few footnotes, the bibliography is devoted only to some fairly harmless works on space flight: there's a better bibliography of recent ideas on Mars in Walter Sullivan's "We Are Not Alone," an excellent survey of the current ideas about life in the universe, more fully reviewed elsewhere.

The first third of the book is familiar stuff, placing Mars in the solar system; I suppose it's necessary to repeat this for a lay audience the publishers assume never heard of the planet Mars before. There are then several short, rambling, scattered assemblies of ideas about what Mars is like and why: all the explanations for the seasonal changes in the Martian features, including the nitrogen oxides hypothesis which John Campbell has described here, are described without much evaluation. The author is uncharacteristically cautious—or the publisher is. There are a couple of chapters on space flight (I can see the publisher insisting there has to be a little of everything—"a really definitive book that we can sell for years"), some scatter-shots at special problems such as the discovery of the Martian moons and the nature of the blue haze and W-cloud, and finally advice to the binocular astronomer.

I object mainly to the lack of things that I know R. S. Richardson can do, and assume he would like to do, but certainly hasn't done. I expected him to write and Bonestell to illustrate a book that would really take the reader to Mars and make it as actual as the Arizona desert. There's a sequence of color plates of a Martian bubble-dome colony, but nothing on the problems of setting up such a colony and keeping it going—save for the note that it must be near enough to the North Pole to have a supply of water. Maps of the Martian markings are there, but they're crammed into a fraction of a page with details barely visible, instead of spread over a double page or over the endpapers as they could be so effectively in a big book like this. These are a publisher's decisions, of course—and I blame the publisher for refusing to admit that there have been or are any other books on Mars and making the "bibliography" harmless and useless. The Richardson articles in Astounding were never like that!

WE ARE NOT ALONE

By Walter Sullivan • McGraw-Hill Book Company, New York • 1964 • 325 pp. • $6.95

This is by far the best book I have seen that explores the question of the origins and development of life,

and the likelihood that other species and races live among the stars. The author is Science Editor of the New York *Times*. He is probably more widely read than most specializing scientists, he is able to attend most of the major scientific conferences and participate formally and informally, and he not only understands how scientists are going about the formulation and solution of fundamental problems, but why they are doing it and what the results can be.

Much of the book is historic, in the sense that the author shows the processes of discovery going on. It may be reassuring to readers of Analog to know that scientists argue seriously many of the same questions and concepts that science fiction writers have raised fictionally, and that the conclusions are much the same: we are not alone, and sooner or later we will prove it—but without a fundamental upset in the laws of physics, there is probably no way for us to come face to face with the Others. Science fiction can bypass the blocks with faster-than-light drives; science cannot.

If you want one book on this subject, this—for the moment—is it.

TO CONQUER CHAOS

By John Brunner • Ace Books, New York • No. F-277 • 1964 • 192 pp. • 40¢

John Brunner doggedly—it sounds more British than consistently—maintains his ability to write superior SF adventure yarns with original settings and gimmicks.

In this one we are shown a future world from three points of view which gradually coalesce. The three protagonists are Jervis Yanderman, an inordinately intellectual member of a small expedition that the Duke of Esberg is leading to investigate the legends of the Barrenland, Conrad, a young soapmaker in the village of Lagwich, and Nestamay, one of the handful of people in the Station at the center of the barrens.

Out of the Barrenland—indeed, out of the ruined dome to whose fringes the people of the Station cling—comes an intermittent stream of horrible, hostile monsters and lethal vegetable plagues. Nestamay's inbred people struggle to hold them back, and to perform duties of forgotten meaning which link them to the machines inside the dome. Conrad is despised for his strange visions, in which past and present are confusingly interwoven. And Yanderman's intellectual curiosity about the Barrenland becomes a dominating drive after the Duke is destroyed by a hideous mold carried by a victim of one of the monsters, and the little army falls apart in fear and greed.

Yanderman and Conrad go into the Barrens, following the boy's visions of the land as it used to be. Little by little the jigsaw is fitted together to make sense of it all. Nice job, all through.



Dear Sir:

"Final Report," by Richard Grey Sipes, is quite a story. Except for paragraph 3 in the conclusion. It is a brilliantly executed satire on the workings of official government testing agencies, reminiscent of the final report on Krebiozen.

Paragraph 3 adds a strange touch, indicating the author's absorption in some of the little, or not at all, known aspects of Oriental religions. I'd like to see him follow this up in another story, perhaps on the classic "Abominable Snowman" theme. Say, why not start publishing anthologies consisting of stories on one subject only? Analog would be a great place to start.

Back to the satire bit and Krebiozen, "Report" was excellently placed, following Mr. Dempsey's "A Matter of Timing." They both had a satirical basic plot. I appreciate it.

LAWRENCE GONUCS
1631 Magnolia Drive,
Cleveland, Ohio

Dr. Sipes has had direct experience in making such formal Reports!

Dear Sir:

Normally, I wouldn't, but the letter from Mr. David A. Lennette (Physics '66, UC Berkeley), in your excellent January issue, shows an attitude of thought which, I feel, needs shaking up.

In connection with the Clock Paradox, Mr. Lennette suggests I read page 258 et. seq. of C. Moller's "Theory of Relativity".

This puts me in the position of a medieval monk being told by his abbot to re-consult his copy of Aristotle.

As a balding, slightly pooped B.Sc.(E.E.) '42, maybe I can make a couple of helpful statements and ask a few questions of the younger lads.

The statements:

1. The human race is but lately emerged from the Old Stone Age. We know nothing.

2. Unless you back up the mathematical guesswork with experimental evidence, the hell with it.

Some questions:

1. What is electricity? (I know all about electron drift, forbidden bands, quantum jumps, etcetera.

Show me a picture of an electron drifting and I might buy it.)

2. What is gravity? (I know what Newton said, what Cavendish showed, what Einstein, consulting his navel, surmised. I yawn.)

3. Do particles exist? (At last count there were more than 90, all very fundamental. Hilarious.)

4. What is light? (Yes, waves/photons. One notion from pond ripples, the other from mechanics. We need a new concept.)

5. What is the nature of the binding energy? (In the usual notion, if there was no binding energy, the nucleus would fly apart. Show me a picture of the nucleus, not flying apart.)

6. The star traveler, flying near Cee speed, ages slower than his twin. (Get a notarized statement from this twin. And a picture of the traveler, before and after. Lacking these, it is not physics.)

A. B. MACFADYEN
134 Lawton Boulevard, Apt. 402
Toronto 7 Ontario, Canada

Stop giving me all those facts! You know I have a theory and you're just trying to confuse me!

Dear Mr. Campbell:

For the last several months, we of the MIT Science Fiction Society have been entering author, title, and other relevant information about each story, poem, and article printed in the major science fiction magazines of the country in recent years on punched cards. At the end of January, the machines at the MIT Computation Center will be ready to print this information out on mimeograph stencils in the form of an index by author and one by title of the pieces published in Astounding/Analog, *Amazing, Fantastic, Fantasy and Science Fiction, Galaxy, Gamma, If*, and *Worlds of Tomorrow*. It will run from January 1951 through December 1964, all magazines complete. Together with the Day index of 1926 through December 1950, it will be a guide to most of the science fiction ever published in magazine form.

Naturally, this listing will leave much to be desired. However, the flexibility of punched cards will permit us to add in later editions such things as the stories printed in now-defunct magazines, illustration pseudonyms, and story series listings. Nonetheless, even this first edition will provide a ready reference to the popular magazines, and at least partially fill what is now a total vacuum.

The index can be ordered for the special prepublication price of two dollars from the MIT Science Fiction Society, Room 50-020, 77 Mass. Ave., Cambridge, Mass. Checks may be made payable to Wayne B'Rells, Treasurer.

If you find occasion to mention the index, which comes on punched 8½ by 11 paper ready for insertion into your looseleaf binder, in print, we would be grateful for the help in

distributing this long-needed addition to the shelf of the casual reader of science fiction, as well as that of the devoted fan. We go to press, at the end of January.

ERWIN S. STRAUSS
MIT Science Fiction Society
77 Massachusetts Avenue
Cambridge 39, Massachusetts
Rm. 50-020

Automation comes late to science-fiction!

Dear Mr. Campbell:

The January cover would probably be very attractive if only I could figure out what it is. As far as I can tell, it seems to depict two figures wandering about on a gigantic contour map of some rather hilly area. I rather doubt that that is what the artist had in mind.

Perhaps I will be able to figure it out a little better after I have read the story it illustrates. However, even if that does clear up the mystery, I will still have to wait until the middle of April. Serials are the lifeblood of your magazine, true; but *five-part* serials? I own a file of ASF extending back to January 1947, but never have you split up a novel into five parts during that time. That is one *status quo* I would prefer to leave unchallenged; four parts are bad enough. Even if you had to postpone some of the shorter items, it would still have been better to print the novel in fewer if larger chunks. The Analytical Laboratory through the years has consistently shown that the longer stories are the most popular. Why, then, do you not print them over as short a period of time as possible? A couple of your two-parters in the last few years would have been better if printed complete in one issue. Aside from the nail-biting fits brought on by month-long waits between parts of an especially interesting novel, even the best stories tend to lose their effects when the reading is spread over a long period of time; many of your readers read each part of the novel as it comes out. This is not so bad when applied to a relatively simple adventure story such as the recent "Sleeping Planet," but it can be rather damaging to the enjoyment of a story such as "Dune World" was and as this sequel—or continuation, since "Dune World" was by no means completed—will no doubt prove to be. And the longer the period, the less effective a story will be.

"A Nice Day for Screaming" and "The New Boccaccio" were both rather nice trifles. Both writers are capable of so much better stories that it seems rather a pity to see them wasting their time with this sort of thing. Especially Schmitz, who is second to none in the area of complicated chase-and-adventure stories, excepting the rather unfortunate "Undercurrents" published earlier in the year.

Whoever Hank Dempsey is, he has a talent for putting words to-

gether smoothly and cleverly. The idea behind "A Matter of Timing," while cribbed from one of your editorials of a couple of years ago, is nicely presented. Of course, the "news item"—is it for real?—may revive the complaint that you have been publishing about one non-science fiction story per issue. However, the borderline upon which this story rests is so vague and indefinite that I doubt anyone could adequately describe "A Matter of Timing" as either science fiction or "mainstream" fiction. Labels aside, the story was rather entertaining.

"Finnegan's Knack" is likewise entertaining, and most amusing in its picture of the all-too-human tendency to overlook what lies beneath one's nose. Phillifent is shaping up to be one of your better writers; his "Ethical Quotient" was one of the best stories I've seen in your magazine in some time.

I see from one of the fan magazines that H. Beam Piper died recently. That will be a great loss to Analog and the science-fiction world in general. Piper never produced any spectacularly brilliant stories, but continued, over the years, writing quietly excellent material. I don't think I have ever read a poor or mediocre story by Piper. His work was almost entirely of the type of solid, credible, consistent science fiction for which Analog has stood. Perhaps he will be remembered longest for his "Paratime Police" series, perhaps for his novel "Space Viking"; in any case he will be missed.

JOHN BOSTON
816 South First Street,
Mayfield, Kentucky

There's a limit somewhere to how long a serial installment should be. In this case, even if we used the entire magazine, "Prophet of Dune" would take two issues!

Dear Mr. Campbell:

Dawson and Bova's explanation of the quasi-stellar objects is not only highly speculative (that's fine) but unnecessarily complicated as well (that's not fine).

Why not apply Occam's Razor and change their hypothesis just a little—as follows:

Quasars may be little Big Bangs, each one the result of an unimaginably huge explosion that will eventually become a galaxy, or even a system of galaxies. The Universe may have started with a multitude of little Big Bangs rather than one big Big Bang.

This reasoning would not only seem to answer the questions posed by the discovery of the quasars but would still allow the Universe to be as big as it was before I read "It's Done With Mirrors".

I've been feeling cramped ever since!

DR. N. PAIGE
357 Yonge Street,
Toronto 1, Canada

Maybe God's fixing some popcorn?

Dear Mr. Campbell:

"It's Done With Mirrors," the article by Dawson and Bova which theorizes the possible nature of the quasi stellars was under discussion recently when Paul Ujfalusi suggested to me that such a theory might find supporting evidence from the scattered and clumped nature of galactic groups and zones. Supposing that the quasi stellars are the image—not ghost image, but the actual thing—of the original *big bang*, then, regardless of the path such photons took the curvature of space would cause older images to appear closer to us at intervals which would be almost certain to be spaced in "clumps" of images, any direction from earth, such clumps appearing less definite closer to earth. These clumps would average out into concentric spheres around the earth—from our point of view—each sphere representing a complete trip of an image around the universe. Such zoning of images would not only prove the theory, or support it, but would also give a figure for the circumference of the universe. Now, anybody got a telescope . . . ?

PETER B. HORSLEY
20 Hillgrove Drive SW,
Calgary, Alberta, Canada

Maybe we've just spotted the first layer of "clumps"?

THE ANALYTICAL LABORATORY

PLACE	STORY	AUTHOR	POINTS
1.	The Prophet of Dune (Pt. 1)	*Frank Herbert*	2.02
2.	A Matter of Timing	*Hank Dempsey*	2.86
3.	A Nice Day for Screaming	*James H. Schmitz*	3.00
4.	Finnegan's Knack	*John T. Phillifent*	3.79
5.	Final Report	*Richard Grey Sipes*	3.93
6.	The New Boccaccio	*Christopher Anvil*	4.73

THE EDITOR

FAMILIAR MYSTERY
continued from page 7

ment is a blank space in the photograph where there is no bubble trail; that blank space proves that an uncharged particle went by, because there's no sign of anything being present.

When I read it, I couldn't help thinking of the Elephant Joke, "Why do elephants paint their toenails red?" Answer: "So nobody will notice them when they climb up in cherry trees! You never caught one climbing a cherry tree, did you? See! It works!"

Particle physics, is, today, a familiar mystery; we are ready to accept proof-by-absence-of-evidence.

But subjective phenomena we deny, because we don't know how to collect evidence. We don't know how to perform subjective experiments, and objective experiments aren't the "proper and appropriate" type of experiments. They're as ill-suited to subjective problems, as chemical analytical experiments would be for distinguishing between a magnetized piece of steel and an unmagnetized piece.

The familiar mystery of creativity is something that every reader of this magazine is fully familiar with—or he wouldn't be a reader! Yet, if you check back over what I said about it above, you'll find that every statement is perfectly fair.

I believe that the most important aspect of realizing the fact that creativity belongs in the same class of entities as the other ESP talents will be to give us a better awareness of what sort of tests are *not appropriate or fair* in testing for other ESP talents.

In nuclear physics, proof-by-absence-of-evidence—proof by the fact that there isn't any proof!—is acceptable because our knowledge in that field is reasonably complete. The fact that laboratory tests haven't been able to get evidence of ESP, on the other hand, is *not* proper proof-by-absence-of-evidence, because we most definitely do *not* have reasonably complete knowledge of the field!

Let's imagine a test for creativity conducted as the "properly controlled laboratory conditions"—proper for objective phenomena, that is!—would be applied.

First, we'll try testing Beethoven, who is supposed to have a high degree of this hypothetical talent, called creativity, with respect for music. In the first place, it's obviously nonsense; the man's stone deaf, so he can't possibly have a talent for music. He couldn't hear what he'd produced, so how would he know that it was good or not?

But we'll test him anyhow. We'll wire him up thoroughly with telemetry devices, have a TV monitor system, and make a first test of the

statistics of his responses to a set of musical-note cards we have. Since he claims that that has no bearing on creating music, we'll rearrange things, and with the telemetry all working, give him signals to start creating for one minute, then a one-minute stop, and repeat, so that we can correlate the body telemetry with the claimed talent.

Now note this: because we, personally, have a familiarity with creativity—although we have no understanding, and can't explain why it is so—we know perfectly well that those conditions are so outrageously inappropriate as to be silly.

Yet could you explain *why* they are inappropriate? How do such conditions interfere with creativity? Oh . . . you mean you can't create when you want to? Oh . . . yeah . . . sure . . . that's a fine excuse, isn't it, for not being able to demonstrate your claim under really properly controlled conditions, isn't it?

We each have familiarity (but no understanding!) with respect to creativity—and we all know that no conscious or intellectual desire can either stop it or start it. Having spent many years in the business of dealing with individuals who depend one hundred percent on creativity for their livelihood, I can assure you that the fact that an author desperately wants a check for a successful story sale does *not* help him write a good story. Usually it has precisely the reverse effect; he blocks up, can't write anything but trash, and in desperation goes out and gets a job of some kind to get money to eat. *Then,* suddenly, creativity turns on!

Creativity being a purely subliminal and subjective faculty, it can be depended on to be undependable—as we all know from direct, personal experience. It creates cockeyed nonsense just as freely as it does profound discoveries; filtering its output is the major problem of a trained and disciplined conscious mind and it's by no means easy.

The product of creativity is new postulates—and it can be shown that generating postulates is a logical impossibility. Logic can manipulate and interact postulates according to rules—but it can not generate postulates. Only the nonlogical talent creativity can do that.

But creativity creates false postulates, too; it's a tremendous talent, the greatest power human beings have. And it's also the most dangerous; it's the true root of insanity.

Genius and insanity *are* much alike—each is the result of creativity giving new and different postulates.

Like other ESP talents, creativity is unreliable.

Probably if we studied subjective phenomena properly—and that does *not* mean "under properly controlled laboratory conditions"

until we do some research on what constitutes "properly controlled" conditions for *subjective* research —we could find out what factors cause the "noise" in subjective systems.

In the meanwhile, may I suggest that you go over what you know of the work that's been done on the other ESP talents, and reevaluate the experiments and their conclusions with respect to what you know, from direct personal awareness, of the characteristics of creativity.

Could those laboratory experiments, or experiments of that form, have detected creativity?

There are masses of spontaneous-occurrences data on file; these have been ignored and demeaned because no laboratory evidence of the phenomena have been demonstrated. But—only spontaneous occurrences of creativity have ever been observed; no laboratory demonstration of that subjective talent has ever been given. But, as I mentioned, the libraries are full of instances of spontaneous occurrence of creativity. That's what fills libraries, isn't it?

Try thinking of clairvoyance, telepathy, and the rest as being talents precisely similar to creativity —of precisely the same order of phenomena.

Equally erratic—and magnificent when they work. Equally uncontrollable, not responding to the conscious desire, or determination, or frantic necessity. With creativity, equally capable of producing insanity. And equally difficult to trap in a laboratory for analysis and understanding.

But, like creativity—equally real, despite the fact that no one has been able to demonstrate the phenomena to order satisfactorily.

And—equally and utterly *not* subject to the laws of objective physics!

Does distance have any bearing on creativity? On imagining a distant scene? What relationship should distance have to clairvoyance or telepathy, then?

Meaningless questions! What relationship does temperature have to magnetic field-forces? What group of the periodic table does electrostatic field-force belong in?

Man doesn't have characteristics that aren't consequences of the actual nature of the Universe. If you believe otherwise, then you truly do believe in the Supernatural. But if any talent Man has is a function of the Universe—then the subjective phenomena are just as natural to that Universe as the laws of objective physics.

Because so long as Man has that subjective talent creativity, we must acknowledge that subjective talents do in fact exist!

THE EDITOR

GET READY FOR THE SPACE and SCIENCE ERA! SEE SATELLITES, MOON ROCKETS CLOSE-UP

AMAZING OPTICAL BUYS

and OTHER SCIENTIFIC BARGAINS

Bargain! 3" Astronomical Telescope



See the stars, moon, phases of Venus, planets close up! 60 to 180 power—famous Mt. Palomer Reflecting type. Unusual Buy! Equipped with Equatorial mount; finder telescope; hardwood tripod. Included FREE: "STAR CHART"; 272-page "HANDBOOK OF HEAVENS"; "HOW TO USE YOUR TELESCOPE" book.

Stock No. 85,050-A ..... **$29.95 Postpaid**

4¼" Astronomical Reflector Telescope

Stock No. 85,105-A ..... **$79.50 F.O.B.**

SUPERB 6" REFLECTOR TELESCOPE!

Inc. electric clock drive, setting circles, equatorial mount, pedestal base. 4 eyepieces for up to 576X.

Stock No. 85,086-A ... **$195.00 F.O.B. Barrington, N.J.**



SCIENCE TREASURE CHESTS For Boys—Girls—Adults!

Science Treasure Chest — Extra-powerful magnets, polarizing filters, compass, one-way-mirror-film, prism, diffraction grating, and lots of other items for hundreds of thrilling experiments, plus a Ten-Lens Kit for making telescopes, microscopes, etc. Full instructions.

Stock No. 70,342-A ..... **$5.00 Postpaid**

Science Treasure Chest DeLuxe—Everything in Chest above plus exciting additional items for more advanced experiments including crystal-growing kit, electric motor, molecular models set, first-surface mirrors, and lots more.

Stock No. 70,343-A ..... **$10.00 Postpaid**

NEW Z-O-O-M TELESCOPE ZOOMS FROM 25X to 80X



Fine quality, erect image zoom telescope, for naturalists and hobbyists. 50 mm hard coated, anchromatic objective. Separate zooming and focusing adjustments. Field of view at 25X is 1-degree, 30 minutes; zooms to 0-degrees, 35 minutes at 80X. Magnification scale marked on eyepiece mount. High resolution over entire field. Excellent for both terrestrial and celestial observation. Includes sunglass for safe solar observation. 22½" long on sturdy 10" tripod.

Stock No. 70,623-A ..... **$35.00 Postpaid**

DELUXE SPOTTING SCOPE WITH REVOLVING TURRET



Spots large or small game at great distances. Shows target holes in sharp detail. 15X, 20X, 30X, 40X. Four eyepieces revolve on turret at flick of finger. Quick adjustment to each. Excellent 80 mm coated achromatic objective lens. Incl. "Dew-cap"; extendable sunshade; tripod with sturdy metal legs adjusts from 9" to 14"; chrome plated 9" ext. rod. Folds for carrying. Wgt. 4 lbs., 4 ozs.

STOCK NO. 70, 444-A ..... **$69.50 Ppd.**

Send check or M.O. Satisfaction or Money Back!
EDMUND SCIENTIFIC CO., Barrington, N. J.

MAIL COUPON for FREE CATALOG "A"

Completely New—1965 Edition
148 Pages—Nearly 4000 Bargains



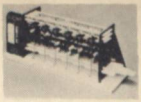
EDMUND SCIENTIFIC CO,
Barrington, New Jersey
Please rush Free Giant Catalog A

Name .....

Address .....

City..... Zone.... State.....

Solve Problems! Tell Fortunes! Play Games!



NEW WORKING MODEL DIGITAL COMPUTER

ACTUAL MINIATURE VERSION OF GIANT ELECTRONIC BRAINS

Fascinating new see-through model computer actually solves problems, teaches computer fundamentals. Adds, subtracts, multiplies, shifts, complements, carries, memorizes, counts, compares, sequences. Attractively colored, rigid plastic parts easily assembled, 12" x 3½" x 4¾". Incl. step-by-step assembly diagrams, 32-page instruction book covering operation, computer language (binary system), programming, problems and 15 experiments.

Stock No. 70,683-A ..... **$5.00 Ppd.**



NOW! EXPERIMENT WITH THE NEW FANTASTIC TOOL OF TOMORROW!

Measure . . Solve . . Study . . Create with

MOIRE PATTERNS KIT

A NEW, TIME-SAVING SHORT CUT TO ACCURATE ANSWERS IN DOZENS OF APPLICATIONS

Here's your introduction to a whole new world of technology. Unlimited experiments. Vivid demonstrations. Fun for lab and home experimenters, hobbiests. Inexpensively measure one part in billion. Measure diffraction pattern produced by lasers. Measure diffusion of molecules in solution or heatwaves. Study liquid flow, stress lines, distortion of metals. Reproduce math concepts visually. Photographers can harness this fascinating optical principle and achieve fantastic visual effects. Technically, moiré patterns are predictable patterns created by superimpositioning of one pattern over another. Using elements which include equi-spaced linear, logarithmetic and circular rulings, Dr. Gerald Oster, Brooklyn Polytechnic Inst., has developed a complete new scientific tool. Kit contains 8 basic patterns on both clear acetate lantern slide size 3¼" x 4" (.005" thick) and .010" thick with white Kromecoat paper 3¾" x 4½" (coated one side); (1) Coarse grating, (2) 65-line grating, (3) Logarithmic scale grating, (4) Radial lines, 5-degree, (5) Equispaced circles, (6) Fresnel zone plate, (7) Sphere projection, (8) Cylinder projection; one piece 3¼" x 4" 150-dot screen on film; copy of Dr. Oster's book, "The Science of Moiré Patterns", an authoritative introduction to the fascinating world of moiré.

Stock No. 70,718-A ..... **$6.00 Ppd.**

Stock No. 60,462-A Same as above without book **$4 Ppd.**

MOIRE PATTERN ACCESSORY KIT. For additional experiments. Incl. metallic balloon, calcite, two kinds of diffraction gratings, one-way mirror foil, polarizing materials, Ronchi rulings, assortments of lenses.

Stock No. 60,487-A ..... **$8.00 Postpaid**



CRYSTAL GROWING KIT

Do a crystalography project illustrated with large beautiful crystals you grow yourself. Kit includes the book "Crystals and Crystal Growing" and a generous supply of the chemicals you need to grow large display crystals of potassium aluminum sulfate (clear), potassium sulfate (purple), potassium sodium tartrate (clear), nickel sulfate hexahydrate (blue green) or heptahydrate (green), potassium ferricyanide (red), and copper acetate (blue green). **Stock No. 70,336-A $9.50 Postpaid**

WOODEN SOLID PUZZLES



12 different puzzles that will stimulate your ability to think and reason. Here is a fascinating assortment of wood puzzles that will provide hours of pleasure. Twelve different puzzles, animals and geometric forms to take apart and reassemble, give a chance for all the family, young and old, to test skill, patience and, best of all, to stimulate ability to think and reason while having lots of fun. Order yours now. **Stock No. 70,205-A** .....**$3.00 Postpaid**

ORDER BY STOCK NUMBER • OPEN ACCT. TO RATED FIRMS • SATISFACTION GUARANTEED!

EDMUND SCIENTIFIC CO., BARRINGTON, NEW JERSEY 08007

FREE RECORD ALBUM



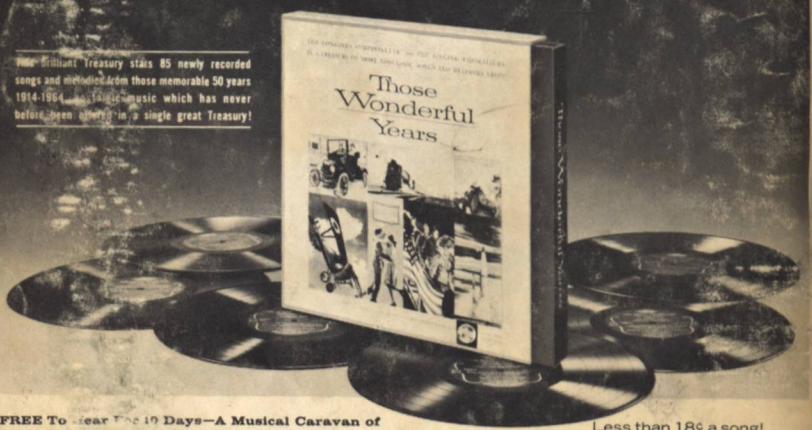
"DIXIELAND JAZZ from the TERRIFIC TWENTIES!"

Here are 10 of the all-time great Dixie and Blues songs from that fabulous madcap era! TIGER RAG . . . WHEN THE SAINTS GO MARCHING IN . . . THE WANG WANG BLUES . . . SOUTH RAMPART STREET PARADE . . . DARKTOWN STRUTTERS BALL . . . and five more favorites. All are yours in this superb, 12", freshly-recorded record album! It's a FREE gift to introduce this brilliant new Treasury, "THOSE WONDERFUL YEARS"!

THE LONGINES SYMPHONETTE'S THRILLING NEW TREASURY—

Those Wonderful Years

This brilliant Treasury stars 85 newly recorded songs and melodies from those memorable 50 years 1914-1964 . . . fabulous music which has never before been offered in a single great Treasury!



FREE To Hear For 10 Days—A Musical Caravan of Memories... 85 of America's Most Familiar and Popular Songs!

Yes—The Longines Symphonette and The Singing Choraliers travel again through the nostalgic, romantic and sentimental years that spawned your most precious memories! Here in six pure vinyl records you'll find your fondest recollections brought back to vivid life. Do you remember... BEGIN THE BEGUINE... SLEEPYTIME GAL... EMBRACEABLE YOU... BODY AND SOUL... SECRET LOVE... YOU MUST HAVE BEEN A BEAUTIFUL BABY... NIGHT AND DAY ... LULLABY OF BROADWAY. They're all in this superb new-for-1965 Treasury... 85 selections in all, **none have ever been offered before by The Longines Symphonette.** Sweeping, emotional arrangements bring forth all the virtuoso skills of The Longines Symphonette, while The Singing Choraliers capture the essence and mood of each song they sing.

The Songs You Love—Listen FREE For 10 DAYS!

Just mail the coupon below or the postage-paid card attached. "THOSE **WONDERFUL** YEARS" will be sent you to play again and again for 10 days FREE. At the end of that time, return the Treasury and owe nothing—but keep your FREE "DIXIELAND JAZZ" RECORD ALBUM! Experience in your own home the amazing true-to-life "Living Sound" of The Longines Symphonette. Discover the extra pleasure and silken quality of these finest pure vinyl records. Admire the handsome full-color, stamped-in-gold presentation case! See for yourself why records of this deluxe quality might cost you as much as $29.70 in fine record stores... yet you save almost 50% by accepting this limited invitation! Mail card or coupon today!

Just a Few of The 85 Great Memory Songs You'll Enjoy in "Those Wonderful Years":

LA VIE EN ROSE
DON'T GET AROUND MUCH ANYMORE
LADY IN RED
SWANEE
GOOD-BYE, BROADWAY, HELLO FRANCE
TEA FOR TWO
CHARLESTON
PEG O' MY HEART
APRIL IN PARIS
JALOUSIE
JUST ONE OF THOSE THINGS
CHATTANOOGA CHOO CHOO
BLUES IN THE NIGHT
INDIAN SUMMER
BLUE MOON
FASCINATIN' RHYTHM
THE CONTINENTAL
SWEET AND LOVELY
MORE THAN YOU KNOW
DEEP NIGHT
MACK THE KNIFE
MY REVERIE
ROSE MARIE
WONDERFUL ONE

Less than 18¢ a song!

ONLY $5 A MONTH OR $14.95

All six records in deluxe full-color, stamped-in-gold presentation case! 85 freshly recorded selections!



KEEP FREE RECORD ALBUM!

Remember... you keep "DIXIELAND JAZZ from the 'TERRIFIC TWENTIES'" as your FREE gift even if you return the six-record Treasury of THOSE WONDERFUL YEARS.

TEAR OFF AND MAIL POSTAGE-PAID CARD TODAY!
No stamp needed! Or mail convenient coupon below.

THE LONGINES SYMPHONETTE RECORDING SOCIETY
Longines-Wittnauer Tower • Fifth Avenue • New York, N.Y. 10036

YES—send my FREE record album along with the six-record Treasury, "Those **Wonderful** Years." I may return Treasury after 10 days and owe nothing or will send just $5 a month until the full price of $14.95 (plus modest postage-handling cost) is paid. I KEEP FREE "DIXIELAND JAZZ" RECORD ALBUM in any event!

CHECK HERE FOR STEREO R1091-185

☐ STEREO EDITION just $1.80 more for all 6 records

Name _____
(Please Print)

Address _____

City _____ State _____ ZIP or Zone _____

☐ SAVE EVEN MORE! Enclose $14.95 (Stereo Edition $16.75) and we pay all postage-handling costs. Same FREE record offer and 10-Day Trial. Prompt refund guaranteed. N.Y.C. residents only add 4% sales tax!